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U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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JANUARY 1963
Volume 14 No. 1

ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 1 JANUARY 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

January 1963 ranks among the coldest months on record. Below-normal temperatures were more extensive than for any other January, covering all the Nation except Maine and southeast Florida. The thermometer dipped below freezing everywhere except southern Florida and caused some crop damage in the Southwest Border region from Texas to California. Several stations in the Midwest and South recorded their lowest temperatures during records dating back several years before the beginning of the 20th century. In some northern areas the combination of extreme cold, strong winds, and snow at times equaled in severity that of any winter weather in this century. Lake Erie was almost completely frozen over, a very rare occurrence. Precipitation over most of the Country was well below normal. Snowfall was heavy in the Great Lakes region and Northeast, but very light in the Far West where the mountain snowpack remained much below normal. The weather was mild, relative to normal, in Alaska where Anchorage had above normal temperatures the last two-thirds of the month with 17 days of fog, a new record; Fairbanks had its warmest January in 26 years; Barrow had 33° on the 17th equaling the highest of record there for January; and Juneau on the 5th had its first thunderstorm on record for January.

TEMPERATURE. --The month was generally 2° to 6° colder than normal west of the Continental Divide, 6° to 12° in the Midcontinent, and 2° to 4° colder than normal east of the Appalachians. This was the coldest January since 1940 in the East and since 1949 or 1937 in most of the Far West. The first 9 or 10 days of the month were rather cold in the East and mostly unseasonably mild elsewhere.

Beginning in the northwestern portion of the Country about the 10th, the first severe cold wave of the month overspread the remainder of the Country by the 14th. Temperatures fell to subzero levels from the Cascade-Sierra Nevada Mountains to the Great Lakes and Ohio Valley, and to freezing in extreme southern areas from Mobile, Ala., to San Diego, Calif. At the latter station this was the 10th freeze since 1871. As the cold wave swept across Texas on the 13th and 14th, temperatures fell to near record low levels in the Panhandle and freezing was general in the southern part of the State. Although this freeze in southern Texas was not as severe as that of 1961, crops were unusually susceptible to continuous freezing for 24 to 30 hours in the Winter Garden and San Antonio areas as a result of near record high temperatures for the season in the 80's and 90's preceding the freeze. In southern Arizona freezing was continuous as long as 15 hours in the Salt River Valley where a low of 12° was reported. Of the several cold waves during the month three reached Brownsville, the most there in 1 month since 1884.

During the third and fourth weeks the weather was unusually cold, particularly in the Midwest and South where several stations reported alltime low temperatures, and many others their lowest for January. Also during this period lowest readings in Texas ranged from 19° to 24° in the lower Rio Grande Valley and 15° to 18° in the Winter Garden and San Antonio areas. In north-central areas periods of continuous subzero temperatures were among the longest on record, and the number of days with subzero minima were the greatest for January at a few places. Milwaukee, Wis., had -10° or lower on 14 days, a new record, and a 15-day period (January 14 through 28) for which the average temperature was -4.2°, the coldest such period on record at that city. Minneapolis, Minn., had 157 continuous hours of subzero temperatures beginning at 2:00 a.m. on the 18th, the second longest such period on record. The longest such period at Minneapolis was 186 hours beginning at 8:00 p.m. December 31, 1911, followed by 4 hours of above zero, then another 113 hours of zero or colder from 6:00 p.m. January 8, 1912.

In the following table are listed some stations that recorded alltime low temperatures during January 1963:

Station	Lowest	Date	Previous Low
Nashville, Tenn.	-15°	24	-13° Feb. 1951
Lexington, Ky.	-21°	24	-20° Feb. 1899
Cleveland, Ohio	-19°	24	-17° Jan. 1873
Toledo, Ohio	-17°	24	-16° Feb. 1899
Louisville, Ky.	-20°	24	-20° Jan. 1884
Akron, Ohio	-21°	24	-20° Feb. 1899
Grand Junction, Colo.	-23°	13	-21° Feb. 1933

Low temperatures set new records for January in the following listed states:

State	Lowest	Date	Station	Previous Low
*Arizona	-37°	13	Maverick	-33° 1949
Florida	7°	24	Milton Exp. Station	8° 1940
Indiana	-34°	28	Greensburg	-33° 1887
*Kentucky	-34°	28	2 Stations	-25° 1936
Tennessee	-30°	24	Kingston Springs	-23° 1942
*Texas	-24°	19	Sunray	-19° 1912
Hawaii	20°	8	Haleakala Summit	22° 1955

* Also lowest for any month.

Frost penetration at the end of the month was about 3 feet in Iowa, and ranged from 12 to 15 inches in Kansas, and 20 to 24 inches in the agricultural areas of Washington.

PRECIPITATION. --During the first week precipitation was negligible in most of the Country. Significant amounts fell only along the north Pacific coast where totals ranged up to 2 inches or more, and parts of the southwestern Great Plains and lower Mississippi Valley where amounts ranged up to an inch. Precipitation during the second week was mostly limited to areas east of the Mississippi with heavy rains in the South where totals ranged up to over 2 inches.

Precipitation the third week totaled 0.50 except for 0.50 inch or more in parts of the Pacific Northwest and upper Rocky Mountains, Gulf coastal areas, and east of the Appalachians. Heaviest amounts of 2 to over 4 inches fell in the Carolinas, Georgia, Alabama, and southern portions of Mississippi and Louisiana where thunderstorms occurred on the 17th. Significant amounts in the fourth week were almost all limited to the middle of the Florida Peninsula, the Appalachian region, and the Northeast.

Storms the last 3 days of the month were responsible for heavy precipitation in the Pacific States, except extreme southern California, and in all northern areas west of the Continental Divide. In Utah 5.08 inches in 24 hours at Deer Creek Dam set a new alltime record for Utah.

Totals for the month ranged up to 6 inches or more along the central and east Gulf coast and in most of Alabama, Georgia, and South Carolina where some stations measured more than twice their usual February amounts. The northern and central Rockies and west-central portion of the Great Plains was another area with above normal precipitation. In this area totals ranged up to more than 2 inches, over 200 percent of normal in the northern Rockies. Parts of the Sierra Nevada Mountains also had over 200 percent of normal.

SNOWFALL. --Unusually light snowfall in most of the Far West kept the mountain snowpack much below normal. In parts of Washington and Oregon the pack was near the lowest of record. Heavy amounts, however, fell in parts of the northern Rockies where Missoula, Mont., reported 42.5 inches, the most for January since the beginning of records there in 1892.

In the Northeast, storms on the 23d and 24th and 26th and 27th each yielded 1 to over 2 feet of snow in northern portions of New York and New England, and over a foot in the northern Great Lakes region. Watertown, N. Y., measured over 5 feet of new snow in one week near the end of the month. Snow depths in the Great Lakes region and Northeast increased by as much as a foot during the month. Akron, Ohio, had a continuous cover for 37 days, from December 6, 1962, to January 10, 1963, the second longest such period on record there.

SEVERE STORMS. --Minor damage by unusual weather during January was widespread, but the overall total was considerable. The damage was caused mostly by freezing, glaze, wind, and snow. Freezing caused some crop damage in the Southwest Border area, and froze pipes and sewers locally, in many sections.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature — Monthly extremes						Precipitation — Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In
Alabama	Thomasville	79	11	Waterloo	-8	24	Brookwood	9.66	Waterloo	1.26
Alaska	Cape Sarichef Lgt. Sta.	57	28	Allakaket	-60	8+	Port Alexander	16.63	Farewell FAA	.13
Arizona	Tombstone	88	26	2 Stations	-37	13+	Maverick	3.47	7 Stations	.00
Arkansas	Crossett 7S	79	10	Mammoth Spring	-15	24	Arkadelphia	2.80	Lead Hill	.00
California	Santa Monica Pier	84	7	Bridgeport	-19	12	Strawberry Valley	17.77	6 Stations	.00
Colorado	Eversoll Ranch	76	31	Taylor Park	-54	12	Wolf Creek Pass 4W	5.40	Las Animas	.00
Connecticut	Coventry	55	1	2 Stations	-16	29	Trap Falls Reservoir	4.30	Norwalk Gas Plant	1.99
Delaware	2 Stations	62	12+	Newark University Farm	-2	29	Bridgeville 1NW	2.81	Wilmington Porter Reservoir	1.88
Florida	Canal Point USDA	90	19	Milton Exp. Sta.	7	24	Pensacola FAA AP	8.50	Perrine	.00
Georgia	2 Stations	80	19+	Blue Ridge	-9	24	Butler	9.66	Brunswick FAA AP	1.54
Hawaii	Pahala 21, Hawaii	93	31	Haleakala Summit, Maui	20	8	Kanalohuluhulu, 1075, Kauai	20.39	Pepeekeo Makai 144, Hawaii	1.07
Idaho	Glenns Ferry	56	2	Idaho Falls 16SE	-51	12	Powell	7.33	Idaho Falls 2ESE	
Illinois	2 Stations	68	9	2 Stations	-26	28	Glendale Exp. Sta.	2.00	Quincy FAA AP	.15
Indiana	Evansville	66	9	Greensburg 3SW	-34	28	Evans Landing Dam 43	2.40	West Lafayette 6NW	.36
Iowa	2 Stations	59	8	Saratoga 2E	-40	15	Fort Madison	D 1.55	Waukon	.04
Kansas	Elkhart	75	31+	Ellsworth	-21	27	Russell Springs	3.05	3 Stations	
Kentucky	Dewey Dam	70	12	2 Stations	-34	28+	Princeton	5.81	Hartford 6NW	.26
Louisiana	Urania	82	10	Chatham	3	24	Eunice	9.41	Logansport	1.00
Maine	3 Stations	48	24+	Bridgewater	-37	26	Jonesboro	5.47	St. Francis	1.10
Maryland	Waldorf Police Barracks	65	14	Oakland 1SE	-27	29	Crisfield Hammock Point	3.10	Luke	.65
Massachusetts	Plymouth	57	20	Birch Hill Dam	-22	29	Sandwich	4.42	Adams	2.00
Michigan	North Manitou Is. No. 2	55	9	Fife Lake 2S	-38	15	Pellston FAA AP	3.95	Saginaw Center Road St.	.20
Minnesota	Willmar State Hospital	58	8	Big Fork	-47	19	Winnebago	1.29	Argyle	.00
Mississippi	Edinburg	84	9	Aberdeen	-7	24	Decatur	9.75	Clarksdale	.79
Missouri	Hermitage	73	9	Greenville 4NNW	-25	24	Festus 2NW	2.01	Praire Hill 3WNW	.02
Montana	2 Stations	64	8+	West Yellowstone	-60	12	Bozeman 12NE	4.11	3 Stations	
Nebraska	Trenton Dam	64	9	Anselmo	-37	27	Winside	2.69	Lamar	.09
Nevada	Mesquite	70	31	Mountain City RS	-40	12	Mt. Rose Highway Sta.	10.27	Pahrump	.00
New Hampshire	Tamworth 2	55	6	2 Stations	-31	25+	Gilmanton	4.45	Marlow	1.55
New Jersey	Freehold	60	10	Layton	-20	29	Bass River State Forest	3.18	Manville	D 1.39
New Mexico	Bitter Lakes WL Refuge	83	31	Garilan	-46	13	Clines Corner	3.15	3 Stations	.00
New York	N. Y. Westerleigh Stat. Is.	56	10	Angelica	-28	29	Hooker	6.93	Brookport 2NW	.65
North Carolina	Whiteville	77	11	Banner Elk	-17	24	Sloan 3S	7.36	Southern Pines 2W	1.15
North Dakota	La Moure	57	2	Medora 3NNE	-40	27	Amidon	1.18	2 Stations	.00
Ohio	Ironton	67	11	Jackson 2NW	-31	29+	Piketon AEC Pump Sta.	D 2.68	Montpelier	.24
Oklahoma	Antlers 2ENE	78	9	Boise City 2E	-17	12	Bear Mountain Tower	1.75	2 Stations	.00
Oregon	Brookings	67	4	Hardman	-32	11	Valsetz	7.33	Drain 1NNE	.21
Pennsylvania	Johnstown	62	12+	Titusville Water Works	-30	29	Johnstown	4.00	Kane	.31
Puerto Rico	2 Stations	91	24+	Guineo Reservoir	52	31+	Estate Belvedere	13.31	Puerto Real	1.05
Rhode Island	Providence WBAP	55	20	Greenville	-2	25	Kingston	3.65	Greenville	3.19
South Carolina	3 Stations	77	12+	Caesars Head	-5	24	Fort Mill 4NW	8.30	Edisto Island 5SW	2.07
South Dakota	7 Stations	62	8	Custer	-43	19	Lead	2.58	Britton	.03
Tennessee	Memphis WBAP	74	10	Kingston Springs 3NE	-30	24	Athens 2SE	5.53	Sam Burk Wild Life Rfg.	D .65
Texas	Agua Nueva	95	10	Sunray 4SW	-24	19	Orange Gulf States Uti.	6.24	65 Stations	.00
Utah	Zion NP	64	9	2 Stations	-38	12	Silver Lake Brighton	6.60	3 Stations	.00
Vermont	Bennington 2NNW	52	20	Chelsea	-26	30	Peru	4.92	Burlington WBAP	1.14
Virginia	Norfolk WBAP	72	11	Wise 1SE	-23	24	Suffolk Lake Kilby	4.11	Galax Radio WBOB	.40
Washington	Packwood	65	2	Mount Spokane Summit	-23	10	Amanda Park	8.57	3 Stations	
West Virginia	Williamson	70	12	Birch River 6SSW	-28	28	Pickens 1	3.35	Peterburg	.45
Wisconsin	Prairie Du Chien	50	8	Hatfield Hydro Plant	-47	15	Fontana	D 1.60	Superior 7SE	.06
Wyoming	3 Stations	60	8+	Dixon	-55	12	Moran 5WNW	3.75	Wamsutter 1N	.04

\+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of snowfall.

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	995.7	1021.9	49	28	38.2	- 7.3	70	10	- 2	24	0	20	31	79	7.32	2.29	2.99	14	3	T	T	9.4	NNW	31	NW	23	7	4	20	7.1	39
HUNTSVILLE	605	997.7	1021.9	46	25	35.6	- 7.3	67	11	- 4	24	0	22	26	69	3.59	-1.63	0.75	11	1	2.6	2	9.7	SE	36*	NNW	23	9	5	17	6.4	
MOBILE	211	1018.4	1020.7	56	36	46.2	- 6.3	73	10	8	24	0	12	36	69	7.14	2.50	4.57	13	2	0.0	0	8.7	N	34*	NW	23	6	4	21	7.7	
MONTGOMERY	195	1013.2	1021.6	53	31	41.8	- 6.3	74	11+	5	24	0	20	29	64	7.14	3.08	2.53	13	5	T	T	9.4	NW	32	NW	23	5	6	20	7.5	37
ALASKA												B																				
ANCHORAGE	90	1014.9	1019.9	25	14	19.2	6.8	43	20+	-22	9	0	31	13	76	2.09	1.29	0.70	11	0	15.5	10	5.7	N	21*	SE	19	4	4	23	8.0	26
ANNETTE	110	1019.3	1023.4	41	33	36.9	2.5	50	6	17	10	0	12	31	81	8.15	-3.21	2.76	19	0	3.2	6	6.3	N	33*	SSE	4	1	4	26	9.0	
BARROW	22	1026.4	1026.9	- 1	-17	- 9.0	7.2	35	29	-44	8+	0	31	-18	63	0.52	0.34	0.19	10	0	3.1	9	14.8	ENE	40*	ESE	31	0V	1V	7V	9.3	
BARTER ISLAND	39	1025.7	1027.7	- 2	-19	-10.6	6.2	36	29	-44	8+	0	31	-20	59	1.79	1.39	0.84	8	0	10.5	20	14.3	E	37*	W	25	10X	12X	9X		
BETHEL	125	1013.5	1014.8	25	15	19.6	16.0	48	17	-32	8	0	22	14	78	2.35	1.23	0.69	14	0	3.1	3	12.4	NNE	28*	E	17	4	4	23	7.9	
COLD BAY	94	1003.4	1007.2	38	31	34.1	6.3	48	27+	8	5	0	12	31	87	4.91	2.59	1.86	21	0	0.9	1	21.2	SE	58*	SSE	11	1	4	26	8.8	
CORDOVA	40	1017.3	1018.9	35	21	27.8	4.7	42	18	-10	9+	0	30	25	90	8.13	2.03	0.22	15	0	19.7	13	3.9	ESE	21*	ESE	2	3	5	23	8.1	
FAIRBANKS	436	1005.1	1024.3	9	- 6	1.7	12.8	35	20+	-50	8	0	31	- 3	80	1.78	0.89	0.52	15	0	17.5	17	3.5	N	14*	NNW	19	3	6	22	8.3	
JUNEAU	17	1021.3	1022.3	33	23	27.7	2.6	50	6	- 1	9+	0	25	24	84	6.55	2.55	1.91	20	1	12.2	6	6.2	ESE	37*	ESE	4	1	5	25	9.0	15
KING SALMON	43	1012.5	1014.8	32	18	24.9	11.5	53	27	-30	7	0	20	19	77	1.55	0.48	0.49	14	0	2.6	2	11.6	E	37*	E	21	8	4	19	7.0	
KOTZEBUE	10	1021.3	1021.7	15	5	10.3	16.0	37	18	-32	7+	0	30	6	81	1.01	0.62	0.81	7	0	2.1	9	15.9	ESE	43*	E	21	7	0	24	7.6	
MC GRATH	334	1008.8	1022.5	8	- 1	3.8	12.8	38	20	-56	8	0	31	- 4	76	0.46	-0.80	0.24	9	0	9.5	17	2.3	N	17*	N	21	4	6	21	7.8	
NOME	13	1018.0	1018.6	25	15	20.3	15.9	43	26	-36	7	0	23	14	79	2.03	1.01	1.23	11	0	4.5	14	15.8	E	33*	E	17	7	2	22	7.6	16
ST. PAUL ISLAND	22	1004.1	1005.2	34	27	30.3	4.9	43	27	4	5+	0	18	28	90	2.03	0.22	0.68	17	0	1.6	3	20.7	E	49*	E	25	0	0	31	10.0	
SHEMYA	122	989.7	993.4	37	32	34.5	3.2	40	22+	24	3	0	13	32	89	1.34	-1.16	0.29	21	0	2.7	1	19.6	NNE	44*	ENE	20	0	3	28	9.2	
YAKUTAT	28	1019.0	1020.0	35	27	30.6	3.6	44	5	2	1	0	19	29	93	12.20	1.34	2.32	22	0	19.6	10	6.2	ENE	35*	SE	3	3	3	25	8.6	
ARIZONA																																
FLAGSTAFF	6993	789.2	1020.7	39	12	25.4	- 2.9	53	22+	-20	12	0	29	12	61	0.96	-0.87	0.55	6	0	9.9	5	8.4	NE	35	SSW	18	20	2	9	3.5	
PHOENIX	1117	978.7	1018.5	62	35	48.4	- 2.3	77	31	20	13	0	11	24	42	0.55	-0.18	0.50	3	0	0.0	0	5.3	E	25*	NW	19	20	1	10	3.6	84
PRESCOTT	5014	847.3	1019.8	49	22	35.5	- 1.6	63	31	1	13	0	27	16	51	0.24	-0.77	0.19	2	0	T	T	8.5	S	45	N	19	20	4	7	3.3	81
TUCSON	2584	927.5	1017.4	61	35	48.3	- 1.0	77	31	21	13	0	11	27	50	0.59	-0.23	0.36	3	0	0.0	0	8.5	SSE	29	W	19	13	8	10	4.6	83
WINSLOW	4880	853.0	1024.0	42	14	27.7	- 3.8	68	31	-13	13	0	28	15	65	0.52	-0.09	0.30	3	0	6.2	4	7.4	SW	32*	WSW	18	15	7	9	4.0	
YUMA	199	1013.9	1019.1	67	40	53.2	- 3.2	76	27+	28	14+	0	4	25	41	0.50	0.11	0.50	1	0	0.0	0	7.5	N	34	N	19	18	6	7	3.5	85
ARKANSAS																																
FORT SMITH	449	1004.5	1022.3	43	21	31.8	- 8.0	69	9	1	24	0	23	20	67	0.70	-1.96	0.65	3	0	T	T	8.1	ENE	26	N	23	13	4	14	5.6	55
LITTLE ROCK	257	1008.3	1022.2	45	23	34.0	- 6.6	77	10	2	24	0	25	23	69	0.87	-4.35	0.35	11	0	0.7	T	8.0	N	31	NW	22	11	5	15	5.9	50
TEXARKANA	361		1021.9	48	27	37.4	- 7.7	75	10	6	24	0	18	28	74	1.48	-3.36	0.89	12	0	0.2	T	8.6	NW								82
CALIFORNIA																																
BAKERSFIELD	494	1003.4	1021.6	57	33	44.9	- 2.5	70	31	20	13	0	19	28	58	0.12	-1.05	0.10	2	0	0.0	0	6.0	SE	28*	SE	12	20	2	9	3.5	
BISHOP	4108	876.1		56	17	36.5	- 0.3	69	22	2	13	0	29			3.22	2.23	1.91	3	0	0.0	0						22	4	5	2.3	
BLUE CANYON	5280	839.8		48	33	40.2	4.1	60	7	15	12+	0	14			15.68	3.98	9.10	4	0	7.4	7	9.5	ENE	67*	SSW	31	23	2	6	2.5	
BURBANK	699	993.0	1019.3	63	42	52.5	- 1.1	77	7	30	14	0	1	32	53	0.47	-2.67	0.51	2	0	0.0	0	4.8	S	28*	NE	12	17	3	11	4.1	
EUREKA U	43	1019.0		52	40	46.0	- 1.4	65	31	30	12	0	2			1.70	-5.00	0.89	5	0	0.0	0	5.6		38	SW	31	14	6	11	4.8	60
FRESNO	326	1008.4	1020.6	55	30	42.2	- 3.3	65	31+	19	13	0	23	31	73	2.16	0.13	1.18	4	0	0.0	0	5.4	NW	24	SE	31	17	6	8	3.7	71
LONG BEACH	34	1018.3	1019.9	65	44	54.2	1.8	82	7	25	13	0	1	38	60	0.29	-1.70	0.34	1	0	0.0	0	5.7	ENE	29*	ENE	12	16	5	10	4.5	
LOS ANGELES	97	1016.3	1019.9	64	47	55.2	1.8	81	7	30	13	0	1	38	60	0.62	-2.04	0.63	2	0	0.0	0	6.7	E	25*	W	10	15	6	10	4.3	
LOS ANGELES U	312			63	48	55.6	- 0.2	77	7	34	13	0	0			0.52	-2.55	0.53	3	0	0.0	0	6.0	W	23	W	10	16	5	10	4.2	69
MT SHASTA R	3544	895.7		47	24	35.2	1.9	58	24+	5	12	0	28			4.38	-1.98	2.42	3		11.1	8						24	0	7	2.8	
OAKLAND	3	1020.3	1020.6	54	38	46.1	- 1.9	63	5	30	14	0	8	35	70	2.68	-1.15	1.51	3	0	0.0	0	6.9	SE	32*	SSW	31	14	10	7	4.3	
POINT ARGUELLO	367	1003.7		60	39	49.5	- 0.2	77	7	25	14	0	10			0.71	-1.64	0.52	3	0	0.0	0	7.2		32*	SE	30	15	5	11	4.5	
RED BLUFF	341	1007.8	1021.1	55	31	43.0	- 2.5	72	6	24	14	0	21	27	64	3.49	-0.80	2.06	4	0	T	T	8.8	WNW	56	SSE	31	22	2	7	2.9	78
SACRAMENTO	17	1020.3	1021.2	50	32	41.1	- 5.1	62	31	23	13	0	21	33	79	4.71	1.53	2.47	6	0	0.0	0	4.6	NNW	34	NW	11	14	6	11	5.0	56
SACRAMENTO U	23			52	34	42.9	- 4.0	61	31+	27	13	0	16			3.65	0.07	1.92	4		0.0	0										
SANDBERG R	4517	863.9		48	33	40.4	0.5	64	22	11	12	0	10			0.07	-2.48	0.07	2	0	0.0	0	15.4		43*	ENE	12	22	3	6	2.7	
SAN DIEGO	13	1015.9	1019.2	64	46	55.1	- 0.4	81	7	31	13	0	1	40	60	0.11	-1.90	0.08	3	0	0.0	0	5.3	ENE	17	NW	13	12	7	12	5.0	67
SAN FRANCISCO	8	1020.3	1020.9	54	38	45.6	- 3.0	64	31	29	13	0	7	37	73	4.47	0.46	2.11	4	0	0.0	0	7.8	SSE	60	SSE	30	13	10	8	4.3	
SAN FRANCISCO U	52			55	45	50.4	- 0.3	66	8+	41	21+	0	0			3.35	-1.20	1.95	3	0	0.0	0	5.8		38	SE	30					55
SANTA MARIA	238	1011.2	1020.0	62	37	49.3	- 0.9	76	7	23	13	0	12	37	67	1.03	-1.81	0.82	4	0	0.0	0	5.2	WNW	23*	SE	30	17	6	8	3.8	
COLORADO																																
ALAMOSA	7536	767.6		33	- 8	12.5	- 4.9	54	30	-41	13	0	30			0.42	0.16	0.29	4	0	4.2	3						18	10	3	3.4	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days											Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
COLORADO	Ft.	Mb.	Mb.	°F.	F.	°F.	F.	F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO SPRINGS	6173	808.1	1020.9	36	8	21.9	- 6.7	66	31	-21	12	0	31	2	46	0.53	0.24	0.32	9	0	5.8	2	10.2	NNE	35*	N	26+	13	9	9	4.8	
DENVER	5283	834.9	1020.2	33	5	19.1	-10.9	65	31	-25	12+	0	31	4	57	0.71	0.16	0.26	9	0	9.1	3	11.3	S	38	NW	8	10	11	10	5.5	76
GRAND JUNCTION	4849	862.9	1027.8	23	2	12.1	-13.9	47	31	-23	13	0	30	4	73	0.99	0.35	0.39	8	0	17.7	12	3.1	ENE	21	NE	19	11	7	13	5.6	56
PUEBLO	4639	855.3	1021.5	36	3	19.3	-10.7	67	8	-26	12	0	30	4	57	0.33	0.02	0.18	5	0	7.0	4	7.9	SE	43	NW	4	17	6	8	4.1	80
CONNECTICUT																																
BRIDGEPORT	7	1018.3	1019.2	34	21	27.6	- 2.6	51	10	3	25+	0	28	19	70	2.34	-1.35	0.89	9	0	8.3	7	13.4	NE	46*	NNW	23	11	5	15	5.7	
HARTFORD	169	1011.6	1018.0	32	15	23.6	- 3.0	44	10	-10	29	0	31	16	73	2.92	-0.66	1.00	9	0	7.7	7	8.2	N	38	NW	27	9	6	16	6.5	59
NEW HAVEN	6	1017.9		35	20	27.5	- 2.1	49	10	3	25	0	30			2.84	-1.12	1.01	11	0	6.5	5	8.3		33	NW	24	12	5	14	5.7	63
DELAWARE																																
WILMINGTON	78	1016.3	1019.7	36	20	28.4	- 5.0	49	10	1	29	0	27	20	72	2.05	-1.35	0.67	10	0	5.2	4	9.3	WNW	45*	NW	23+	9	6	16	6.1	
DIST.OF COLUMBIA																																
WASHINGTON U	72			42	26	34.1	- 2.4	60	20	5	24	0	23			1.96	-1.45	0.53	10													
WASH NATL AP	14	1015.3	1020.0	39	24	31.4	- 5.5	59	20	3	24	0	27	19	62	1.86	-1.17	0.51	10	1	2.1	5	7.7	S	39	WNW	27	12	6	13	5.4	58
FLORIDA																																
APALACHICOLA U	13	1018.3		58	42	50.3	- 4.8	72	12	19	24	0	4			1.58	-1.56	0.41	11	4	0.0	0	6.2		34	NW	23	5	8	18	7.2	56
DAYTONA BEACH	31	1018.6	1020.5	68	47	57.4	- 1.8	84	20	32	25+	0	2	50	79	2.91	0.95	0.93	10	2	0.0	0	8.8	NW	23*	SSW	20	7	9	15	6.3	
FORT MYERS	13	1018.9		75	52	63.2	- 0.3	84	19	40	25+	0	0			0.81	-0.71	0.28	7		0.0	0	9.8		23*	S		12	12	7	5.0	
JACKSONVILLE	24	1019.7	1021.1	64	42	53.2	- 2.7	81	20+	24	24	0	8	43	74	5.39	2.94	3.02	8	1	0.0	0	8.0	NW	35	NW	23	6	9	16	6.8	59
KEY WEST	5	1017.7	1019.0	75	65	70.0	0.4	83	13	57	9	0	0	62	77	0.89	-0.64	0.51	6	0	0.0	0	11.2	ENE	33	N	21	12	10	9	5.0	78
LAKELAND U	214			70	49	59.4	- 2.3	83	20	34	25	0	0			2.19	0.14	0.61	9	1	0.0	0	8.0					9	10	12	5.5	60
MIAMI BEACH	9			75	64	69.2	0.1	80	27	47	9	0	0			0.58	-1.10	0.25	7	0	0.0	0	13.3		26	NW	7	8	13	10	5.3	56
MIAMI	7	1018.0	1019.3	75	59	67.1	0.2	85	27	44	9	0	0	59	76	0.65	-1.38	0.25	7	1	0.0	0	7.8	NNW	23*	ENE	29+	7	13	11	5.9	
ORLANDO	106	1015.5	1020.2	71	48	59.5	- 0.9	87	20	34	25	0	0	49	74	3.17	1.17	1.60	9	1	0.0	0	9.2	N	24*	WSW	21	10	9	12	5.8	
PENSACOLA U	13			57	39	48.2	- 5.9	70	11	10	24	0	9			7.29	3.01	2.76	13	2	0.0	0	10.1	N	28	NW	23					40
TALLAHASSEE	58	1018.3	1021.2	60	38	49.2	- 4.7	79	18	17	25+	0	12	40	72	5.30	1.88	2.81	10	2	0.0	0	9.6	N	46*	SW	20	4	6	21	7.8	
TAMPA	19	1018.8	1020.5	69	48	58.6	- 2.6	79	19	35	25	0	0	49	76	2.25	0.12	0.79	8	1	0.0	0	12.2	NE	29*	WSW	21+	7	11	13	6.1	60
WEST PALM BEACH	15	1018.5	1019.7	75	57	65.8	- 1.1	84	27	40	9	0	0	58	77	1.05	-1.43	0.41	5	0	0.0	0	10.1	NNW	21*	E	29+	3	18	10	6.5	
GEORGIA																																
ATHENS	803	991.3	1021.3	49	28	38.5	- 6.1	68	12	4	24	0	23	28	69	5.91	1.02	1.68	9	2	0.0	0	8.0	WNW	27*	NW	23	9	7	15	6.3	
ATLANTA	1005	977.6	1021.0	48	27	37.2	- 7.6	66	12	- 3	24	0	21	25	66	5.10	0.66	1.64	11	1	T	T	8.3	WNW	23*	WNW	27+	6	6	19	7.1	47
AUGUSTA	143	1013.7	1020.8	54	30	42.2	- 5.4	73	11	14	25+	0	22	32	72	5.25	2.26	1.93	12	2	T	T	5.8	NW	26*	WNW	21	8	7	16	6.5	
COLUMBUS	385	1006.4		54	30	42.1	- 5.7	71	12	3	24	0	20			6.24	2.18	2.42	13	4	T	T	8.5		27*	NW	27+	6	6	19	7.2	
MACON	356	1007.0	1021.0	54	32	43.0	- 6.2	71	12	6	24	0	21	31	67	6.92	3.55	3.08	12	4	T	T	7.6	NW	32	NNW	20	6	8	17	6.7	50
ROME	637	997.9		48	23	35.1	- 7.0	66	11	- 5	24	0	23			5.95	0.44	2.22	12	1	T	T						9	3	19	6.6	
SAVANNAH	48	1018.5	1021.3	57	36	46.8	- 4.9	76	11	19	25+	0	12	37	73	3.32	0.54	1.39	13	2	0.0	0	8.7	NE	40	NW	23	9	4	18	6.7	51
THOMASVILLE U	283			58	39	48.5	- 5.2	74	11	13	24	0	9			5.26	1.68	2.11	12	3	0.0	0						5	6	20	7.5	
HAWAII																																
HILO	31	1009.8		81	62	71.1	0.3	88	16	57	15	0	0			1.14	-0.68	0.52	12		0.0	0	7.9		37*	SSW	16	11	11	9	5.2	55
HONOLULU	7	1011.4	1011.8	78	64	71.1	- 1.4	81	29+	56	14	0	0	63	77	10.58	6.82	6.72	14	3	0.0	0	10.5	WSW	54	E	7	9	7	15	6.3	54
KAHULUI	44	1008.7	1011.7	80	62	71.0		82	30+	54	1	0	0	63	76	6.67		2.61	15	2	0.0	0	16.8	SSW	52	SSW	16	11	12	8	5.2	63
LIHUE	115	1005.7		79	63	71.3	0.4	83	29+	57	17	0	0			12.31	6.80	4.39	16		0.0	0	11.0		36	SW	31+	9	9	13	5.7	57
IDAHO																																
BOISE	2838	925.8	1025.9	32	15	23.3	- 5.3	46	1	- 7	12	0	30	11	64	1.13	-0.19	0.87	8	0	10.1	7	6.3	SE	29	W	10	7	6	18	6.9	59
IDAHO FALLS 42NW R	4790			23	- 5	8.9	- 4.5	46	4	-43	12	0	31			0.79	0.24	0.94	5	0			3.5	N	32Y	SSW	31					
IDAHO FALLS 46W R	4933	849.2		24	- 2	11.2	- 4.2	46	4	-35	12	0	31			1.04	0.31	1.08	6	0	4.2	3	4.9	NNE	29A	SW	31					
LEWISTON	1413	872.2		32	17	24.2	- 6.5	51	3	-11	11	0	28			0.78	-0.32	0.32	9	0	7.8	6						3	4	24	8.2	
POCATELLO	4444	865.9	1026.0	29	7	18.0	- 4.3	50	31	-22	12	0	31	10	72	1.48	0.27	0.78	10	0	8.9	6	8.9	SSW	47	S	31	5	8	18	7.4	51
ILLINOIS																																
CAIRO U	314	1008.5		37	20	28.2	- 9.2	64	9	- 5	24	0	26			0.79	-3.67	0.35	9	1	3.5	3	8.4	N	32	N	23	11	5	15	5.6	60
CHICAGO O HARE	658	994.3	1020.6	19	4	11.5		43	8	-19	23+	0	30	3	67	0.84		0.29	9	0	16.8	8	11.3	WSW	28*	NNW	23+	6	7	18	7.2	
CHICAGO MIDWAY	610	997.0	1021.3	21	6	13.3	-12.8	42	9+	-18	23	0	30	5	69	1.01	-0.85	0.34	10	0	21.1	8	12.0	W	31	NE	10	4	7	20	7.7	29
MOLINE	582	998.1	1022.1	18	1	9.7	-13.4	45	8	-26	28	0	30	2	67	0.91	-0.70	0.23	10	2	14.7	6	10.4	WSW	42	NW	20	5	8	18	7.4	41

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure: Station O	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max 90 F or above	Temperature: No. of days Min 32 F or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days 01 inch or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest m i Speed	Wind: Fastest m i Direction	Wind: Fastest m i Date	No. of days sunrise to sunset: Clear, 0-3	No. of days sunrise to sunset: Partly cloudy, 4-7	No. of days sunrise to sunset: Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft	Mb	Mb	F.	F.	F	F	F		F				F	%	In	In	In			In	In	M p h		M p h							%
ILLINOIS																																
PEORIA	652	998.6	1022.4	21	5	12.8	-12.9	49	9	-20	28	0	31	5	71	0.56	-1.32	0.17	9	0	7.0	5	10.7	WSW	31	W	20	7	3	21	7.3	36
ROCKFORD	728	992.6	1021.2	18	1	9.3	-12.7	45	8	-22	23	0	30	4	75	0.60	-1.38	0.26	11	0	11.3	6	10.5	WSW	27*	WNW	20	6	8	17	6.9	
SPRINGFIELD	588	997.3	1021.9	26	9	16.9	-11.5	53	9	-17	26	0	31	8	69	0.41	-1.48	0.18	10	0	5.2	4	12.1	WSW	36	W	12	7	6	18	7.1	41
INDIANA																																
EVANSVILLE	381	1005.3	1022.1	34	14	23.9	-10.3	65	9	-18	28	0	27	15	69	0.85	-2.13	0.26	9	2	3.2	3	6.6	NW	28	NW	23	11	3	17	6.2	50
FORT WAYNE	791	987.6	1020.7	24	7	15.9	-10.6	50	10	-18	31+	0	31	10	76	0.93	-1.74	0.34	12	0	8.8	7	9.7	W	37	W	20	4	9	18	7.3	31
INDIANAPOLIS	793	989.5	1021.1	28	11	19.5	- 9.6	54	10	-18	28	0	30	12	73	1.15	-1.90	0.43	10	1	9.0	6	11.6	WSW	33*	NW	23	7	7	17	6.9	59
SOUTH BEND	768	991.0	1020.2	21	6	13.3	-12.3	39	9	-17	23	0	30	7	74	1.28	-0.92	0.35	12	0	16.4	15	11.3	SW	25*	SW	12+	4	3	24	8.2	
IOWA																																
BURLINGTON	694	994.4	1022.3	21	4	12.9	-11.5	50	8	-18	23	0	31	6	74	0.99	-0.65	0.29	12	0	14.4	9	10.8	WSW	36	NW	20	6	6	19	7.2	47
DES MOINES	948	989.6	1020.0	17	1	8.5	-12.8	52	8	-22	23	0	31	2	75	0.83	-0.47	0.17	12	0	15.9	8	9.2	WNW	37	NW	20	6	5	20	7.5	40
DUBUQUE	1065	994.4		15	- 1	7.1	-12.1	41	8	-24	23	0	31			1.08	-0.75	0.52	12	0	11.8	9			31*	WSW	23+	6	6	19	7.3	
SIOUX CITY	1095	979.1	1023.3	20	- 1	9.2	- 9.5	59	8	-18	27	0	31	0	70	0.89	0.11	0.40	12	0	13.6	9	10.3	NNW	50	N	20	5	9	17	7.0	50
WATERLOO	868	988.4	1022.2	16	- 2	6.9	-11.5	48	8	-28	15	0	31	1	76	0.48	-0.67	0.26	7	0	6.8	5	10.3	NW	46*	WNW	20	5	7	19	7.3	
KANSAS																																
CONCORDIA	1470	971.3	1022.6	27	7	16.9	-11.1	60	9	-13	27	0	30	9	75	0.57	-0.13	0.22	10	0	8.3	4	12.2	N	40*	NW	12	10	8	13	5.8	54
DODGE CITY	2594	929.2	1021.9	35	9	22.2	- 8.9	67	8	-12	12	0	31	10	63	0.56	-0.01	0.45	8	0	0.4	T	11.4	NNE	40	NE	22	13	6	12	4.9	77
GOODLAND	3645	888.1	1021.7	31	5	17.8	- 9.6	61	8	-19	12	0	31	7	68	0.52	0.13	0.23	8	0	9.4	3	13.2	WSW	37*	NNW	11	13	6	12	5.2	
TOPEKA	877	984.9	1022.9	28	8	18.0	-10.8	65	8	- 9	23	0	31	11	73	0.56	-0.46	0.34	5	0	5.5	3	12.2	N	35	N	22	6	7	18	6.9	46
WICHITA	1321	970.7	1021.9	33	12	22.2	- 9.8	62	8	- 7	12	0	29	12	67	1.22	0.41	0.94	5	0	3.7	3	13.0	NNE	47	N	22	11	6	14	5.5	60
KENTUCKY																																
COVINGTON	869	987.2	1020.7	33	12	22.2	-10.4	56	9	-19	24	0	29	14	72	2.04	-1.52	1.12	11	1	9.6	7	6.9	SSW	21*	NNW	23	9	4	18	6.7	
LEXINGTON	979	984.2	1021.5	37	17	26.6	- 7.9	60	11	-21	24	0	26	20	77	1.47	-3.47	0.68	9	2	6.8	5	8.8	SSW	23*	WNW	11	9	8	14	5.9	
LOUISVILLE	474	1001.5	1021.5	37	16	26.1	- 8.4	63	9	-20	24	0	28	16	67	1.18	-2.92	0.44	11	1	6.0	5	7.5	W	25	S	9	9	5	17	6.5	50
LOUISIANA																																
ALEXANDRIA	92	1017.2	1022.1	54	31	42.0		77	10	11	24	0	16	34	76	4.14		0.95	12	3	T	T	6.5	NNE				5	8	18	7.2	
BATON ROUGE	64	1018.0	1021.3	58	36	47.1	- 5.3	78	10	12	24	0	13	37	73	3.64	-1.14	1.34	8	3	T	T	9.4	NNW				3	8	20	7.6	
LAKE CHARLES	14	1019.6	1021.2	55	37	45.9	- 7.3	73	11+	17	24	0	12	40	80	5.07	0.63	1.70	8	5	T	T	10.0	N	29*	N	23	3	7	21	7.9	
NEW ORLEANS	3	1018.7	1021.0	57	38	47.5	- 6.6	78	30	14	24	0	9	41	80	5.21	1.37	3.20	9	2	T	T	8.9	ENE	28*	N	23	4	7	20	7.8	
NEW ORLEANS AUDUBON	6	1013.8		59	41	50.1		78	30	17	24	0	10			4.59		2.23	9	1	0.0	0	5.7		25	NW	23	5	4	22	7.7	34
SHREVEPORT	252	1012.6	1022.2	50	29	39.6	- 7.9	78	10	9	24	0	17	29	71	1.46	-3.34	0.53	11	0	T	T	9.7	SE				10	4	17	6.3	44
MAINE																																
CARIBOU	624	990.9	1015.3	22	5	13.4	2.9	39	1	-25	26	0	31	9	79	2.40	0.29	0.78	13	0	30.7	32	11.2	WSW	37*	W	28+	5	7	19	7.5	
PORTLAND	61	1012.4	1016.5	32	15	23.6	1.8	46	10	- 7	29	0	31	16	74	2.73	-1.64	1.02	8	0	18.4	14	9.1	N	33	W	27	8	3	20	6.9	46
MARYLAND																																
BALTIMORE	146	1015.8	1019.9	38	20	28.8	- 6.0	57	10	- 7	29	0	27	18	72	1.84	-1.59	0.48	10	1	3.7	3	8.0	WNW	40	NW	24	14	4	13	5.3	53
BALTIMORE U	14			39	25	31.7	- 5.6	55	10	4	24	0	25			1.78	-1.65	0.52	9														
FREDERICK	294			35	16	25.5	- 7.4	50	10	-10	29	0	29																				
MASSACHUSETTS																																
BLUE HILL OBS R	629	991.7	1016.0	34	19	26.1	- 0.9	51	20	- 1	25	0	30		74	3.55	-0.94	1.02	11		8.0	6	14.2	WNW	55	NW	24					49
BOSTON	15	1011.7	1016.8	37	22	29.5	- 0.4	54	20+	4	25	0	27	18	66	3.13	-0.81	0.85	11	0	6.5	5	14.6	WNW	43	W	27	10	5	16	6.2	56
NANTUCKET	43	1016.3	1016.9	39	25	31.8	- 0.7	50	11	8	25	0	22	25	78	4.39	0.17	1.23	15	0	3.9	2	13.4	NW	42	NW	24	7	6	18	7.0	42
PITTSFIELD	1170			30	12	20.7	- 1.1	51	10	- 8	25	0	31			2.07	-0.90	0.55	9		23.4	15										
WORCESTER	986	979.3	1016.4	30	15	22.5	- 1.5	48	10	- 4	25	0	31	15	74	3.10	-0.61	0.88	13	0	11.7	12	9.9	WSW	30*	W	28+	10	6	15	6.0	
MICHIGAN																																
ALPENA	689	990.7		20	1	10.2	-10.5	37	9	-28	15	0	31			0.96	-0.99	0.37	12	0	16.8	16	6.6	SW	24	NE	12+	9	6	16	6.5	58
DETROIT	619	991.4	1019.7	22	12	17.2	- 9.7	41	9	-13	24	0	30	22	12	0.64	-1.41	0.22	11	0	7.5	6	10.5	SW	35	SW	20	6	6	19	7.3	35
DETROIT M WAYNE CO	633	994.6	1020.1	23	9	15.8	-10.2	40	9	-13	24	0	30	9	74	0.85	-1.08	0.23	12	0	9.2	7	9.1	SSW				7	6	18	7.0	
DETROIT WILLOW RUN	711	989.8	1019.8	22	10	15.7	-10.9	37	9	-13	24+	0	30	10	75	0.82	-1.12	0.26	10	0	9.2	5	11.6	SSW	35*	SW	20+	7	3	21	7.2	
ESCANABA U	594	994.2		15	1	8.2	-10.2	38	8	-25	23	0	31		69	0.66	-0.79	0.15	11	0	6.9	7	9.6	S	28	N	18	11	6	14	6.0	51
FLINT	766	990.6	1020.1	20	6	13.1	-10.5	39	9	-14	15	0	30	8	76	0.63	-1.07	0.28	10	0	9.5	6	9.6	SW	25*	SW	20+	4	9	18	7.4	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station O	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MICHIGAN	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
GRAND RAPIDS	689	992.8	1019.6	22	10	15.9	- 8.5	39	9	- 7	15	0	30	11	81	2.26	0.35	0.63	17	0	42.6	22	10.8	SSW	28	WNW	20	0	5	26	8.9	23
LANSING	852	985.4	1019.3	21	6	13.1	-11.2	40	9	-15	15	0	30	6	70	1.02	-0.94	0.40	14	0	12.2	14	13.5	SSW	41	W	20	5	8	18	7.3	47
MARQUETTE U	677	988.6		16	3	9.2	-10.3	38	8	-21	23	0	31			1.25	-0.64	0.68	13	0	16.5	17	9.2	SW	26	NW	20+	7	5	19	7.2	51
MUSKEGON	627	995.2	1019.2	22	12	17.0	- 8.0	40	9	- 3	28+	0	30	11	78	2.25	0.15	0.29	22	0	64.7	31	11.3	WNW	30	WNW	20+	1	0	30	9.5	
SAULT STE MARIE	721	992.4	1016.5	15	- 1	6.8	- 8.5	34	9+	-24	23	0	31	0	72	1.12	-0.95	0.28	18	0	15.6	17	8.4	WSW	25	WNW	9	6	7	18	7.3	45
MINNESOTA																																
DULUTH	1426	974.8	1019.0	9	- 8	.9	- 7.8	40	8	-31	23	0	31	- 8	66	0.32	-0.83	0.18	10	0	3.6	7	11.9	WNW	37	W	20	8	8	15	6.5	54
INTERNATIONAL FALLS	1179	975.0	1019.6	5	-14	- 4.8	- 7.9	37	8	-40	19	0	31	-14	62	0.22	-0.62	0.11	8	0	2.0	4	9.6	W	27*	W	23	9	8	14	6.2	
MINNEAPOLIS	822	985.4	1021.5	12	- 6	2.9	- 9.5	42	8	-32	15	0	31	- 3	71	0.46	-0.24	0.28	10	0	5.0	5	11.4	WSW	33	NW	20	6	5	20	7.1	42
ROCHESTER	1297	970.0	1021.4	12	- 4	4.0	-10.6	44	8	-30	15	0	31	- 2	75	0.82	-0.09	0.29	11	0	11.8	8	13.7	W				5	5	21	7.5	
ST CLOUD	1034	980.7		11	- 7	1.9	- 8.2	42	7	-28	22	0	31			0.43	-0.29	0.24	11	0	4.4	3						9	5	17	6.4	
MISSISSIPPI																																
JACKSON	335	1008.8	1021.5	52	30	40.5	- 7.5	78	10	5	24	0	17	33	76	5.33	0.39	1.32	12	3	T	T	8.1	N	32	SW	11	8	4	19	7.0	40
MERIDIAN	292	1007.4	1022.1	54	28	40.1	- 8.0	77	10	4	24	0	22	32	77	7.07	2.38	2.23	13	2	1.0	1	7.2	N	29*	N	23	8	5	18	6.9	
VICKSBURG	234	1009.5		51	32	41.6	- 7.4	76	10	5	24	0	14			3.70	-1.43	0.85	11	3	T	T	8.6		26	N	23+	6	6	19	6.9	51
MISSOURI																																
COLUMBIA	778	991.2	1021.2	30	11	19.9	-10.4	66	9	-10	23	0	30	11	72	0.40	-1.31	0.19	5	0	3.3	3	11.2	WSW	34	NE	11	7	4	20	7.0	48
KANSAS CITY	741	986.2	1021.2	28	11	19.8	-10.9	60	9	- 9	23	0	30	11	68	0.59	-0.82	0.26	8	0	5.9	4	7.2	N	29	NE	22	7	6	18	6.9	57
ST JOSEPH	800	985.8		26	8	16.6	-10.6	58	8	-12	23	0	31			0.41	-0.79	0.17	5	0	4.7	3	11.1		31*	N	22	6	7	18	7.0	
ST LOUIS	535	1000.1	1022.1	30	12	21.3	-10.6	62	9	-11	23	0	30	12	70	0.74	-1.24	0.33	7	0	3.6	3	13.5	WNW	30	NW	20	10	4	17	6.5	46
ST LOUIS REC	464			32	15	23.3	-10.2	66	9	-10	23	0	27			0.72	-1.44	0.32	8	0	1.8	1										
SPRINGFIELD	1269	971.6	1021.3	32	14	25.4	- 8.2	69	9	-10	24+	0	29	15	68	0.97	-1.37	0.42	5	0	2.0	2	10.1	SSE	36	N	22	10	8	13	5.7	58
MONTANA																																
BILLINGS	3567	892.7	1021.9	28	3	13.9	- 9.3	53	2	-26	19	0	28	2	61	2.43	1.69	0.44	15	0	27.7	17	15.2	WSW	50	SW	19	6	6	19	7.4	48
HAVRE	2277	744.7		19	- 8	3.4	- 6.5	50	7	-28	12	0	31			0.32	-0.16	0.18	6	0	3.2	3						4	7	20	7.4	
GREAT FALLS	3664	832.6	1025.6	28	1	10.8	- 9.8	54	3	-26	11	0	28	3	65	1.71	1.10	0.37	14	2	17.9	9	16.2	SW	44	NW	9	1	7	23	8.4	39
HAVRE	2498	736.0		20	- 7	6.7	- 7.2	54	7+	-33	11	0	30			0.64	0.15	0.34	4	0	6.8	6	13.6	SW	42	SW	19	7	3	21	7.3	47
HELENA	3893	876.1	1027.1	20	- 1	10.6	- 8.1	51	2	-28	23	0	31	1	66	0.60	0.03	0.32	12	3	9.8	6	7.4	WNW	36	NW	21	5	4	22	8.4	44
KALISPELL	2965	817.4		18	1	10.4	- 6.9	45	3+	-26	31	0	30			1.61	0.84	0.69	16	3	27.6	16	9.6					3	2	26	8.6	
MILES CITY	2629			32	4	7.5	- 8.0	55	7	-29	19	0	31			0.90	0.26	0.42	8	3	9.6	10	9.4	W	34*	WSW	19	4	10	17		
MISSOULA	3190	867.0	1028.4	37	1	8.9	-10.3	47	2+	-27	11	0	30	3	74	2.38	1.46	0.67	14	3	42.5	18	5.6	E	35	E	22	2	6	23	8.4	28
NEBRASKA																																
GRAND ISLAND	1842	954.4	1022.4	31	0	13.4	-13.7	54	8	-28	27	0	31	3	76	0.78	0.07	0.32	8	3	7.9	4	11.2	N				5	13	13	6.5	
LINCOLN	1150			34	6	15.1	-11.5	55	24	-15	23	0	30			0.44	-0.68	0.38	8	3	6.6	5	9.2	NW	31	NW	18	4	15	12	6.7	48
NORFOLK	1544			32	- 1	10.5	- 8.9	57	8	-23	27	0	31			0.69	-0.19	0.31	10	3	8.6	5						7	11	13	6.1	
NORTH PLATTE	2774	916.3	1024.4	34	1	13.1	-10.9	59	8	-23	23	0	31	5	74	0.48	0.15	0.23	6	3	8.7	5	11.6	N	40	NE	22	7	11	12	6.2	54
OMAHA	1178	948.6	1024.6	30	6	13.7	-14.6	56	8	-17	23	0	30	6	73	1.09	0.47	0.43	12	3	14.5	6	10.9	NNW	29	N	20+	5	10	16	6.8	61
NORTH PLATTE AP	2777	921.4		30	1	11.4	- 8.6	51	8	-20	27+	0	31			0.02	0.01	0.02	1	3	11.2	3						6	7	18	7.0	
SCOTTSBLUFF	3958	877.2	1027.2	34	1	14.8	-11.6	58	8	-32	19	0	31	4	65	1.14	0.86	0.41	6	3	14.7	7	13.4	WNW	44*	WNW	19	10	8	13	6.3	
VALENTINE	2587	909.6		34	- 4	10.1	- 9.9	62	8	-29	19	0	31			0.48	0.08	0.19	4	3	8.6	4	10.4		40	N	19	2	9	15	6.2	75
NEVADA																																
ELKO	5075	846.7	1024.7	32	2	17.1	- 2.6	64	21	-25	14	0	30	6	54	1.74	0.89	1.04	4	0	11.4	4	6.7	W	25*	W	9	15	8	8	4.4	
ELY	6262	796.5	1024.2	30	5	17.9	0.1	57	24+	-25	14	0	29	9	52	0.11	-0.67	0.08	1	0	T	T	4.4	W	34	SW	31	17	4	9	4.0	83
LAS VEGAS	2162	1011.2	1024.6	61	34	47.1	- 2.6	88	19	8	13	0	23	14	37	0.10	-0.41	0.10	1	0	T	T	7.4	W	31*	NW	18	21	7	3	1.4	94
RENO	4404	805.6	1024.6	46	18	32.6	- 3.7	60	1	- 6	12	1	29	14	63	0.61	1.10	1.08	4	0	1.7	1	4.1	S	3	NW	28	23	7	1	2.6	84
WINNEMUCCA	4299	831.2		40	1	20.6	- 4.6	65	21	-24	1	0	30			0.74	-0.26	0.40	4	0	4.4	4	8.1		42	W	31	14	9	8	3.9	91
NEW HAMPSHIRE																																
[illegible]	[illegible]	[illegible]	[illegible]	31	11	[illegible]	- 0.4	[illegible]	10	-13	[illegible]	0	31	13	72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NW	[illegible]	10	[illegible]	13	[illegible]	42
[illegible]	[illegible]	[illegible]		18	- 4	[illegible]	- 0.3	41	20	-24	[illegible]	0	31		82	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W	[illegible]	5	[illegible]	17	[illegible]	48
NEW [illegible]																																
[illegible]	[illegible]	[illegible]	[illegible]	31	10	[illegible]	- 3.6	55	10	3	[illegible]	[illegible]	[illegible]	24	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	8.4	WNW	33*	NW	[illegible]	[illegible]	[illegible]	10	8.6	63
[illegible]	[illegible]			32	14	23.0	- 3.6	51	20	3	[illegible]	[illegible]	24			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		40*	NW	[illegible]					

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No of days							No of days		Snow, Sleet				Fastest mile							
		Station O	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F	F.	F.	F.	F		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M p h							%
NEW JERSEY																																
NEWARK	11	1017.8	1019.1	36	23	29.6	- 2.7	51	10	4	24	0	25	19	63	2.19	-1.14	0.66	9	0	7.5	6	10.3	NNE	35	W	27+	10	6	15	6.1	
TRENTON U	56	1011.2		36	22	29.0	- 4.1	52	10	2	24	0	26			2.36	-0.74	0.97	12	0	6.6	4	8.7	S	41	W	27	11	7	13	5.7	60
NEW MEXICO																																
ALBUQUERQUE	5310	848.9	1020.4	42	17	29.4	- 5.6	67	31	- 7	20	0	30	13	53	0.29	-0.12	0.20	3	0	2.5	2	7.5	N	32	N	11	16	7	8	3.6	81
CLAYTON	4969	843.0		43	8	25.5	- 7.7	73	31	-17	12	0	31			T	-0.35	T	0	0	T	T						17	9	5	3.4	
RATON	6379	801.9		40	5	22.0	- 7.0	63	30	-31	12	0	29			0.46	0.10	0.33	5	0	4.9	3						17	7	7	3.8	
ROSWELL	3619	982.0	1018.0	51	13	31.9	- 4.5	80	31	-22	13	0	30	18	43	0.44	-0.04	0.35	4	0	4.5	4	7.9		32	NE	18	15	7	9	4.3	87
SILVER CITY	5373	835.8		50	23	36.4		68	31	2	20	0	28			0.67		0.29	4	0	2.8	2						18	2	11	3.9	
NEW YORK																																
ALBANY	277	1014.6	1018.5	28	12	20.3	- 2.4	44	10	-12	25+	0	30	13	71	2.38	-0.09	0.70	12	0	24.5	17	7.2	S	41	W	27	6	5	20	7.4	43
BINGHAMTON	1590	955.4	1017.0	26	13	19.3	- 3.5	47	10	-10	24	0	31	13	76	1.79	-0.71	0.58	13	0	19.1	12	9.7	NNW	32	W	27	4	5	22	7.9	32
BUFFALO	705	989.3	1018.9	25	13	18.9	- 4.6	45	10	-11	24	0	31	13	79	1.51	-1.33	0.38	18	0	31.5	23	13.3	WSW	47	W	24	1	6	24	8.5	29
NEW YORK U	132	1006.4	1018.2	36	24	30.1	- 3.1	51	10	4	24	0	23	27	61	1.93	-1.38	0.53	11		5.3	4	9.2	W#	35	W	23	12	6	13	5.5	58
NEW YORK LA GUARDIA	19	1017.0	1018.8	35	23	29.3	- 4.3	52	10	3	24	0	24	19	66	2.18	-1.13	0.76	11	0	6.9	6	11.9	NE	42	NW	24	9	7	15	6.1	
ROCHESTER	543	998.8	1019.0	26	12	19.3	- 5.9	46	10	-10	24	0	31	14	78	1.24	-1.16	0.53	9	0	23.7	14	11.3	WSW	45	W	20	6	4	21	7.7	37
SCHENECTADY	217			30	14	22.0	- 0.6	44	10	- 9	25	0	31			2.09	-0.48	0.55	10		21.8	22						11	13	7	5.0	
SYRACUSE	417	995.0	1018.2	28	14	20.8	- 3.2	46	20+	- 6	24	0	30	14	75	1.85	-1.30	0.56	16	0	22.2	16	12.5	W	45	W	27	5	3	23	7.9	35
NORTH CAROLINA																																
ASHEVILLE U	2203	938.6		46	23	34.4	- 5.3	67	12	- 7	24	0	24			1.73	-1.44	0.76	9	1	T	T	8.4	N	39	NW	23	11	9	11	5.1	65
CAPE HATTERAS R	7	1018.8	1019.5	51	35	42.9	- 3.7	70	12	23	24	0	13	35	77	4.05	0.15	1.40	14	3	T	T	9.6	NNE				9	8	14	6.0	50
CHARLOTTE	735	991.3	1020.4	48	27	37.3	- 6.1	69	11	7	24	0	22	25	66	2.71	-0.82	1.11	9	1	T	T	6.6	N	22	NW	27	12	3	16	5.8	54
GREENSBORO	891	987.4	1020.4	46	25	35.2	- 4.5	66	12	4	24	0	24	24	68	2.41	-0.99	0.89	11	3	T	T	6.8	SW	33	NW	23	12	4	15	5.3	56
RALEIGH	433	1005.8	1020.2	48	26	36.7	- 4.9	70	11	7	24	0	22	27	71	2.96	-0.26	1.00	12	0	0.1	T	7.8	SW	29*	NNW	23	13	6	12	5.3	58
WILMINGTON	30	1017.3	1020.4	54	33	43.0	- 4.9	76	11	17	25+	0	20	33	71	2.54	-0.31	0.74	13	1	0.0	0	9.9	N	37	NW	24	9	8	14	5.8	59
WINSTON SALEM	967	983.7	1020.2	45	27	36.0	- 4.7	66	12	4	24	0	23	21	58	2.38	-1.30	0.69	12	2	T	T	8.1	SW	29*	NW	23	13	3	15	5.3	
NORTH DAKOTA																																
BISMARCK	1647	958.0	1022.8	14	- 8	3.0	- 5.9	52	7	-31	27	0	30	- 8	56	0.32	-0.12	0.13	5	0	3.7	3	10.5	WNW	54	NW	19	12	7	12	5.5	58
DEVILS LAKE U	1471	963.7		9	- 8	.4	- 4.2	41	7	-31	22	0	31			0.07	-0.46	0.04	3	0	1.3	3	9.0	NW	30	NW	19	6	8	17	6.5	67
FARGO	900	984.5	1021.6	11	- 7	2.0	- 4.8	44	7	-27	22	0	31	- 8	64	0.13	-0.40	0.04	6	0	1.3	1	12.3	NNW	40	NW	20	4	11	16	6.7	63
WILLISTON U	1899	950.4		15	- 9	2.7	- 7.1	48	7+	-31	19	0	30			0.35	-0.20	0.12	5	0	3.5	3	12.0	SW	56	N	19	9	10	12	5.7	64
OHIO																																
AKRON	1209	980.2	1020.0	28	11	19.2	- 8.1	46	10	-21	24	0	30	13	75	1.08	-1.78	0.27	11	0	14.3	8	8.9	SW	22*	WSW	20	8	2	21	7.2	
CINCINNATI OBS	761			34	16	24.7	- 9.0	57	9	-14	24	0	27			2.03	-1.64	1.14	11	1	9.3	8	6.0	S	19	W	20					43
CINCINNATI U	553	996.8		36	19	27.3	- 7.3	61	9	-12	24	0	26			1.83	-1.61	0.99	10	1	9.0											
CLEVELAND	777	990.9	1020.0	26	10	18.0	- 9.6	44	10	-19	24	0	31	12	75	1.06	-1.61	0.31	12	0	12.4	10	10.8	SW	32	SW	20	6	3	22	7.4	40
COLUMBUS	812	989.6	1020.9	31	12	21.7	- 9.2	51	10+	-15	28+	0	28	14	70	1.39	-1.77	0.78	13	1	10.1	7	8.8	SSW	28	SW	20	8	6	17	6.9	42
COLUMBUS U	724			32	16	23.8	- 8.0	54	10	-15	24	0	27			1.50	-1.40	0.90	10	1	7.4	6										
DAYTON	997	986.4	1020.5	29	11	20.3	- 9.3	53	10	-19	24	0	30	14	73	0.96	-2.22	0.56	10	1	7.1	5	10.5	SSW	32	SW	20	6	6	19	7.0	40
MANSFIELD	1296			26	9	17.8	- 9.5	47	10	-20	24	0	31			0.91	-2.31	0.27	14	0	12.4	6						8	3	20	7.0	
SANDUSKY U	606	996.9		26	11	18.4	-10.9	49	10	-15	24+	0	29			1.31	-1.09	0.45	9	0	11.8	11	9.1		48	SW	20	11	7	13	5.8	62
TOLEDO	676	993.6	1020.3	23	7	14.9	-11.4	43	9	-17	24+	0	31	9	75	0.93	-1.42	0.29	10	0	12.4	6	9.6	WSW	34	SW	20	5	6	20	7.4	34
YOUNGSTOWN	1178	973.5	1019.7	26	11	18.3	-10.0	47	10	-18	24	0	30	12	76	1.12	-2.04	0.33	15	0	17.8	8	9.8	SW	25*	W	20+	6	4	21	7.5	
OKLAHOMA																																
OKLAHOMA CITY	1280	976.5	1022.0	41	16	28.3	- 8.2	69	8	- 3	12	0	26	15	63	0.21	-1.10	0.16	2	0	0.5	1	13.7	NNW	37	N	22	14	6	11	4.5	66
TULSA	676	996.5	1022.2	41	17	28.6	- 8.6	69	8	- 2	23	0	26	16	64	0.98	-0.73	0.85	5	0	0.6	T	11.0	S	32	N	22	12	9	10	4.9	65
OREGON																																
ASTORIA	8	1023.4	1024.1	44	30	36.9	- 3.8	54	2	15	11	0	19	31	82	4.76	-6.95	1.48	17	0	0.3	T	8.2	E	35*	SSW	1	7	6	18	7.0	
BURNS U	4151	876.4		38	12	25.3	0.5	57	21	-11	12	0	30			1.42	-0.20	0.95	8	0	11.0	9						13	7	11	5.2	
EUGENE	361	1010.8		42	27	34.4	- 4.7	54	3	11	12	0	22			2.55	-3.78	1.45	7	0	3.9	3	6.6		40*	SW	31	7	5	19	6.9	
MEACHAM	4050			30	14	21.5	- 4.5	45	31+	-23	11	0	31			2.83	-1.37	0.59	18	0	18.9	12						6	4	21	7.5	
MEDFORD	1298	975.3	1024.7	42	20	30.8	- 6.1	51	23	8	12	0	31	24	83	1.75	-1.39	1.36	6	0	1.2	1	2.5	S	21*	SSE	11	12	5	14	5.5	
PENDLETON	1482	970.5	1026.4	35	19	27.0	- 4.7	55	3	-11	11	0	27	20	74	1.40	-0.02	0.52	9	0	12.1	6	7.1	S	30*	WSW	8	8	6	17	6.6	
PORTLAND	21	1020.0	1025.4	41	29	35.0	- 3.4	55	2	11	11	0	21	27	74	2.27	-3.10	1.16	13	0	5.0	3	7.7	ESE	34	E	30	4	8	19	7.4	45

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND U	30			42	31	36.3	- 3.9	55	2	13	11	0	17			3.00	-3.34	1.50	11		6.6	5										
ROSEBURG	505	1005.1		43	26	34.5	- 5.8	60	31	7	12	0	25			1.47	-4.04	0.68	9	0	2.0	1	3.1	N#	22	SW	31	8	5	18	6.8	42
SALEM	195	1018.0	1025.2	41	26	33.7	- 5.3	53	3	12	12+	0	24	26	76	2.80	-3.90	1.22	7	0	6.6	5	7.2	S	25*	SSW	31	6	7	18	6.4	70
SEXTON SUMMIT R	3836	886.6		45	31	37.9	4.3	59	8+	12	11	0	16			3.95	-1.64	3.28	8	0	4.3	3	11.1	N				16	6	9	4.1	
PACIFIC AREA																																
CANTON ISLAND	11	1008.8	1009.1	88	77	82.8	- 0.3	89	5+	74	22	0	0	70	69	0.22	-2.39	0.16	3	0	0.0	0	14.8	NE	25*	NNE	31	18	10	3	3.9	
ENIWETOK	16	1009.5		86	78	81.8	0.6	87	29+	75	17+	0	0			0.49	-0.53	0.33	3	0	0.0	0	13.8									
TAGUAC GUAM R	361			83	70	76.4	- 1.8	86	27+	63	14+	0	0			9.33	4.70	2.41	18	1	0.0	0	6.5	E#	20	NE	30					54
JOHNSTON	7	1011.5		81	73	77.1	0.0	85	28+	71	5	0	0			0.29	-3.60	0.08	6	0	0.0	0	9.0		29	W		19	11	1	3.5	83
KOROR R	94	1005.8	1008.3	87	75	80.7	0.4	90	20+	71	21	2	0	75	88	18.63	6.90	4.52	23	3	0.0	0	6.8	NE	25	E	4	0	0	31	9.9	49
MAJURO	10	1009.1	1009.4	85	77	80.5	0.3	86	31+	72	5	0	0	73	78	17.46	0.48	3.92	19	0	0.0	0	12.1	E	27	E	19+	1	12	18	7.8	49
PONAPE R	123	1004.1	1008.4	85	74	79.5	- 1.0	88	12+	70	24	0	0	74	84	20.99	9.92	4.50	25	3	0.0	0	5.7	NE	23	NW	4	0	1	30	9.5	43
TRUK MOEN ISLAND	5	1008.8	1009.0	85	75	80.0	- 0.7	87	23+	71	25+	0	0	74	80	11.27	2.87	2.37	23	0	0.0	0	6.6	NNE	26	N	27	0	3	28	9.2	50
WAKE	11	1012.5	1013.0	84	73	78.1	0.7	86	29+	68	12	0	0	68	72	0.55	-0.59	0.21	8	0	0.0	0	8.9	NE	23*	N	30+	14	13	4	4.2	
YAP R	53	1007.5	1008.3	85	75	80.2	0.2	90	13	73	26	1	0	75	86	11.26	3.39	2.44	22	0	0.0	0	9.3	NE	34	N	29	0	4	27	9.4	57
PENNSYLVANIA																																
ALLENTOWN	376	1004.5	1019.5	33	15	24.0	- 5.0	46	10	- 9	29	0	29	17	75	3.00	-0.17	0.75	10	0	12.2	8	8.1	W	36*	WSW	27	9	6	16	6.3	
ERIE	732	992.0	1019.5	27	13	19.8	- 7.5	49	10	-15	24	0	30	14	77	1.51	-1.16	0.34	16	0	18.7	11	14.3	WSW	32*	S	9	3	5	23	8.1	
HARRISBURG	335	1005.0	1019.6	34	19	26.2	- 5.6	47	10	- 4	29	0	28	16	67	2.19	-0.57	0.54	11	0	9.1	6	7.7	NW	35	W	27	11	7	13	6.0	50
PHILADELPHIA	5	1014.4	1019.2	36	19	27.5	- 4.8	49	17+	- 5	29	0	27	20	72	2.31	-1.01	0.82	12	1	6.1	4	8.6	NW	42	NW	27	9	6	16	6.3	57
PHILADELPHIA U	35			39	25	31.9	- 3.0	54	10	3	24	0	23			2.10		0.83	10	0												
PITTSBURGH	1137	988.7	1020.5	30	12	21.1	- 7.8	51	10	-18	24	0	29	15	76	1.96	-1.01	0.56	13	0	12.7	8	8.0	WSW	28*	WSW	23	6	7	18	7.1	49
PITTSBURGH U	749			35	18	26.6	- 6.7	57	10	-13	24	0	26			1.35	-1.47	0.45	10		6.2											44
READING U	266	1006.7	1019.3	35	20	27.8	- 4.9	52	10	- 2	24	0	28			2.50	-0.57	0.74	9	0	6.1	5	8.8	W	54	W	27	9	6	16	6.1	45
SCRANTON	940	982.7	1019.0	31	16	23.2	- 3.5	48	10	- 7	29	0	28	15	70	2.06	-0.23	0.53	11	0	15.2	8	7.3	SW	29	SW	27	8	2	21	7.1	47
WILLIAMSPORT	527	999.5	1019.4	32	15	23.2	- 5.6	43	10	-12	29	0	29	14	69	2.09	-0.58	0.54	12	1	11.9	9	8.6	W	32*	WSW	27	6	6	19	7.0	
RHODE ISLAND																																
BLOCK ISLAND	110	1012.3		36	24	30.1	- 2.5	48	20	8	25+	0	24			3.39	-0.45	1.40	12	0	5.2	3						8	9	14	6.4	
PROVIDENCE	55	1011.1	1017.6	37	21	28.9	- 0.3	55	20	2	25	0	28	19	68	3.40	-0.41	1.11	12	0	5.3	4	11.0	NNW	36	WNW	28	10	7	14	6.0	60
SOUTH CAROLINA																																
CHARLESTON	41	1018.2	1020.4	56	35	45.3	- 5.0	73	11	16	25	0	12	34	69	3.14	0.60	1.23	14	1	0.0	0	8.4	NNE	42Y	W	23	9	6	16	6.4	52
CHARLESTON U	9			55	40	47.4	- 4.1	68	11	24	24	0	7			2.69	0.29	1.20	10	0	0.0	0	9.7		34	W	23					
COLUMBIA	217	1007.5	1021.0	53	29	41.3	- 5.6	76	11	14	25+	0	22	30	68	5.38	2.36	1.52	12	2	T	T	6.4	WSW	25*	WNW	23	9	7	15	6.1	67
FLORENCE	146	1008.9	1020.5	52	31	41.7	- 5.8	75	11	16	24	0	19	29	65	5.05	2.41	1.68	13	2	T	T	7.7	NE	23*	NNW	24+	10	9	12	5.8	
GNVLE SPARTANBURG	957	982.2	1020.3	50	29	39.7	- 4.3	70	12	9	24	0	22	26	62	3.93	-0.35	1.66	11	1	0.0	0	6.3	NE	30	N	24	9	6	16	6.1	57
SOUTH DAKOTA																																
HURON	1282	972.4	1023.1	17	- 7	5.0	- 8.5	61	8	-33	15	0	31	- 4	67	0.63	0.15	0.32	7	0	10.4	7	13.0	WNW	42	NW	20+	11	3	17	6.2	53
RAPID CITY	3165	901.8	1022.5	25	- 1	12.3	- 9.7	60	8+	-26	19	0	30	1	63	1.03	0.67	0.22	16	0	10.8	5	11.8	NNW	43	NW	19	12	2	17	6.3	49
SIOUX FALLS	1420	967.3	1022.5	17	- 3	6.7	- 8.5	54	8	-22	23	0	31	- 1	70	0.90	0.28	0.33	8	0	11.0	8	10.7	WNW	37*	NNW	20+	10	5	16	6.4	
TENNESSEE																																
BRISTOL	1507	964.7	1020.8	41	20	30.6	- 7.7	62	12	- 8	24	0	24	21	71	3.20	-0.49	0.85	13	1	4.1	1	4.7	W	40*	WNW	11	11	5	15	6.0	
CHATTANOOGA	670	993.4	1022.1	44	22	32.6	- 9.1	66	11	- 7	24	0	26	23	71	4.81	-0.80	1.59	11	3	0.4	T	7.2	N	31	W	27	9	4	18	6.5	48
KNOXVILLE	950	985.1	1021.8	44	23	33.4	- 7.5	68	11	- 6	24	0	24	25	73	4.20	-0.68	1.03	11	1	4.2	3	7.4	NE	39	S	11	9	7	15	6.2	41
MEMPHIS	263	1006.8	1022.2	45	24	34.4	- 7.6	74	10	0	24	0	23	25	73	1.28	-4.79	0.56	8	0	1.2	1	8.7	S	30	N	23	10	7	14	6.1	54
MEMPHIS U	271			45	27	35.8	- 6.3	73	10	0	24	0	18			1.15	-4.66	0.52	9		1.0	1										
NASHVILLE	577	1001.0	1021.7	43	19	30.9	- 9.0	65	11	-15	24	0	24	23	75	1.60	-3.89	0.85	8	2	6.8	5	7.4	S	27*	NW	23	10	4	17	6.2	52
OAK RIDGE	905	987.6		42	21	31.2	- 8.7	68	11	- 8	24	0	24			2.83	-3.11	0.67	12	0	2.6	2	3.9		26Y		11	12	5	14	5.6	
TEXAS																																
ABILENE	1759	957.0	1020.3	54	24	38.7	- 5.9	76	9	6	12	0	22	19	52	0.01	-0.87	0.01	1		0.7	1	11.8	N	34	N	22+	15	6	10	4.7	71
AMARILLO	3607	888.5	1018.9	46	11	28.9	- 7.3	78	31	- 9	12	0	31	7	47	0.06	-0.59	0.02	4	0	0.5	T	15.1	N	35	W	31+	18	11	2	3.4	81
AUSTIN	597	998.7	1021.4	55	33	43.6	- 6.8	86	10	12	24	0	15	28	61	0.59	-1.76	0.27	5	0	T	T	10.0	N	36	N	23	9	6	15	6.4	50
BROWNSVILLE	16	1017.2	1020.0	67	46	56.3	- 5.1	88	11	26	24	0	5	46	73	0.23	-1.12	0.13	4	0	0.0	0	11.8	NNW	30	NE	26	3	11	17	7.6	38
CORPUS CHRISTI	43	1019.6	1020.8	61	39	50.1	- 7.3	85	10	18	24	0	10	39	72	0.19	-1.44	0.09	5	0	T	T	12.2	NNE	42	NE	26	4	8	19	7.7	45

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: 0.1 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days sunrise to sunset: Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10	Sky cover, tenths sunrise to sunset	Possible sunshine
	Ft	Mb	Mb	F	F.	F	F	F		F.				F	%	In	In	In			In	In	M p h.		M p h.								%
TEXAS																																	
DALLAS	481	1002.8	1022.2	49	28	38.2	- 7.7	76	10	8	24	0	17	23	60	0.49	-1.83	0.35	3	0	0.7	1	12.9	N	36	N	23	13	5	13	5.0	69
DEL RIO I	957			60	34	46.8	- 5.3	85	10	16	24	0	14			T	-0.89	T	0	0	0.0	0											
EL PASO	3918	887.5	1018.0	55	27	40.5	- 3.4	75	31	10	14	0	19	18	43	0.13	-0.73	0.08	3	0	0.8	1	9.3	WSW	52	W	11	17	5	9	4.0	86
FORT WORTH	544	1000.3	1022.0	49	27	37.8	- 7.7	76	10	9	24+	0	19	24	63	0.86	-1.18	0.47	5	0	T	T	13.7	NNW	40*	N	23	13	5	13	5.0	
GALVESTON U	7			56	42	48.9	- 6.0	73	10	19	24	0	9			1.49	-1.97	0.80	8	0	T	T	13.2		37	NW	23					39
GALVESTON	5	1018.6	1021.0	55	41	47.9	- 6.5	73	10	19	24	0	10	40	76	1.54	-2.22	0.77	7	1	0.0	0	11.9	N				3	7	21	7.7	
HOUSTON U	41			57	41	49.0	- 5.6	82	10	18	24	0	10			3.83	0.11	2.39	12	0	0.0	0										
HOUSTON	50	1018.0	1020.8	58	39	48.3	- 6.3	83	10	17	24	0	13	40	76	3.09	-0.69	2.38	8	0	T	T	11.0	NNW				6	3	22	7.6	42
LAREDO	500	1004.8	1020.6	64	39	51.4	- 6.3	89	10	21	24	0	11	33	57	0.30	-0.83	0.13	6	0	0.0	0	9.2	NNW	29*	NNE	23	5	13	13	6.6	
LUBBOCK	3243	904.0		50	16	32.8	- 6.4	77	31+	-16	13	0	30			0.06	-0.62	0.05	3	0	2.3	2	15.1	WSW	38*	WSW	31	17	9	5	3.5	
MIDLAND	2854	917.1	1018.3	55	24	39.8	- 4.2	80	31+	50	12	0	24	16	46	0.01	-0.79	0.01	1	0	T	T	11.9	SW	35*	W	10	14	8	9	4.4	
PORT ARTHUR	16	1018.9	1020.6	56	36	46.4	- 6.7	78	10	16	24	0	12	39	79	6.14	1.91	3.07	13	3	T	T	10.3	N	48	N	27	5	6	20	7.6	39
SAN ANGELO	1903	951.0	1020.1	58	25	41.8	- 5.1	85	31	6	24	0	22	18	44	0.06	-0.91	0.03	3	0	T	T	9.1	SSE	25*	W	10	16	6	9	4.4	
SAN ANTONIO	792	995.5	1020.6	58	34	46.2	- 5.8	86	10	15	24	0	14	31	61	0.27	-1.47	0.17	5	1	0.0	T	9.3	N	40	N	23	12	6	13	5.6	63
VICTORIA	104	1016.1		58	37	47.5	- 7.9	83	10	17	24	0	12			0.22	-2.12	0.10	5	0	0.0	0	11.5		55Y		23	6	8	17	7.0	
WACO	500	999.9	1021.9	52	30	40.9	- 7.1	80	10	11	24	0	16	28	65	0.49	-1.78	0.24	3	1	T	T	14.4	SSE	44*	NNW	23	12	6	13	5.7	
WICHITA FALLS	994	982.7	1021.1	48	22	35.3	- 6.5	72	8	5	24	0	25	17	53	0.21	-0.91	0.18	3	0	0.2	T	9.9	N	31*	N	23+	15	5	11	4.5	
UTAH																																	
MILFORD	5028	845.9		37	9	22.7	- 1.9	54	25	-19	13	0	29			0.19	-0.38	0.15	3	0	2.2	2						16	7	8	4.1	
SALT LAKE CITY	4220	871.0	1025.8	31	8	19.5	- 8.7	53	31+	-18	12	0	29	12	72	0.53	-0.82	0.23	6	0	7.4	4	7.5	SSE	41	S	31	8	8	15	6.7	49
WENDOVER	4237	874.0		31	10	20.7	- 6.3	59	31	-10	12	0	30			0.20	-0.12	0.12	2	0	1.4	1						15	5	11	4.7	
VERMONT																																	
BURLINGTON	331	1002.0	1017.5	24	9	16.6	- 1.6	39	20+	-17	29	0	31	9	71	1.14	-0.81	0.30	12	0	12.8	10	8.8	S	27	S	29	3	6	22	8.1	31
VIRGINIA																																	
LYNCHBURG	947	993.8		43	23	33.2	- 4.4	67	12+	- 1	24	0	26			1.92	-1.37	0.71	12	2	T	T	7.5		33	SW	23	13	6	12	5.2	61
NORFOLK	26	1018.8	1020.2	44	30	37.1	- 4.1	72	11	17	25+	0	23	27	70	3.36	0.03	0.93	15	1	1.9	2	11.3	N	36	NW	23	10	8	13	5.7	54
RICHMOND	162	1013.7	1020.2	45	26	35.9	- 2.8	68	12	9	29	0	25	25	68	1.55	-1.91	0.61	11	0	1.6	1	7.4	SSW	29	NW	23	11	11	9	4.9	54
ROANOKE	1174	976.4	1020.1	44	22	32.9	- 5.2	67	12	- 4	24	0	25	19	59	1.10	-2.02	0.41	10	1	T	1	8.6	WNW	33	SW	20	13	7	11	5.1	
WASHINGTON																																	
OLYMPIA	190	1018.6	1025.6	40	26	33.0	- 5.1	53	2	5	12	0	21	27	78	3.47	-4.38	1.45	10	0	2.0	2	6.5	SW	26*	NE	18	4	7	20	7.6	
SEATTLE TACOMA	400	1010.5	1025.0	39	29	33.9	- 4.4	52	2	12	11	0	23	26	74	2.25	-3.48	0.77	9	0	3.1	1	7.5	N	23*	SSW	3+	4	6	21	7.7	
SEATTLE U	14			41	34	37.4	- 3.8	52	3+	17	11	0	14			1.91	-3.28	0.61	10		1.8	T	5.3	SSE	35	SW	2					33
SPOKANE	2356	954.3	1027.7	26	13	19.3	- 6.0	45	3+	- 7	11	0	29	10	67	0.89	-1.55	0.84	6	0	8.7	8	8.1	NE	30	SW	1	5	6	20	7.5	37
STAMPEDE PASS R	3958	882.2		28	16	21.8	- 1.7	46	5	-10	11	0	30			5.52	-6.51	1.60	15	0	26.1	45						6	4	21	7.6	
TATOOSH ISLAND	101	1021.7	1024.7	43	36	39.5	- 2.5	52	3	22	11	0	8	31	71	2.86	-7.96	2.42	10	0	T	T	18.1	ENE	66	NE	30	6	4	21	7.7	38
WALLA WALLA U	949	989.3		35	22	28.8	- 4.4	60	3+	0	11	0	25			0.93	-0.96	0.44	10	0	5.5	4	4.1	WNW	17	N	10	5	7	19	7.5	34
YAKIMA	1061	986.5	1027.1	35	15	25.2	- 2.3	56	3	- 3	11	0	30	14	67	1.42	-0.23	1.37	3	0	14.5	14	5.5	WNW	35*	NE	28	9	6	16	6.4	
WEST INDIES																																	
SAN JUAN P.R.	15	1014.2	1017.2	82	69	75.7	1.3	86	9	63	11	0	0	68	78	3.13	-1.57	0.64	24	0	0.0	0	7.6	ENE	27	NE	23	3	22	6	5.8	57
SWAN ISLAND	28	1014.2		83	75	78.8	10.5	85	30+	71	4+	0	0			1.29	-2.15	0.80	8		0.0	0						12	15	4	4.4	
WEST VIRGINIA																																	
CHARLESTON	939	984.1	1020.9	39	17	27.9	- 8.7	65	11	-12	24	0	26	19	69	1.85	-2.47	0.78	14	2	10.7	4	5.6	SW	21*	WSW	27+	10	5	16	6.1	
ELKINS	1970	947.9	1019.7	38	13	25.9		62	11	-20	29	0	29	18	72	1.66		0.33	18	0	12.5	5	6.5	S	38*	WNW	24+	9	5	17	6.4	
HUNTINGTON U	827	989.9	1021.3	38	16	27.0		66	11	-15	24	0	27	19	72	1.86	-1.98	0.80	13	1	7.9	6	6.4	S	23*	NW	23	9	6	16	6.3	
PARKERSBURG U	615			37	16	26.6	- 8.0	63	11+	-14	24	0	27			1.80	-1.54	0.69	10	1	8.4	7	6.3		27	W	27+					49
WISCONSIN																																	
GREEN BAY	682	995.3	1019.5	14	0	7.0	- 9.3	39	9	-27	23	0	31	0	71	0.68	-0.47	0.44	12	0	8.0	8	8.3	WNW	35	NW	20	6	6	19	6.9	36
LA CROSSE	652	995.0	1021.7	15	- 2	6.3	-10.2	43	8	-31	15	0	31	- 1	67	0.67	-0.52	0.42	10	0	13.3	9	9.8	S	35*	NW	20	5	6	20	7.3	
MADISON	858	982.5	1020.6	13	- 3	5.4	-12.6	36	9+	-30	15	0	31	0	75	0.76	-0.64	0.40	9	0	12.0	7	8.9	SW	31	NE	11	6	7	18	6.9	45
MILWAUKEE	672	993.6	1020.4	15	2	8.7	-11.9	38	8	-24	15	0	30	1	68	0.66	-1.17	0.39	10	0	8.1	5	12.0	W	34	W	20	9	5	17	6.6	48
WYOMING																																	
CASPER	5319	835.1	1021.5	26	2	13.7	- 9.7	51	31	-27	11	0	30	2	61	0.38	-0.18	0.10	12	0	10.6	3	15.4	SW	36*	WSW	31+	8	9	14	6.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
CHEYENNE	6126	809.0	1019.9	29	5	16.7	- 9.2	52	8	-27	11	0	30	3	59	0.51	-0.01	0.13	8	0	8.9	3	17.1	WNW	56	W	20	12	7	12	5.4	67
LANDER	5563	834.4	1023.6	20	- 6	6.9	-12.4	51	31	-37	12	0	31	- 1	72	1.13	0.67	0.81	9	0	17.8	10	4.5	W	56	SW	31	9	7	15	6.0	65
SHERIDAN	3942	885.2	1023.3	26	- 2	12.1	- 9.2	56	7	-35	19	0	30	6	71	1.31	0.67	0.25	18	0	23.9	14	8.5	NW#	54	NW	9	5	6	20	7.4	52

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic wind recording instrument.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70 F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

V Sun below horizon January 1-23, inclusive.

X Sun below horizon January 1-17, inclusive.

CLIMATOLOGICAL DATA

METRIC UNITS

ANNUAL 1963

State and Station	Elevation (ground	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile or 1.6 kilometers: Speed	Wind: Fastest mile or 1.6 kilometers: Direction	Wind: Fastest mile or 1.6 kilometers: Date	No. of days (sunrise to sunset): Clear 0.3	No. of days (sunrise to sunset): Partly cloudy, 4.7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M	Mb	Mb	C	C	C	C	C		C				C	%	Mm	Mm	Mm			Mm	Mm	M p s		M p s							%
ALABAMA																																
BIRMINGHAM	184	995.7	1021.9	9.4	- 2.2	3.4	-4.1	21.1	10	-18.9	24	0	20	- 0.6	79	186	58	76	14	3	T	T	4.2	NNW	13.9	NW	23	7	4	20	7.1	49
HUNTSVILLE	184	997.7	1021.9	7.8	- 3.9	2.0	-4.1	19.4	11	-20.0	24	0	22	- 3.3	69	91	- 41	19	11	1	66	51	4.3	SE	16.1*	NNW	23	9	5	17	6.4	
MOBILE	64	1018.4	1020.7	13.4	2.2	7.9	-3.6	32.8	10	-13.3	24	0	12	7.2	69	181	64	116	13	2	0	0	3.9	N	15.2*	NW	23	6	4	21	7.7	
MONTGOMERY	59	1013.2	1021.6	11.7	- 0.6	5.4	-3.6	23.3	11+	-15.0	24	0	20	- 1.7	64	181	78	64	13	5	T	T	4.2	NW	14.3	NW	23	5	6	20	7.5	47
ALASKA																																
ANCHORAGE	27	1014.9	1019.9	- 3.3	-10.0	- 7.1	3.8	6.1	20+	-30.0	9	B 0	31	-10.6	76	53	33	18	11	0	394	254	2.5	N	9.4*	SE	19	4	4	23	8.0	26
ANNETTE	34	1019.3	1023.4	5.0	0.6	2.7	1.4	10.0	6	- 8.3	10	0	12	- 0.6	81	207	- 82	70	19	10	81	152	2.8	N	14.8*	SSE	4	1	4	26	9.0	
BARROW	7	1026.4	1026.9	-18.3	-27.2	-22.8	4.0	1.7	29	-42.2	8+	0	31	-27.8	63	13	9	5	10	0	79	229	6.6	ENE	17.2*	ESE	31	0	1	30	9.3	
BARTER ISLAND	12	1025.7	1027.7	-18.9	-28.3	-23.7	3.4	2.2	29	-42.2	8+	0	31	-28.9	59	45	35	21	8	0	267	508	5.4	E	16.5*	W	25	10	12	9		
BETHEL	38	1013.5	1014.8	- 3.9	- 9.4	- 6.9	8.9	8.9	17	-35.6	8	0	22	-10.0	78	60	31	18	14	0	79	76	3.5	NNE	12.5*	E	17	4	4	23	7.9	
COLD BAY	29	1003.4	1007.2	3.3	- 0.6	1.2	3.5	8.9	27+	-13.3	9	0	12	- 0.6	87	125	66	47	21	0	23	25	9.5	SE	25.9*	SSE	11	1	4	26	8.8	
CORDOVA	12	1017.3	1018.9	1.7	- 6.1	- 2.3	2.6	5.6	18	-23.3	9+	0	30	- 3.9	90	207	52	6	15	0	500	330	1.7	ESE	9.4*	ESE	2	3	5	23	8.1	
FAIRBANKS	133	1005.1	1024.3	-12.8	-21.1	-16.8	7.1	1.7	20+	-45.6	8	0	31	-19.4	80	45	23	13	15	0	445	432	1.6	N	6.3*	NNW	19	3	6	22	8.3	
JUNEAU	5	1021.3	1022.3	0.6	- 5.0	- 2.4	1.4	10.0	6	-18.3	9+	0	25	- 4.4	84	166	65	49	20	1	310	152	2.8	ESE	16.5*	ESE	4	1	5	25	9.0	15
KING SALMON	13	1012.5	1014.8	0.0	- 7.8	- 3.9	6.4	11.7	27	-34.4	7	0	20	- 7.2	77	39	12	12	14	0	66	51	5.2	E	16.5*	E	21	8	4	19	7.0	
KOTZEBUE	3	1021.3	1021.7	- 9.4	-15.0	-12.1	8.9	2.8	18	-35.6	7+	0	30	-14.4	81	26	16	21	7	0	53	229	7.1	ESE	19.2*	E	21	7	0	24	7.6	
MC GRATH	102	1008.9	1022.5	-13.3	-18.3	-15.7	7.1	3.3	20	-48.9	8	0	31	-20.0	76	12	- 20	6	9	0	241	432	1.0	N	7.6*	N	21	4	6	21	7.8	
NOME	4	1018.0	1018.6	- 3.9	- 9.4	- 6.5	8.8	6.1	26	-37.8	7	0	23	-10.0	79	52	26	31	11	0	114	356	7.1	E	14.8*	E	17	7	2	22	7.6	16
ST. PAUL ISLAND	7	1004.1	1005.2	1.1	- 2.8	- 0.9	2.7	6.1	27	-15.6	5+	0	18	- 2.2	90	52	6	17	17	0	41	76	9.3	E	21.9*	E	25	0	0	31	10.0	
SHEMYA	37	999.7	999.4	2.8	0.0	1.4	1.8	4.4	22+	- 4.4	3	0	13	0.3	89	34	- 29	7	21	0	69	25	8.8	NNE	19.7*	ENE	20	0	3	28	9.2	
YAKUTAT	9	1019.7	1020.0	1.7	- 2.8	- 0.8	2.0	6.7	5	-16.7	1	0	19	- 1.7	93	310	34	59	22	0	498	254	2.8	ENE	15.6*	SE	3	3	3	25	8.6	
ARIZONA																																
FLAGSTAFF	2131	789.2	1020.7	3.9	-11.1	- 3.7	-1.6	11.7	22+	-28.9	12	0	29	-11.1	61	24	- 22	14	6	0	251	127	3.8	NE	15.6	SSW	18	20	2	9	3.5	
PHOENIX	340	978.7	1018.5	16.7	1.7	9.1	-1.3	25.0	31	- 6.7	13	0	11	- 4.4	42	14	- 5	13	3	0	0	0	2.4	E	11.2*	NW	19	20	1	10	3.6	84
PRESCOTT	1528	847.3	1019.8	9.4	- 5.6	1.9	-0.9	17.2	31	-17.2	13	0	27	- 8.9	51	6	- 20	5	2	0	T	T	3.8	S	20.1	N	19	20	4	7	3.3	81
TUCSON	788	927.5	1017.4	16.1	1.7	9.1	-0.6	25.0	31	- 6.1	13	0	11	- 2.8	50	15	- 6	9	3	0	0	0	3.8	SSE	13.0	W	19	13	8	10	4.6	83
WINSLOW	1487	853.0	1024.0	5.6	-10.0	- 2.4	-2.1	20.0	31	-25.0	13	0	28	- 9.4	65	13	- 2	8	3	0	157	102	3.3	SW	14.3*	WSW	18	15	7	9	4.0	
YUMA	61	1013.9	1019.1	19.4	4.4	11.8	-1.8	24.4	27+	- 2.2	14+	0	4	- 3.9	41	13	3	13	1	0	0	0	3.4	N	15.2	N	19	18	6	7	3.5	85
ARKANSAS																																
FORT SMITH	137	1004.5	1022.3	6.1	- 6.1	- 0.1	-4.4	20.6	9	-17.2	24	0	23	- 6.7	67	18	- 50	17	3	0	T	T	3.6	ENE	11.6	N	23	13	4	14	5.6	55
LITTLE ROCK	78	1008.3	1022.2	7.2	- 5.0	1.1	-3.7	25.0	10	-16.7	24	0	25	- 5.0	69	22	-110	9	11	0	18	T	3.6	N	13.9	NW	22	11	5	15	5.9	50
TEXARKANA	110		1021.9	8.9	- 2.8	3.0	-4.3	23.9	10	-14.4	24	0	18	- 2.2	74	38	- 85	23	12	0	5	T	3.8	NW								82
CALIFORNIA																																
BAKERSFIELD	151	1003.4	1021.6	13.9	0.6	7.2	-1.4	21.1	31	- 6.7	13	0	19	- 2.2	58	3	- 27	3	2	0	0	0	2.7	SE	12.5*	SE	12	20	2	9	3.5	
BISHOP	1252	876.1		13.3	- 8.3	2.5	-0.2	20.6	22	-16.7	13	0	29			82	57	49	3	0	0	0						22	4	5	2.3	
BLUE CANYON	1609	839.8		8.9	0.6	4.6	2.3	15.6	7	- 9.4	12+	0	14			398	101	231	4	0	188	178	4.2	ENE	30.0*	SSW	31	23	2	6	2.5	
BURBANK	213	993.0	1013.3	17.2	5.6	11.4	-0.6	25.0	7	- 1.1	14	0	1	0.0	53	12	- 68	13	2	0	0	0	2.1	S#	12.5*	NE	12	17	3	11	4.1	
EUREKA U	13	1019.0		11.1	4.4	7.8	-0.8	18.3	31	- 1.1	12	0	2			43	-127	23	5	0	0	0	2.5		17.0	SW	31	14	6	11	4.8	60
FRESNO	99	1008.4	1020.6	12.8	- 1.1	5.7	-1.8	18.3	31+	- 7.2	13	0	23	- 0.6	73	55	3	30	4	0	0	0	2.4	NW	10.7	SE	31	17	6	8	3.7	71
LONG BEACH	10	1018.3	1019.9	18.3	6.7	12.3	1.0	27.8	7	- 3.9	13	0	1	3.3	60	7	- 43	9	1	0	0	0	2.5	ENE	13.0*	ENE	12	16	5	10	4.5	
LOS ANGELES	30	1016.3	1019.9	17.8	8.3	12.9	1.0	27.2	7	- 1.1	13	0	1	3.3	60	16	- 52	16	2	0	0	0	3.0	E	11.2*	W	10	15	6	10	4.3	
LOS ANGELES U	95			17.2	8.9	13.1	-0.1	25.0	7	1.1	13	0	0			13	- 65	13	3	0	0	0	2.7	W	10.3	W	10	16	5	10	4.2	69
MT SHASTA R	1080	895.7		8.3	- 4.4	1.8	1.1	14.4	24+	-15.0	12	0	28			111	- 50	61	3		282	203						24	0	7	2.8	
OAKLAND	1	1020.3	1020.6	12.2	3.3	7.8	-1.1	17.2	5	- 1.1	14	0	8	1.7	70	68	- 29	38	3	0	0	0	3.1	SE	14.3*	SSW	31	14	10	7	4.3	
POINT ARGUELLO	112	1003.7		15.6	3.9	9.7	-0.1	25.0	7	- 3.9	14	0	10			18	- 42	13	3	0	0	0	3.2		14.3*	SE	30	15	5	11	4.5	
RED BLUFF	104	1007.8	1021.1	12.8	- 0.6	6.1	-1.4	22.2	6	- 4.4	14	0	21	- 2.8	64	89	- 20	52	4	0	T	T	3.9	WNW	25.0	SSE	31	22	2	7	2.9	78
SACRAMENTO	5	1020.3	1021.2	10.0	0.0	5.1	-2.8	16.7	31	- 5.0	13	0	21	0.6	79	120	39	63	6	0	0	0	2.1	NNW	15.2	NW	11	14	6	11	5.0	56
SACRAMENTO U	7			11.1	1.1	6.1	-2.2	16.1	31+	- 2.8	13	0	16			93	2	49	4		0	0										
SANDBERG R	1377	863.9		8.9	0.6	4.7	0.3	17.8	22	-11.7	12	0	10			2	- 63	2	2	0	0	0	6.9		19.2*	ENE	12	22	3	6	2.7	
SAN DIEGO	4	1015.9	1019.2	17.8	7.8	12.8	-0.2	27.2	7	- 0.6	13	0	1	4.4	60	3	- 48	2	3	0	0	0	2.4	ENE	7.6	NW	13	12	7	12	5.0	67
SAN FRANCISCO	2	1020.3	1020.9	12.2	3.3	7.6	-1.7	17.8	31	- 1.7	13	0	7	2.8	73	114	12	54	4	0	0	0	3.5	SSE	26.8	SSE	30	13	10	8	4.3	
SAN FRANCISCO U	16			12.8	7.2	10.2	-0.2	18.9	8+	5.0	21+	0	0			85	- 30	50	3	0	0	0	2.6		17.0	SE	30					55
SANTA MARIA	73	1011.2	1020.0	16.7	2.8	9.6	-0.5	24.4	7	- 5.0	13	0	12	2.8	67	26	- 46	21	4	0	0	0	2.3	WNW	10.3*	SE	30	17	6	8	3.8	
COLORADO																																
ALAMOSA	2297	767.6		0.6	-22.2	-10.8	-2.7	12.2	30	-40.6	13	0	30			11	4	7	4	0	107	76						18	10	3	3.4	
COLORADO SPRINGS	1882	808.1	1020.9	2.2	-13.3	- 5.6	-3.7	18.9	31	-29.4	12	0	31	-16.7	46	13	6	8	9	0	147	51	4.6	NNE	15.6*	N	26+	13	9	9	4.8	
DENVER	1610	834.9	1020.2	0.6	-15.0	- 7.2	-6.1	18.3	31	-31.7	12+	0	31	-15.6	57	18	4	7	9	0	231	76	5.1	S	17.0	NW	8	10	11	10	5.5	76
GRAND JUNCTION	1478	862.9	1027.8	- 5.0	-16.7	-11.1	-7.7	8.3	31	-30.6	13	0	30	-15.6	73	25	9	10	8	0	450	305	1.4	ENE	9.4	NE	19	11	7	13	5.6	56

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: 25 mm. or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
COLORADO	M.	Mb.	Mb.	C.	C.	C.	C	C.		C.				C.	%	Mm	Mm.	Mm.			Mm	Mm	M.p.s.		M.p.s							%
PUEBLO	1414	855.3	1021.5	2.2	-16.1	- 7.1	-5.9	19.4	8	-32.2	12	0	30	-15.6	57	8	1	5	5	0	178	102	3.5	SE	19.2	NW	4	17	6	8	4.1	80
CONNECTICUT																																
BRIDGEPORT	2	1018.3	1019.2	1.1	- 6.1	- 2.4	-1.4	10.6	10	-16.1	25+	0	28	- 7.2	70	59	- 34	23	9	0	211	178	6.0	NE	20.6*	NNW	23	11	5	15	5.7	
HARTFORD	52	1011.6	1018.6	0.0	- 9.4	- 4.7	-1.7	6.7	10	-23.3	29	0	31	- 8.9	73	74	- 17	25	9	0	196	178	3.7	N	17.0	NW	27	9	6	16	6.5	59
NEW HAVEN	2	1017.9		1.7	- 6.7	- 2.5	-1.2	9.4	10	-16.1	25	0	30			72	- 28	26	11	0	165	127	3.7		14.8	NW	24	12	5	14	5.7	63
DELAWARE																																
WILMINGTON	24	1016.3	1019.7	2.2	- 6.7	- 2.0	-2.8	9.4	10	-17.2	29	0	27	- 6.7	72	52	- 34	17	10	0	132	102	4.2	WNW	20.1*	NW	23+	9	6	16	6.1	
DIST. OF COLUMBIA																																
WASHINGTON	22			5.6	- 3.3	1.2	-1.3	15.6	20	-15.0	24	0	23			47	- 30	13	10	1	53	127	3.4	S	17.4	WNW	27	12	6	13	5.4	58
WASH. NATL. AP	4	1 015.3	1020.0	3.9	- 4.4	- 0.3	-3.1	15.0	20	-16.1	24	0	27	- 7.2	62	50	- 37	13	10														
FLORIDA																																
APALACHICOLA	4	1018.3		14.4	5.6	10.2	-2.7	22.2	12	- 7.2	24	0	4			40	- 40	10	11	4	0	0	2.8		15.2	NW	23	5	8	18	7.2	56
DAYTONA BEACH	9	1018.6	1020.6	24.0	8.3	14.1	-1.0	28.9	30	0.0	25+	0	2	10.3	79	74	- 24	24	10	2	0	0	3.9	NW	10.3*	SSW	20	7	9	15	6.3	
FORT MYERS	4	1018.3		28.9	11.1	17.2	-0.2	28.9	19	4.4	25+	0	0			21	- 18	7	7		0	0	4.4		10.3*	S		12	12	7	5.0	
JACKSONVILLE	7	1019.7	1021.1	17.8	7.2	11.8	-1.5	27.2	20+	- 4.4	24	0	8	6.1	74	137	- 75	77	8	1	0	0	3.6	NW	15.6	NW	23	6	9	16	6.8	59
KEY WEST	2	1017.7	1019.3	24.9	18.3	21.1	0.2	28.3	13	13.9	0	0	0	16.7	77	23	- 15	13	6	0	0	0	5.0	ENE	14.8	N	21	12	10	9	5.0	78
LAKELAND	55			27.1	9.4	15.2	-1.3	28.3	20	1.1	25	0	0			56	- 4	15	9	1	0	0	3.6					9	10	12	5.5	60
MIAMI BEACH	3			24.9	17.8	20.7	0.1	26.7	27	8.3	9	0	0			15	- 28	6	7	0	0	0	5.9		11.6	NW	7	8	13	10	5.3	56
MIAMI	2	1018.0	1019.3	25.4	17.0	21.0	0.1	29.4	27	6.7	9	0	0	15.0	75	17	- 35	6	7	1	0	0	3.5	NNW	10.3*	ENE	29+	7	13	11	5.9	
ORLANDO	32	1 015.6	1020.2	27.7	8.7	18.2	-0.5	30.6	20	1.1	25	0	0	9.4	74	81	30	41	5	1	0	0	4.1	N	10.7*	WSW	21	10	9	12	5.8	
PENSACOLA	4			13.9	3.9	9.0	-3.3	21.1	11	-12.2	24	0	9			185	76	70	13	2	0	0	4.5	N	12.5	NW	23					40
TALLAHASSEE	18	1018.3	1021.2	15.6	3.3	9.4	-2.6	26.1	13	- 8.2	25+	0	12	4.4	72	136	48	71	10	2	0	0	4.3	N	20.6*	SW	20	4	6	21	7.8	
TAMPA	6	1018.3	1020.6	20.6	4.9	14.8	-1.4	26.1	14	1.7	25	0	0	9.4	76	57	3	20	8	1	0	0	5.5	NE	13.0*	WSW	21+	7	11	13	6.1	60
WEST PALM BEACH	5	1018.6	1019.7	24.9	13.9	18.6	-0.6	28.9	27	4.4	9	0	0	14.4	77	27	- 36	10	5	0	0	0	4.5	NNW	9.4*	E	29+	3	14	10	6.5	
GEORGIA																																
ATHENS	245	991.3	1021.3	9.4	- 2.2	3.6	-3.4	21.0	12	-15.6	24	0	23	- 2.2	69	159	26	43	9	2	0	0	3.6	WNW	12.1*	NW	23	9	7	15	6.3	
ATLANTA	306	977.6	1021.0	9.3	- 2.8	2.9	-4.2	18.7	12	-19.4	24	0	21	- 4.9	66	130	17	42	11	1	T	T	3.7	WNW	10.3*	WNW	27+	6	6	19	7.1	47
AUGUSTA	44	1013.7	1020.8	13.2	- 1.1	5.7	-3.0	22.8	11	-11.7	25+	0	22	3.0	72	133	57	49	12	2	T	T	2.6	NW	11.6*	WNW	21	8	7	16	6.5	
COLUMBUS	117	1004.4		12.3	- 1.1	5.6	-2.2	21.7	12	-16.1	24	0	20			158	55	61	13	4	T	T	3.8		12.1*	NW	27+	6	5	19	7.2	
MACON	139	1007.6	1021.0	12.3	0.6	6.1	-3.4	21.7	12	-14.4	24	0	21	0.6	67	176	90	78	12	4	T	T	3.4	NW	14.5	NNW	20	6	8	17	6.7	50
ROME	194	997.9		8.9	- 5.1	1.7	-3.9	18.9	11	-20.6	24	0	23			151	11	56	12	1	T	T						9	3	19	6.6	
SAVANNAH	15	1018.6	1021.3	13.1	2.2	8.1	-2.7	24.4	11	- 7.2	25+	0	12	2.8	72	84	14	35	13	2	0	0	3.9	NE	17.9	NW	23	9	4	18	6.7	51
THOMASVILLE	86			14.4	3.9	9.1	-2.9	23.3	11	-10.6	24	0	9			134	43	54	12	3								5	6	2	7.6	
HAWAII																																
HILO	9	1009.8		28.0	18.7	23.2	0.2	31.1	16	13.9	19	0	0			24	-271	13	14		0	0	3.6		18.6*	W	15	11	11	9	6.0	55
HONOLULU	3	1011.4	1011.8	29.3	17.8	23.6	-0.5	32.2	28+	16.3	14	0	0	17.2	77	26.9	173	171	14	2	0	0	4.7	[illegible]	24.1	E	7	9	7	15	6.3	54
KAHULUI	13	1 08.7	1 11.7	28.7	18.7	23.7		32.8	30+	12.2	1	0	0	17.2	76	18.9		46	15	2	0	0	7.5	[illegible]	[illegible]	W	16	11	10	9	6.2	63
LIHUE	46	1005.7		26.1	17.2	21.8	0.1	28.3	24+	13.9	17	0	0			313	173	112	18		0		4.9		16.1	W	21+	4	6	19	5.7	57
IDAHO																																
BOISE	865	920.2	1 06.9	2.2	- 2.4	- 0.1	-2.2	7.8	1	-21.7	12	0	26	-11.7	84	29	- 5	12	8	0	157	178	6.3	E	15.2	N	10	7	6	18	6.9	54
IDAHO FALLS [illegible]NW	1463			- 4.4	-20.6	-12.8	-8.6	7.8	4	-41.7	12	0	31			20	6	14	5	0			1.2	N	14.5	SW	21					
IDAHO FALLS [illegible]	1506	849.2		- 4.4	-18.9	11.6	-8.7	7.8	4	-37.2	12	0	31			29	8	17	6	0	147	76	5.2	NNE	13.0A	W	21					
LEWISTON	431	[illegible]		2.6	- 3.2	- 0.3	-3.6	16.6	2	-13.9	11	0	14			2	- 4	8	9	0	[illegible]	[illegible]	[illegible]		[illegible]			3	4	[illegible]	8.2	
POCATELLO	1463	[illegible]	[illegible]	- 1.7	-13.5	[illegible]	[illegible]	[illegible]	31	-30.5	12	0	22	-10.2	72	38	[illegible]	10	10	0	[illegible]	[illegible]	4.0	SW	[illegible]			6	[illegible]	[illegible]	7.4	41
ILLINOIS																																
CAIRO	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	26			20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.6	60
CHICAGO [illegible]	[illegible]	[illegible]	[illegible]	- 1.1	-10.6	-11.4		[illegible]	8	-32.2	[illegible]	[illegible]	30	-16.1	67	21	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	W	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.2	
CHICAGO MIDWAY	186	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30	-15.6	69	26	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.7	29
MOLINE	177	[illegible]	[illegible]	- 1.0	-17.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30	-16.7	67	23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
PEORIA	[illegible]	[illegible]	[illegible]	- 0.1	-15.6	-11.7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	31	-15.0	71	14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ROCKFORD	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30	-15.6	75	15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
SPRINGFIELD	[illegible]	[illegible]	[illegible]	- 1.7	-14.4	[illegible]	[illegible]	11.7	[illegible]	[illegible]	[illegible]	[illegible]	31	-13.3	69	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	41
INDIANA																																
EVANSVILLE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	27	- 6.4	69	20	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	NW	[illegible]	NW	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and station	Elevation ground	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No of days: Max 32.2 °C or above	Temperature: No of days: Min 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: No of days: Greatest in 24 hours	Precipitation: No of days: 25 mm or more	Precipitation: No of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Fastest mile (1.6 kilometers): Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days sunrise to sunset: Clear 0-3	No. of days sunrise to sunset: Partly cloudy 4-7	No. of days sunrise to sunset: Cloudy 8-10	Sky cover tenths sunrise to sunset	Possible sunshine
	M	Mb	Mb	C	C	C	C	C		C				C	%	Mm	Mm	Mm			Mm	Mm	M p s		M p s							
INDIANA																																
FORT WAYNE	241	980.6	1020.7	- 4.4	-13.4	- 8.9	-5.9	10.0	10	-27.8	31+	0	31	-12.2	76	54	- 44	9	1	0	254	178	4.3	W	16.5	W	20	4	6	19	7.3	32
INDIANAPOLIS	240	980.5	1019.1	- 3.1	-11.7	- 7.4	-5.3	12.2	10	-27.8	28	0	30	-11.1	73	29	- 48	11	1	1	152	152	5.1	WSW	14.8*	NW	23	7	7	17	6.3	34
SOUTH BEND	234	991.2	1020.1	- 6.1	-14.4	-10.4	-6.8	8.9	9	-27.2	23	0	30	-13.9	74	33	- 23	9	1	0	417	381	4.1	SW	11.2*	W	10+	4	3	24	8.2	
IOWA																																
BURLINGTON	210	994.4	1022.3	- 6.1	-15.5	-10.5	-6.4	10.0	5	-32.8	23	0	31	-14.4	74	35	- 17	7	1	1	366	254	4.2	WSW	16.1	NW	20	5	6	19	7.2	47
DES MOINES	289	989.6	1023.0	- 4.2	-17.2	-13.1	-7.1	11.1	4	-36.0	24	0	31	-16.7	75	21	- 12	4	1	0	406	330	4.1	WNW	16.5	NW	20	5	5	20	7.5	40
DUBUQUE	325	994.4		- 4.4	-18.6	-13.4	-6.7	5.0	5	-31.1	23	0	31			27	- 19	13	1	0	300	229			13.9*	WSW	23+	6	5	19	7.1	
SIOUX CITY	334	979.1	1023.3	- 6.7	-18.3	-12.7	-5.7	15.0	8	-27.8	27	0	31	-17.8	70	23	- 3	10	1	0	345	229	4.6	NNW	20.4	N	20	5	5	17	7.0	50
WATERLOO	265	988.4	1022.2	- 8.9	-18.6	-13.9	-6.4	8.9	8	-33.3	15	0	31	-17.2	76	12	- 17	7	1	0	173	127	4.6	NW	20.6*	WNW	20	5	4	19	7.3	
KANSAS																																
CONCORDIA	468	971.3	1020.6	- 2.9	-13.9	- 8.4	-6.2	15.6	9	-25.0	27	0	30	-12.8	75	14	- 3	6	1	0	211	102	5.5	N	17.9*	NW	12	10	8	13	5.8	54
DODGE CITY	791	929.2	1021.9	1.7	-12.8	- 5.4	-4.9	19.4	8	-24.4	12	0	31	-12.2	63	14	-	11	8	2	10	T	5.1	NNE	17.9	NE	22	13	6	12	4.9	77
GOODLAND	1111	888.1	1021.7	- 0.6	-15.0	- 7.9	-5.3	16.1	8	-28.3	12	0	31	-13.9	68	13	3	5	8	0	249	76	5.9	WSW	16.5*	NNW	11	13	6	12	5.2	
TOPEKA	267	984.9	1022.9	- 2.2	-13.3	- 7.8	-6.0	18.3	8	-22.8	23	0	31	-11.7	73	14	- 12	9	5	0	140	76	5.5	N	15.6	N	22	6	7	18	6.9	46
WICHITA	403	970.7	1021.6	0.6	-11.1	- 5.4	-5.4	16.7	8	-21.7	12	0	29	-11.1	67	31	1	24	4	0	94	76	5.8	NNE	21.0	N	22	11	9	14	5.5	60
KENTUCKY																																
COVINGTON	265	987.2	1020.7	0.6	-11.1	- 5.4	-5.8	13.3	9	-28.3	24	0	29	-10.0	72	52	- 32	28	11	1	244	178	3.1	SSW	9.4*	NNW	23	9	4	18	6.7	
LEXINGTON	298	984.3	1021.5	2.8	- 8.3	- 3.0	-4.4	15.6	11	-29.4	24	0	26	- 6.7	77	37	- 88	17	9	2	173	127	3.9	SSW	10.3*	WNW	11	9	8	14	5.9	
LOUISVILLE	144	1001.5	1021.5	2.8	- 8.9	- 3.3	-4.7	17.2	9	-28.9	24	0	28	- 8.9	67	30	- 74	11	11	1	152	127	3.4	W	11.2	S	9	9	5	17	6.5	50
LOUISIANA																																
ALEXANDRIA	28	1017.2	1022.1	12.2	- 0.6	5.6		25.0	10	-11.7	24	0	16	1.1	76	105		24	12	3	T	T	2.9	NNE				5	8	18	7.2	
BATON ROUGE	20	1018.0	1021.3	14.4	2.2	8.4	-2.9	25.6	10	-11.1	24	0	13	2.8	73	92	- 29	34	8	3	T	T	4.2	NNW				3	8	20	7.6	
LAKE CHARLES	4	1019.6	1021.2	12.8	2.8	7.7	-4.1	22.8	11+	- 8.3	24	0	12	4.4	80	129	16	43	8	5	T	T	4.5	N	13.0*	N	23	3	7	21	7.9	
NEW ORLEANS	1	1018.7	1021.0	13.9	3.3	8.6	-3.7	25.6	30	-10.0	24	0	9	5.0	80	132	35	91	9	2	T	T	4.0	ENE	12.5*	N	23	4	7	20	7.8	
NEW ORLEANS AUDUBON	2	1013.8		15.0	5.0	10.1		25.6	30	- 8.3	24	0	10			117		57	9	1	0	0	2.5		11.2	NW	23	5	4	22	7.7	34
SHREVEPORT	77	1012.6	1022.2	10.0	- 1.7	4.2	-4.4	25.6	10	-12.8	24	0	17	- 1.7	71	37	- 85	13	11	0	T	T	4.3	SE				10	4	17	6.3	44
MAINE																																
CARIBOU	190	990.9	1015.3	- 5.6	-15.0	-10.3	1.6	3.9	1	-31.7	26	0	31	-12.8	79	61	7	20	13	0	780	813	5.0	WSW	16.5*	W	28+	5	7	19	7.5	
PORTLAND	19	1012.4	1016.5	0.0	- 9.4	- 4.7	1.0	7.8	10	-21.7	29	0	31	- 8.9	74	69	- 42	26	8	0	467	356	4.1	N	14.8	W	27	8	3	20	6.9	46
MARYLAND																																
BALTIMORE	45	1015.8	1019.9	3.3	- 6.7	- 1.8	-3.3	13.9	10	-21.7	29	0	27	- 7.8	72	47	- 40	12	10	1	94	76	3.6	WNW	17.9	NW	24	14	4	13	5.3	53
BALTIMORE U	4			3.9	- 3.9	- 0.2	-3.1	12.8	10	-15.6	24	0	25			45	- 42	13	9														
FREDERICK	90			1.7	- 8.9	- 3.6	-4.1	10.0	10	-23.3	29	0	29																				
MASSACHUSETTS																																
BLUE HILL OBS R	192	991.7	1016.0	1.1	- 7.2	- 3.3	-0.5	10.6	20	-18.3	25	0	30		74	90	- 24	26	11		203	152	6.3	WNW	24.6	NW	24					49
BOSTON	5	1011.7	1016.8	2.8	- 5.6	- 1.4	-0.2	12.2	20+	-15.6	25	0	27	- 7.8	66	80	- 21	22	11	0	165	127	6.5	WNW	19.2	W	27	10	5	16	6.2	56
NANTUCKET	13	1016.3	1016.9	3.9	- 3.9	- 0.1	-0.4	10.0	11	-13.3	25	0	22	- 3.9	78	112	4	31	15	0	99	51	6.0	NW	18.8	NW	24	7	6	18	7.0	42
PITTSFIELD	357			- 1.1	-11.1	- 6.3	-0.6	10.6	10	-22.2	25	0	31			53	- 23	14	9		594	381										
WORCESTER	301	979.3	1016.4	- 1.1	- 9.4	- 5.3	-0.8	8.9	10	-20.0	25	0	31	- 9.4	74	79	- 15	22	13	0	297	305	4.4	WSW	13.4*	W	28+	10	6	15	6.0	
MICHIGAN																																
ALPENA	210	990.7		- 6.7	-17.2	-12.1	-5.8	2.8	9	-33.3	15	0	31			24	- 25	9	12	0	427	406	3.0	SW*	10.7	NE	12+	9	6	16	6.5	58
DETROIT	189	991.4	1019.7	- 5.6	-11.1	- 8.2	-5.4	5.0	9	-25.0	24	0	30	- 5.6	12	16	- 36	6	11	0	191	152	4.7	SW	15.6	SW	20	6	6	19	7.3	35
DETROIT M WAYNE CO	193	994.6	1020.1	- 5.0	-12.8	- 9.0	-5.7	4.4	9	-25.0	24	0	30	-12.8	74	22	- 27	6	12	0	234	178	4.1	SSW				7	6	18	7.0	
DETROIT WILLOW RUN	217	989.8	1019.8	- 5.6	-12.2	- 9.1	-6.1	2.8	9	-25.0	24+	0	30	-12.2	75	21	- 28	7	10	0	234	127	5.2	SSW	15.6*	SW	20+	7	3	21	7.2	
ESCANABA U	181	994.2		- 9.4	-17.2	-13.2	-5.7	3.3	8	-31.7	23	0	31		69	17	- 20	4	11	0	175	178	4.3	S	12.5	N	18	11	6	14	6.0	51
FLINT	233	990.6	1020.1	- 6.7	-14.4	-10.5	-5.8	3.9	9	-25.6	15	0	30	-13.3	76	16	- 27	7	10	0	241	152	4.3	SW	11.2*	SW	20+	4	9	18	7.4	
GRAND RAPIDS	210	992.8	1019.6	- 5.6	-12.2	- 8.9	-4.7	3.9	9	-21.7	15	0	30	-11.7	81	57	9	16	17	0	1082	559	4.8	SSW	12.5	WNW	20	0	5	26	8.9	23
LANSING	260	985.4	1019.3	- 6.1	-14.4	-10.5	-6.2	4.4	9	-26.1	15	0	30	-14.4	70	26	- 24	10	14	0	310	356	6.0	SSW	18.3	W	20	5	8	18	7.3	47
MARQUETTE U	206	988.6		- 8.9	-16.1	-12.7	-5.7	3.3	8	-29.4	23	0	31			32	- 16	17	13	0	419	432	4.1	SW*	11.6	NW	20+	7	5	19	7.2	51
MUSKEGON	191	995.2	1019.2	- 5.6	-11.1	- 8.3	-4.4	4.4	9	-19.4	28+	0	30	-11.7	78	57	4	7	22	0	1643	787	5.1	WNW	13.4*	WNW	20+	1	0	30	9.5	
SAULT STE MARIE	220	992.4	1016.5	- 9.4	-18.3	-14.0	-4.7	1.1	9+	-31.1	23	0	31	-17.8	72	28	- 24	7	18	0	396	432	3.8	WSW	11.2*	WNW	9	6	7	18	7.3	45
MINNESOTA																																
DULUTH	435	974.8	1019.0	-12.8	-22.2	-17.3	-4.3	4.4	8	-35.0	23	0	31	-22.2	66	8	- 21	5	10	0	91	178	5.3	WNW	16.5	W	20	8	8	15	6.5	54
INTERNATIONAL FALLS	359	975.0	1019.5	-15.0	-25.6	-20.4	-4.4	2.8	8	-40.0	19	0	31	-25.6	62	6	- 16	3	8	0	51	102	4.3	W	12.1*	W	23	9	8	14	6.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	No. of days: Date	No. of days: Max. 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .25 mm. or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MINNESOTA	M.	Mb	Mb	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm	Mm	M.p.s.		M.p.s.							%
MINNEAPOLIS	251	985.4	1021.5	-11.1	-21.1	-16.2	-5.3	5.6	8	-35.6	15	0	31	-19.4	71	12	- 6	7	10	0	127	127	5.1	WSW	14.8	NW	20	6	5	20	7.1	42
ROCHESTER	395	970.0	1021.4	-11.1	-20.0	-15.6	-5.9	6.7	8	-34.4	15	0	31	-18.9	75	21	- 2	7	11	0	300	203	6.1	W				5	5	21	7.5	
ST CLOUD	315	980.7		-11.7	-21.7	-16.7	-4.6	5.6	7	-33.3	22	0	31			11	- 7	6	11	0	112	76						9	5	17	6.4	
MISSISSIPPI																																
JACKSON	93	1008.8	1021.5	11.1	- 1.1	4.7	-4.2	25.6	10	-15.0	24	0	17	0.6	76	135	10	34	12	3	T	T	3.6	N	14.3	SW	11	8	4	19	7.0	40
MERIDIAN	89	1007.4	1022.1	11.1	- 2.2	4.5	-4.4	25.0	10	-15.6	24	0	22	0.0	77	180	60	57	13	2	25	25	3.2	N	13.0*	N	23	8	5	18	6.9	
VICKSBURG 11	71	1009.5		10.6	0.0	5.3	-4.1	24.4	10	-15.0	24	0	14			94	- 36	22	11	3	T	T	3.8		12.5	N	23+	6	6	19	6.9	51
MISSOURI																																
COLUMBIA	237	991.2	1021.2	- 1.7	-11.7	- 6.7	-5.8	18.9	9	-23.3	23	0	30	-11.7	72	10	- 33	5	5	0	94	76	5.0	WSW	15.2	NE	11	7	4	20	7.0	48
KANSAS CITY	226	985.3	1022.3	- 2.2	-11.7	- 6.8	-6.1	15.6	9	-22.8	23	0	30	-11.7	68	15	- 21	7	8	0	150	102	3.2	N	13.0	NE	22	7	6	18	6.9	57
ST JOSEPH	247	985.8		- 3.9	-13.3	- 8.6	-5.9	14.4	8	-24.4	23	0	31			10	- 20	4	5	0	119	76	5.0		13.9*	N	22	6	7	18	7.0	
ST LOUIS	163	1000.1	1022.1	- 1.1	-11.1	5.0	-5.9	16.7	9	-23.9	23	0	30	-11.1	70	19	- 31	8	7	0	89	76	4.7	WNW	13.4	NW	20	10	4	17	6.5	46
ST LOUIS RPO	142			0.0	- 9.4	- 4.8	-5.7	18.9	9	-22.3	23	0	27			18	- 37	8	8	0	46	25										
SPRINGFIELD	386	971.6	1021.3	2.8	-10.0	- 3.7	-4.6	20.6	9	-23.3	24+	0	29	- 9.4	68	15	- 35	11	5	0	51	51	4.5	SSE	16.1	N	22	10	8	13	5.7	58
MONTANA																																
BILLINGS	1087	892.7	1022.9	- 1.4	-16.1	-10.1	-5.2	11.7	2	-32.2	19	0	28	-16.7	61	57	43	11	18	0	704	432	6.8	WSW	22.4	SW	19	6	6	19	7.4	48
GLASGOW	606	944.7		- 9.4	-22.2	-15.9	-3.6	10.0	7	-33.3	10	0	31			8	- 4	5	6	0	81	76						4	7	20	7.4	
GREAT FALLS	1116	890.4	1022.6	- 1.0	-17.2	-10.7	-5.4	12.2	3	-32.2	11	0	28	-16.1	65	43	28	9	16	0	450	229	7.2	SW	19.7	NW	9	1	7	23	8.4	29
HAVRE	787	930.0		- 6.1	-21.7	-14.1	-4.0	12.2	7+	-36.1	11	0	30			14	1	6	9	0	173	127	4.7	SW	18.8	SW	19	7	3	21	7.3	47
HELENA	1187	876.1	1022.1	- 5.6	-16.9	-11.2	-4.8	10.6	2	-33.3	22	0	31	-17.2	65	13	1	3	12	0	249	152	4.3	WNW	16.1	NW	21	2	4	25	8.4	42
KALISPELL	904	917.6		- 6.7	-17.3	-12.1	-3.8	7.2	3+	-32.2	3	1	30			41	6	15	14	0	491	406	2.5					3	2	26	8.6	
MILES CITY	801			- 7.2	-20.0	-13.6	-5.0	10.3	2	-33.9	12	0	31			20	9	6	8	0	244	254	4.2	W	15.2*	WSW	19	4	10	17		
MISSOULA	978	907.	1.8.4	- 4.3	-17.2	-12.9	-5.7	8.3	2+	-32.8	11	0	30	-16.1	74	60	37	17	16	0	1.30	457	2.5	SE	15.6	E	22	2	6	23	8.4	26
NEBRASKA																																
GRAND ISLAND	561	954.4	1022.4	- 5.1	-17.4	-11.0	-7.4	12.2	8	-33.3	27	0	31	-16.1	76	18	2	8	8		201	102	5.0	N				5	13	13	6.5	
IN[illegible]	351			4.4	-14.4	- 5.4	-5.6	12.8	24	-28.1	13	0	30			16	- 7	7	9	0	145	76	4.1	NW	17.9	NW	18	4	15	12	6.7	48
NORFOLK	471	963.[illegible]		- 5.6	-18.2	-11.9	-4.6	14.9	8	-30.6	27	0	31			15	- 5	5	14	6	218	104						7	11	13	6.1	
NORTH PLATTE	847	914.7	1022.2	- 3.3	-17.2	-10.3	-5.1	15.0	8	-32.6	23	0	31	-15.0	74	10	1	6	6	0	221	127	5.2	N	17.3	NE	22	7	11	13	6.2	64
OMAHA	298	98.5	1023.5	- 5.1	-15.0	-10.0	-4.4	12.8	8	-27.2	23	0	30	-14.4	73	28	7	11	11	1	368	203	4.5	NNW	13.0	N	22+	5	10	16	6.6	55
OMAHA N. OMAHA AP	403	971.4		- 6.7	-16.1	-11.0	-4.7	13.6	8	-28.0	27+	0	31			23	-	9	1		284	226						6	7	18	7.0	
SCOTTSBLUFF	1204	872.1	1022.3	- 1.7	-17.2	- 9.6	-5.5	14.4	8	-35.6	19	0	31	-15.5	65	24	20	12	9	3	323	178	6.2	WNW	19.7*	WNW	19	10	8	13	6.0	
VALENTINE	780	[illegible]		- 4.4	-[illegible]	-12.2	-5.5	16.7	8	-33.9	19	0	31			12	2	5	9	0	150	152	4.8		17.9	N	19	7	9	15	6.2	75
NEVADA																																
ELKO	1547	845.[illegible]	1018.7	- 1.3	-16.1	- 8.1	-4.9	11.7	27	-32.2	12	0	30	-14.4	64	44	15	5	9		292	[illegible]	2.6	W	11.3*	W	9	15	9	7	4.4	
ELY	1907	807.[illegible]	1020.1	-[illegible]	-15.0	- 8.1	-3.1	13.[illegible]	14	-31.7	1	0	29	-13.0	70	7	- 13	3	4		T	T	4.4	E	16.[illegible]	[illegible]	21	17	[illegible]	[illegible]	6.9	75
LAS VEGAS	664	946.1	1018.[illegible]	11.7	- 1.7	5.1	-1.4	2[illegible].1	19	-13.3	13	0	24	-13.0	27	7	- 17	3	1		8	8	3.3	W	17.4*	NNW	18	22	1	7	2.9	81
RENO	1344	849.[illegible]	1019.[illegible]	6.[illegible]	-[illegible].1	[illegible].1	-1.4	19.6	7	-[illegible].6	1[illegible]	1	29	-13.0	63	64	34	12	7	2	43	25	1.4	SE	14.[illegible]	NW	28	20	1	9	2.5	83
WINNEMUCCA	1312	871.7		1.[illegible]	-16.1	[illegible].1	-1.8	12.[illegible]	21	-30.1	12	0	30			25	- 7	17	4	1	112	114	2.6	E	12.9	W	31	16	[illegible]	[illegible]	3.[illegible]	81
NEW HAMPSHIRE																																
[illegible]	[illegible]	[illegible].7	1019.[illegible]	- 1.[illegible]	-11.7	- 6.2	-[illegible]	11.[illegible]	10	-26.[illegible]	29	0	31	-11.[illegible]	74	62	- 10	26	7	0	[illegible]	241	3.[illegible]	NW	17.[illegible]	NW	28	12	3	16	6.7	47
MT WASHINGTON	1909	732.8		-[illegible]	-[illegible].4	-14.[illegible]	-[illegible].4	-[illegible].0	20	-32.2	14	0	31		89	118	- 10	33	14	0	[illegible]	[illegible]	17.[illegible]	W	[illegible].1*	W	28	5	[illegible]	17	[illegible].2	34
NEW [illegible]																																
ATLANTIC [illegible]	19	1027.[illegible]	1018.[illegible]	[illegible].4	[illegible].4	[illegible].4	-1.[illegible]	13.[illegible]	1[illegible]	-[illegible].[illegible]	1[illegible]	0	28	- 1.[illegible]	71	[illegible]	15	[illegible]	1	2	11[illegible]	[illegible]1	[illegible].7	WNW	1[illegible].[illegible]*	WNW	27	10	[illegible]	13	[illegible].[illegible]	[illegible]
ATLANTIC [illegible]	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	13.[illegible]	1[illegible]	-[illegible].[illegible]	1[illegible]	0	28			7[illegible]	- 12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].[illegible]		[illegible].[illegible]*	NW	28	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]AP	[illegible]	1027.[illegible]	1019.[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	-1.[illegible]	13.[illegible]	1[illegible]	-13.[illegible]	1[illegible]	0	28	- 7.[illegible]	[illegible]	[illegible]	- 29	17	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	NNE	[illegible].[illegible]	W	27+	10	[illegible]	[illegible]	[illegible].[illegible]	
[illegible]NTON	[illegible]	1021.[illegible]		[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	-1.[illegible]	11.[illegible]	1[illegible]	-[illegible].[illegible]	1[illegible]	[illegible]	[illegible]			[illegible]	- 13	[illegible]	[illegible]	[illegible]	1[illegible]	[illegible]	[illegible].[illegible]		[illegible].[illegible]	W	28	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	
NEW [illegible]																																
ALBU[illegible]	1619	848.[illegible]	[illegible].[illegible]	[illegible].[illegible]	+ [illegible].3	- [illegible].[illegible]	-[illegible].1	19.[illegible]	21	-[illegible].[illegible]	[illegible]	0	30	[illegible].[illegible]	54	[illegible]	- [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	N	[illegible].[illegible]	N	11	15	[illegible]	[illegible]	[illegible].[illegible]	85
[illegible]TY	[illegible]	[illegible]	[illegible]	[illegible].1	-[illegible].3	- [illegible].[illegible]	-[illegible].[illegible]	[illegible].[illegible]	[illegible]	-[illegible].[illegible]	[illegible]	0	31			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	T	T						[illegible]	[illegible]	[illegible]	[illegible].[illegible]	
[illegible]TON	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	-[illegible].0	- [illegible].[illegible]	-[illegible].[illegible]	[illegible].[illegible]	[illegible]	-[illegible].[illegible]	[illegible]	0	28			12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						[illegible]	[illegible]	[illegible]	[illegible].[illegible]	
[illegible]WELL	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	[illegible].6	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible]	-[illegible].[illegible]	[illegible]	0	31	- [illegible].[illegible]	44	11	- [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible].[illegible]	N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	87
[illegible]VILLE	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	[illegible].0	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible]	-[illegible].[illegible]	[illegible]	0	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]						[illegible]	[illegible]	[illegible]	[illegible].[illegible]	
NEW YORK																																
[illegible]	[illegible]	1[illegible].[illegible]	1[illegible].[illegible]	[illegible].[illegible]	[illegible].1	[illegible].[illegible]	[illegible].[illegible]	[illegible].[illegible]	[illegible]	-[illegible].[illegible]	25+	0	30	-[illegible].[illegible]	71	[illegible]	- [illegible]	[illegible]	[illegible]	[illegible]	[illegible]2	[illegible]	[illegible].[illegible]		[illegible].[illegible]	W	17	[illegible]	[illegible]	[illegible]	[illegible].[illegible]	84

CLIMATOLOGICAL DATA

METRIC UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure: Station O	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Fastest mile (1.6 kilometers): Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
NEW YORK	M.	Mb.	Mb.	C.	C.	C.	C	C		C				C	%	Mm.	Mm	Mm.			Mm.	Mm	M p s		M p s							%
BINGHAMTON	485	955.4	1017.0	- 3.3	-10.6	- 7.1	-1.9	8.3	10	-23.3	24	0	31	-10.6	76	45	- 18	15	13	0	485	305	4.3	NNW	14.3	W	27	4	5	22	7.9	32
BUFFALO	215	989.3	1018.9	- 3.9	-10.6	- 7.3	-2.6	7.2	10	-23.9	24	0	31	-10.6	79	38	- 34	10	18	0	800	584	5.9	WSW	21.0	W	24	1	6	24	8.5	29
NEW YORK U	40	1006.4	1018.2	2.2	- 4.4	- 1.1	-1.7	10.6	10	-15.6	24	0	23	- 2.8	61	49	- 35	13	11		135	102	4.1	W#	15.6	W	23	12	6	13	5.5	58
NEW YORK LA GUARDIA	6	1017.0	1018.8	1.7	- 5.0	- 1.5	-2.4	11.1	10	-16.1	24	0	24	- 7.2	66	55	- 29	19	11	0	175	152	5.3	NE	18.8	NW	24	9	7	15	6.1	
ROCHESTER	166	998.8	1019.0	- 3.3	-11.1	- 7.1	-3.3	7.8	10	-23.3	24	0	31	-10.0	78	31	- 29	13	9	0	602	356	5.1	WSW	20.1	W	20	6	4	21	7.7	37
SCHENECTADY	66			- 1.1	-10.0	- 5.6	-0.3	6.7	10	-22.8	25	0	31			53	- 12	14	10		554	559						11	13	7	5.0	
SYRACUSE	127	995.0	1018.2	- 2.2	-10.0	- 6.2	-1.8	7.8	20+	-21.1	24	0	30	-10.0	75	47	- 33	14	16	0	564	406	5.6	W	20.1	W	27	5	3	23	7.9	35
NORTH CAROLINA																																
ASHEVILLE U	671	938.6		7.8	- 5.0	1.3	-2.9	19.4	12	-21.7	24	0	24			44	- 37	19	9	1	T	T	3.8	N#	17.4	NW	23	11	9	11	5.1	65
CAPE HATTERAS R	2	1018.8	1019.5	10.6	1.7	6.1	-2.1	21.1	12	- 5.0	24	0	13	1.7	77	103	4	36	14	3	T	T	4.3	NNE				9	8	14	6.0	50
CHARLOTTE	224	991.3	1020.4	8.9	- 2.8	2.9	-3.4	20.6	11	-13.9	24	0	22	- 3.9	66	69	- 21	28	9	1	T	T	3.0	N	9.8	NW	27	12	3	16	5.8	54
GREENSBORO	272	987.4	1020.4	7.9	- 3.9	1.8	-2.5	18.9	12	-15.6	24	0	24	- 4.4	68	61	- 25	23	11	3	T	T	3.0	SW	14.8	NW	23	12	4	15	5.5	56
RALEIGH	132	1005.8	1020.2	8.9	- 3.3	2.6	-2.7	21.1	11	-13.9	24	0	22	- 2.8	71	75	- 7	25	12	0	3	T	3.5	SW	13.0*	NNW	23	13	6	12	5.3	58
WILMINGTON	9	1017.3	1020.4	12.2	0.6	6.1	-2.7	24.4	11	- 8.3	25+	0	20	0.6	71	65	- 8	19	13	1	0	0	4.4	N	16.5	NW	24	9	8	14	5.8	59
WINSTON SALEM	295	983.7	1020.2	7.2	- 2.8	2.2	-2.6	18.9	12	-15.6	24	0	23	- 6.1	58	60	- 33	18	12	2	T	T	3.6	SW	13.0*	NW	23	13	3	15	5.3	
NORTH DAKOTA																																
BISMARCK	502	958.0	1022.8	-10.0	-22.2	-16.1	-3.3	11.1	7	-35.0	27	0	30	-22.2	56	8	- 3	3	5	0	94	76	4.7	WNW	24.1	NW	19	12	7	12	5.5	58
DEVILS LAKE J	448	963.7		-12.8	-22.2	-17.6	-2.3	5.0	7	-35.0	22	0	31			2	- 12	1	3	0	33	76	4.0	NW#	13.4	NW	19	6	8	17	6.5	67
FARGO	274	984.5	1021.6	-11.7	-21.7	-16.7	-2.7	6.7	7	-32.8	22	0	31	-22.2	64	3	- 10	1	6	0	33	25	5.5	NNW	17.9	NW	20	4	11	16	6.7	63
WILLISTON U	579	950.4		- 9.4	-22.8	-16.3	-3.9	8.9	7+	-35.0	19	0	30			9	- 5	3	5	0	89	76	5.4	SW#	25.0	N	19	9	10	12	5.7	64
OHIO																																
AKRON	369	980.2	1020.0	- 2.2	-11.7	- 7.1	-4.5	7.8	10	-29.4	24	0	30	-10.6	75	27	- 45	7	11	0	363	203	4.0	SW	9.8*	WSW	20	8	2	21	7.2	
CINCINNATI OBS	232			1.1	- 8.9	- 4.1	-5.0	13.9	9	-25.6	24	0	27			52	- 42	29	11	1	236	203	2.7	S#	8.5	W	20					43
CINCINNATI U	169	996.8		2.2	- 7.2	- 2.6	-4.1	16.1	9	-24.4	24	0	26			46	- 41	25	10	1	229											
CLEVELAND	237	990.9	1020.0	- 3.3	-12.2	- 7.8	-5.3	6.7	10	-28.3	24	0	31	-11.1	75	27	- 41	8	12	0	315	254	4.8	SW	14.3	SW	20	6	3	22	7.4	40
COLUMBUS	247	989.6	1020.9	- 0.6	-11.1	- 5.7	-5.1	10.6	10+	-26.1	28+	0	28	-10.0	70	35	- 45	20	13	1	257	178	3.9	SSW	12.5	SW	20	8	6	17	6.9	42
COLUMBUS U	221			0.0	- 8.9	- 4.6	-4.4	12.2	10	-26.1	24	0	27			38	- 36	23	10	1	188	152										
DAYTON	304	986.4	1020.5	- 1.7	-11.7	- 6.5	-5.2	11.7	10	-28.3	24	0	30	-10.0	73	24	- 56	14	10	1	180	127	4.7	SSW	14.3	SW	20	6	6	19	7.0	40
MANSFIELD	395			- 3.3	-12.8	- 7.9	-5.3	8.3	10	-28.9	24	0	31			23	- 59	7	14	0	315	152						8	3	20	7.0	
SANDUSKY U	185	996.9		- 3.3	-11.7	- 7.6	-6.1	9.4	10	-26.1	24+	0	29			33	- 28	11	9	0	300	279	4.1		21.5	SW	20	11	7	13	5.8	62
TOLEDO	206	993.6	1020.3	- 5.0	-13.9	- 9.5	-6.3	6.1	9	-27.2	24+	0	31	-12.8	75	24	- 36	7	10	0	315	152	4.3	WSW	15.2	SW	20	5	6	20	7.4	34
YOUNGSTOWN	359	973.5	1019.7	- 3.3	-11.7	- 7.6	-5.6	8.3	10	-27.8	24	0	30	-11.1	76	28	- 52	8	15	0	452	203	4.4	SW	11.2*	W	20+	6	4	21	7.5	
OKLAHOMA																																
OKLAHOMA CITY	390	976.5	1022.0	5.0	- 8.9	- 2.1	-4.6	20.6	8	-19.4	12	0	26	- 9.4	63	5	- 28	4	2	0	13	25	6.1	NNW	16.5	N	22	14	6	11	4.5	66
TULSA	206	996.5	1022.2	5.0	- 8.3	- 1.9	-4.8	20.6	8	-18.9	23	0	26	- 8.9	64	25	- 19	22	5	0	15	T	4.9	S	14.3	N	22	12	9	10	4.9	65
OREGON																																
ASTORIA	2	1023.4	1024.1	6.7	- 1.1	2.7	-2.1	12.2	2	- 9.4	11	0	19	- 0.6	82	121	-177	38	17	0	8	T	3.7	E	15.6*	SSW	1	7	6	18	7.0	
BURNS U	1265	876.4		3.3	-11.1	- 3.7	0.3	13.9	21	-23.9	12	0	30			36	- 5	24	8	0	279	229						13	7	11	5.2	
EUGENE	110	1010.8		5.6	- 2.8	1.3	-2.6	12.2	3	-11.7	12	0	22			65	- 96	37	7	0	99	76	3.0		17.9*	SW	31	7	5	19	6.9	
MEACHAM	1234			- 1.1	-10.0	- 5.8	-2.5	7.2	31+	-30.6	11	0	31			72	- 35	15	18	0	480	305						6	4	21	7.5	
MEDFORD	396	975.3	1024.7	5.6	- 6.7	- 0.7	-3.4	10.6	23	-13.3	12	0	31	- 4.4	83	44	- 35	35	6	0	30	25	1.1	S	9.4*	SSE	11	12	5	14	5.5	
PENDLETON	452	970.5	1026.4	1.7	- 7.2	- 2.8	-2.6	12.8	3	-23.9	11	0	27	- 6.7	74	36	- 1	13	9	0	307	152	3.2	S	13.4*	WSW	8	8	6	17	6.6	
PORTLAND	6	1020.0	1025.4	5.0	- 1.7	1.7	-1.9	12.8	2	-11.7	11	0	21	- 2.8	74	58	- 79	29	13	0	127	76	3.4	ESE	15.2	E	30	4	8	19	7.4	45
PORTLAND U	9			5.6	- 0.6	2.4	-2.2	12.8	2	-10.6	11	0	17			76	- 85	38	11		168	127										
ROSEBURG	154	1005.1		6.1	- 3.3	1.4	-3.2	15.6	31	-13.9	12	0	25			37	-103	17	9	0	51	25	1.4	N#	9.8	SW	31	8	5	18	6.8	42
SALEM	59	1018.0	1025.2	5.0	- 3.3	0.9	-2.9	11.7	3	-11.1	12+	0	24	- 3.3	76	71	- 99	31	7	0	168	127	3.2	S	11.2*	SSW	31	6	7	18	6.4	70
SEXTON SUMMIT R	1169	886.6		7.2	- 0.6	3.3	2.4	15.0	8+	-11.1	11	0	16			100	- 42	83	8	0	109	76	5.0	N				16	6	9	4.1	
PACIFIC AREA																																
CANTON ISLAND	3	1008.8	1009.1	31.1	25.0	28.2	-0.2	31.7	5+	23.3	22	0	0	21.1	69	6	- 61	4	3	0	0	0	6.6	NE	11.2*	NNE	31	18	10	3	3.9	
ENIWETOK	5	1009.5		30.0	25.6	27.7	0.3	30.6	29+	23.9	17+	0	0			12	- 13	8	3	0	0	0	6.2									
TAGUAC GUAM R	110			28.3	21.1	24.7	-1.0	30.0	27+	17.2	14+	0	0			237	119	61	18	1	0	0	2.9	E#	8.9	NE	30					54
KOROR R	29	1005.8	1008.3	30.6	23.9	27.1	0.2	32.2	20+	21.7	21	2	0	23.9	88	7	- 91	2	6	0	0	0	4.0		13.0	W		19	11	1	3.5	83
JOHNSTON	2	1011.5		27.2	22.8	25.1	0.0	29.4	28+	21.7	5	0	0			473	175	115	23	3	0	0	3.0	NE	11.2	E	4	0	0	31	9.9	49
MAJURO	3	1009.1	1009.4	29.4	25.0	26.9	0.2	30.0	31+	22.2	5	0	0	22.8	78	443	266	100	19	0	0	0	5.4	E	12.1	E	19+	1	12	18	7.8	49
PONAPE R	37	1004.1	1008.4	29.4	23.3	26.4	-0.6	31.1	12+	21.1	24	0	0	23.3	84	533	252	114	25	3	0	0	2.5	NE	10.3	NW	4	0	1	30	9.5	43
TRUK MOEN ISLAND	2	1008.8	1009.0	29.4	23.9	26.7	-0.4	30.6	23+	21.7	25+	0	0	23.3	80	286	73	60	23	0	0	0	3.0	NNE	11.6	N	27	0	3	28	9.2	50
WAKE	3	1012.5	1013.0	28.9	22.8	25.6	0.4	30.0	29+	20.0	12	0	0	20.0	72	14	- 15	5	8	0	0	0	4.0	NE	10.3*	N	30+	14	13	4	4.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm	M p.s.		M.p.s.							%
PACIFIC AREA																																
YAP R	16	1007.5	1008.3	29.4	23.9	26.8	0.1	32.2	13	22.8	26	1	0	23.9	86	286	86	62	22	0	0	0	4.2	NE	15.2	N	29	0	4	27	9.4	57
PENNSYLVANIA																																
ALLENTOWN	115	1004.5	1019.5	0.6	- 9.4	- 4.4	-2.8	7.8	10	-22.8	29	0	29	- 8.3	75	76	- 4	19	10	0	310	203	3.6	W	16.1*	WSW	27	9	6	16	6.3	
ERIE	223	992.0	1019.5	- 2.8	-10.6	- 6.8	-4.2	9.4	10	-26.1	24	0	30	-10.0	77	38	- 29	9	16	0	475	279	6.4	WSW	14.3*	S	9	3	5	23	8.1	
HARRISBURG	102	1005.0	1019.6	1.1	- 7.2	- 3.2	-3.1	8.3	10	-20.0	29	0	28	- 8.9	67	56	- 14	14	11	0	231	152	3.4	NW	15.6	W	27	11	7	13	6.0	50
PHILADELPHIA	2	1014.4	1019.2	2.2	- 7.2	- 2.5	-2.7	9.4	17+	-20.6	29	0	27	- 6.7	72	59	- 26	21	12	1	155	102	3.8	NW	18.8	NW	27	9	6	16	6.3	57
PHILADELPHIA U	11			3.9	- 3.9	- 0.1	-1.7	12.2	10	-16.1	24	0	23			53		21	10	2												
PITTSBURGH	347	988.7	1020.5	- 1.1	-11.1	- 6.1	-4.3	10.6	10	-27.8	24	0	29	- 9.4	76	50	- 26	14	13	0	323	203	3.6	WSW	12.5*	WS	23	6	7	18	7.1	49
PITTSBURGH U	228			1.7	- 7.8	- 3.0	-3.7	13.9	10	-25.0	24	0	26			34	- 37	11	10		157											44
READING U	81	1006.7	1019.3	1.7	- 6.7	- 2.3	-2.7	11.1	10	-18.9	24	0	28			64	- 14	19	9	0	155	127	3.9	W	24.1	W	27	9	6	16	6.1	45
SCRANTON	287	982.7	1019.4	- 0.6	- 8.9	- 4.9	-1.9	8.9	10	-21.7	29	0	28	- 9.4	70	52	- 6	13	11	0	386	203	3.3	SW	13.0	SW	27	8	2	21	7.1	47
WILLIAMSPORT	161	999.5	1019.4	0.0	- 9.4	- 4.9	-3.1	6.1	10	-24.4	29	0	29	-10.0	69	53	- 15	14	12	1	302	229	3.8	W	14.3*	WSW	27	6	6	19	7.0	
RHODE ISLAND																																
BLOCK ISLAND	34	1012.3		2.2	- 4.4	- 1.1	-1.4	8.9	20	-13.3	25+	0	24			86	- 11	36	12	0	132	76						8	9	14	6.4	
PROVIDENCE	17	1011.1	1017.6	2.8	- 6.1	- 1.7	-0.2	12.8	20	-16.7	25	0	28	- 7.2	68	86	- 10	28	12	0	135	102	4.9	NNW	16.1	WNW	28	10	7	14	6.0	60
SOUTH CAROLINA																																
CHARLESTON	12	1018.2	1020.4	13.3	1.7	7.4	-2.8	22.8	11	- 8.9	25	0	12	1.1	69	80	15	31	14	1	0	0	3.8	NNE	18.8Y	W	23	9	6	16	6.4	52
CHARLESTON U	3			12.8	4.4	8.6	-2.3	20.0	11	- 4.4	24	0	7			68	7	30	10	0	0	0	4.3		15.2	W	23					
COLUMBIA	66	1007.5	1021.1	11.7	- 1.7	5.2	-3.1	24.4	11	-10.0	25+	0	22	- 1.1	68	137	60	39	12	2	T	T	2.9	WSW	11.2*	WNW	23	9	7	15	6.1	67
FLORENCE	45	1008.9	1020.5	11.1	- 0.6	5.4	-3.2	23.9	11	- 8.9	24	0	19	- 1.7	65	128	61	43	13	2	T	T	3.4	NE	10.3*	NNW	24+	10	9	12	5.8	
GNVLE SPARTANBURG	292	982.2	1020.2	10.0	- 1.7	4.3	-2.4	21.1	12	-12.8	24	0	22	- 3.3	62	100	- 9	42	11	1	0	0	2.8	NE	13.4	N	24	9	6	16	6.1	57
SOUTH DAKOTA																																
HURON	331	972.4	1023.1	- 8.3	-21.7	-15.0	-4.7	16.1	8	-36.1	15	0	31	-20.0	67	16	4	8	7	0	264	178	5.8	WNW	18.8	NW	20+	11	3	17	6.2	53
RAPID CITY	968	901.8	1022.5	- 3.9	-18.3	-10.9	-5.4	15.6	8+	-32.2	19	0	30	-17.2	63	26	17	6	16	0	274	127	5.3	NNW	19.2	NW	19	12	2	17	6.3	49
SIOUX FALLS	433	967.2	1022.6	- 8.3	-19.4	-14.1	-4.7	12.2	8	-30.0	23	0	31	-18.3	70	23	7	8	8	0	279	203	4.8	WNW	16.5*	NNW	20+	10	5	16	6.4	
TENNESSEE																																
BRISTOL	458	964.7	1020.8	5.0	- 6.7	- 0.8	-4.3	16.7	12	-22.2	24	0	24	- 6.1	71	81	- 12	22	13	1	104	15	2.1	W	17.9*	WNW	11	11	5	15	6.0	
CHATTANOOGA	204	994.4	1022.1	6.7	- 5.0	0.3	-5.1	18.9	11	-21.7	24	0	26	- 5.0	71	122	- 20	40	11	3	10	T	3.2	N	13.9	W	27	9	4	18	6.9	48
KNOXVILLE	290	985.1	1021.8	6.7	- 5.0	0.9	-4.2	20.0	11	-21.1	24	0	24	- 5.9	73	107	- 17	26	11	1	107	76	3.3	NE	17.4	S	11	9	7	15	6.2	41
MEMPHIS	80	1006.8	1022.2	7.2	- 4.4	1.3	-4.2	23.3	10	-17.8	24	0	23	- 3.9	73	33	-122	13	8	0	50	25	3.9	S	13.4	N	23	10	7	14	6.1	54
MEMPHIS	83			7.2	- 2.8	2.1	-3.5	22.8	10	-17.8	24	0	18			29	-118	13	9		25	25										
NASHVILLE	176	1001.3	1021.7	6.1	- 7.2	- 0.6	-5.0	18.3	11	-26.1	24	0	24	- 5.0	75	41	- 99	22	8	2	173	127	3.3	S	16.1*	NW	23	10	4	17	6.2	52
OAK RIDGE	276	987.6		6.6	- 6.1	- 0.4	-4.8	20.0	11	-22.2	24	0	24			72	- 79	17	12	0	66	51	1.7		11.6Y		11	12	5	14	5.6	
TEXAS																																
ABILENE	546	957.6	1023.3	16.2	- 4.4	5.7	-3.3	34.4	9	-14.4	12	0	22	- 0.2	52	T	- 22	T	1	0	18	25	5.3	N	15.2	N	22+	15	6	10	4.7	71
AMARILLO	1099	888.5	1018.9	7.8	-11.7	- 1.7	-4.1	25.6	31	-22.8	12	0	31	-13.9	47	2	- 15	1	4	0	13	T	6.8	N	15.6	W	31+	18	11	2	3.4	81
AUSTIN	180	998.2	1021.4	12.8	0.6	6.4	-3.8	30.0	10	-11.1	24	0	15	- 2.2	61	15	- 45	7	5	0	T	T	4.5	N	16.1	N	23	9	6	15	6.4	50
BROWNSVILLE	6	1017.2	1021.3	19.4	7.8	13.6	-2.8	31.1	11	- 3.3	24	0	5	7.8	73	6	- 28	3	4	0	0	0	5.3	NNW	13.4	NE	26	3	11	17	7.5	48
CORPUS CHRISTI	17	1013.5	1021.8	16.1	3.2	10.1	-4.1	33.4	10	- 7.8	24	0	10	3.9	72	5	- 37	2	5	0	T	T	5.5	NNE	18.8	NE	26	4	8	19	7.7	48
DALLAS	147	1000.8	1022.2	9.4	- 2.2	3.4	-4.3	24.4	10	-13.3	24	0	17	- 5.0	60	12	- 46	9	3	1	18	25	5.8	N	16.1	N	23	13	5	13	5.1	56
DEL RIO	316			19.2	1.1	8.2	-2.9	39.4	10	- 8.9	24	0	14			T	- 23	T	0	0	0	0										
EL PASO	1194	867.5	1021.6	12.6	- 2.8	4.7	-1.9	24.4	31	-12.2	14	0	19	- 7.8	43	3	- 8	2	3	0	20	25	3.7	WSW	23.2	W	11	17	6	9	4.0	84
FORT WORTH	196	1000.1	1022.1	9.4	- 2.4	3.5	-4.4	24.4	10	-12.8	24+	0	19	- 4.4	63	22	- 30	12	5	0	T	T	6.1	NNW	17.9*	N	23	13	5	13	5.6	
GALVESTON	2			13.2	4.6	8.4	-3.2	28.8	10	- 7.2	24	0	9			38	- 50	20	8	0	T	T	5.9		16.6	NW	23					54
GALVESTON	2	1018.6	1021.1	12.8	5.0	8.8	-3.6	22.8	10	- 7.2	24	0	10	4.4	75	39	- 56	20	7	1	2	0	5.3	N				9	7	21	7.7	
HOUSTON	22			13.2	5.0	9.4	-3.1	27.8	10	- 7.8	24	0	10			23	- 3	61	12	0	0	0										
HOUSTON	15	1018.7	1021.1	14.4	3.6	9.1	-3.5	28.2	10	- 8.3	24	0	13	4.4	76	78	- 18	61	8	1	T	T	4.9	NNW				6	5	20	7.4	44
LAREDO	137	1000.4	1022.0	17.6	3.7	10.8	-3.5	31.2	11	- 6.1	24	0	11	0.8	57	8	- 21	3	6	0	0	0	4.1	NNW	13.0*	NNE	23	5	13	13	6.2	
LUBBOCK	988	904.1	1021.5	11.0	- 8.0	1.5	-3.6	26.6	31+	-26.7	13	0	30			2	- 16	1	3	1	58	51	5.4	WSW	17.0*	WSW	31	17	4	9	3.5	
MIDLAND	872	911.1	1021.2	15.8	- 4.4	4.3	-2.3	36.7	31+	10.0	10	0	24	- 8.9	46	T	- 24	T	1	0	T	T	5.3	SW	15.6*	W	10	14	8	9	4.4	
PORT ARTHUR	6	1018.1	1021.6	13.4	3.0	8.2	-2.7	29.6	10	- 8.9	24	0	12	3.9	78	156	- 49	78	13	3	T	T	4.6	N	21.6	N	27	5	6	20	7.6	34
SAN ANGELO	577	952.1	1021.2	17.4	1.2	9.4	-2.6	37.2	31	-14.4	24	0	21	- 7.4	44	2	- 28	1	2	0	T	T	4.1	SW	11.2*	W	10	20	4	7	4.6	
SAN ANTONIO	241	995.6	1021.6	15.4	1.1	7.7	-3.1	33.0	10	- 9.4	24	0	14	- 3.6	61	7	- 37	4	6	2	2	1	4.2	N	17.9	N	23	14	5	12	5.4	63
VICTORIA	31	1016.1	1021.6	16.4	3.1	9.6	-4.4	28.3	10	- 8.3	24	0	12			6	- 54	3	6	2	0	0	5.1		24.6*		23	6	6	17	7.0	
WACO	160	998.6	1021.3	13.1	- 1.1	6.0	-3.9	34.7	10	-11.7	24	0	16	- 2.2	56	14	- 45	6	4	1	T	T	6.4	NW	19.7*	NNW	23	12	4	14	5.7	
WICHITA FALLS	299	979.7	1021.3	14.9	- 1.4	6.7	-3.6	36.1	9	-15.6	24	0	21	- 2.8	53	6	- 23	5	3	1	T	T	4.4	N	20.9*	N	23+	12	4	15	5.3	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JANUARY 1963

State and Station	Elevation (ground)	Pressure: Station O	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow Sleet: Total	Precipitation: Snow Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
UTAH	M	Mb	Mb.	C.	C.	C	C.	C		C.				C	%	Mm	Mm	Mm			Mm	Mm	M.p.s.		M.p.s							%
MILFORD	1533	845.9		2.8	-12.8	- 5.2	-1.1	12.2	25	-28.3	13	0	29			5	- 1	4	3		56	51						16	7	8	4.1	
SALT LAKE CITY	1286	871.0	1025.8	- 0.6	-13.3	- 6.9	-4.8	11.7	31+	-27.8	12	0	29	-11.1	72	13	- 21	6	6		188	102	3.4	SSE	18.3	S	31	8	8	15	6.7	49
WENDOVER	1291	874.0		- 0.6	-12.2	- 6.2	-3.5	15.0	31	-23.3	12	0	30			5	- 3	3	2		36	25						15	5	11	4.7	
VERMONT																																
BURLINGTON	101	1002.0	1017.5	- 4.4	-12.8	- 8.6	-0.9	3.9	20+	-27.2	29	0	31	-12.8	71	29	- 21	8	12	0	325	254	3.9	S	12.1	S	29	3	6	22	8.1	31
VIRGINIA																																
LYNCHBURG	289	993.8		6.1	- 5.0	0.7	-2.4	19.4	12+	-18.3	24	0	26			49	- 35	18	12	2	T	T	3.4		14.8	SW	23	13	6	12	5.2	61
NORFOLK	8	1018.8	1020.2	6.7	- 1.1	2.8	-2.3	22.2	11	- 8.3	25+	0	23	- 2.8	70	85	1	24	15	1	48	51	5.1	N	16.1	NW	23	10	8	13	5.7	54
RICHMOND	49	1013.7	1020.2	7.2	- 3.3	2.2	-1.6	20.0	12	-12.8	29	0	25	- 3.9	68	39	- 49	15	11	0	41	25	3.3	SSW	13.0	NW	23	11	11	9	4.9	54
ROANOKE	358	976.4	1020.1	6.7	- 5.6	0.5	-2.9	19.4	12	-20.0	24	0	25	- 7.2	59	28	- 51	10	10	1	T	25	3.8	WNW	14.8	SW	20	13	7	11	5.1	
WASHINGTON																																
OLYMPIA	58	1018.6	1025.6	4.4	- 3.3	0.6	-2.8	11.7	2	-15.0	12	0	21	- 2.8	78	88	-111	37	14	0	51	51	2.9	SW	11.6*	NE	18	4	7	20	7.6	
SEATTLE TACOMA	122	1010.5	1025.0	3.9	- 1.7	1.1	-2.4	11.1	2	-11.1	11	0	23	- 3.3	74	57	- 88	20	9	0	79	25	3.4	N	10.3*	SSW	3+	4	6	21	7.7	
SEATTLE U	4			5.0	1.1	3.0	-2.1	11.1	3+	- 8.3	11	0	14			49	- 83	15	10		46	T	2.4	SSE	15.6	SW	2					33
SPOKANE	718	954.2	1027.7	- 3.3	-10.6	- 7.1	-3.3	7.2	3+	-21.7	11	0	29	-12.2	67	23	- 39	21	6	0	221	203	3.6	NE	13.4	SW	1	5	6	20	7.5	37
STAMPEDE PASS R	1206	882.2		- 2.2	- 8.9	- 5.7	-0.9	7.8	5	-23.3	11	0	30			14	-165	41	15	0	663	1143						6	4	21	7.6	
TATOOSH ISLAND	31	1021.7	1024.7	6.1	2.2	4.2	-1.4	11.1	3	- 5.6	11	0	8	- 0.6	71	73	-202	61	10	0	T	T	8.1	ENE	29.5	NE	30	6	4	21	7.7	38
WALLA WALLA U	289	989.3		1.7	- 5.6	- 1.8	-2.4	15.6	3+	-17.8	11	0	25			24	- 24	11	10	0	140	102	1.8	W#	7.6	N	10	5	7	19	7.5	34
YAKIMA	323	986.5	1027.1	1.7	- 9.4	- 3.8	-1.3	13.3	3	-19.4	11	0	30	-10.0	67	36	- 6	35	3	0	368	356	2.5	WNW	15.6*	NE	28	9	6	16	6.4	
WEST INDIES																																
SAN JUAN P.R.	5	1014.2	1017.2	27.8	20.6	24.3	0.7	30.0	9	17.2	11	0	0	20.0	78	80	- 40	16	24	0	0	0	3.4	ENE	12.1	NE	23	3	22	6	5.8	57
SWAN ISLAND	9	1014.2		28.3	23.9	26.0	5.8	29.4	30+	21.7	4+	0	0			33	- 55	20	8		0	0						12	15	4	4.4	
WEST VIRGINIA																																
CHARLESTON	286	984.1	1020.9	3.9	- 8.3	- 2.3	-4.8	18.3	11	-24.4	24	0	26	- 7.2	69	47	- 63	20	14	2	272	102	2.5	SW	9.4*	WSW	27+	10	5	16	6.1	
ELKINS	600	947.9	1019.7	3.3	-10.6	- 3.4		16.7	11	-28.9	29	0	29	- 7.8	72	42		8	18	0	318	127	2.9	S	17.0*	WNW	24+	9	5	17	6.4	
HUNTINGTON U	252	989.9	1021.3	3.3	- 8.9	- 2.8		18.9	11	-26.1	24	0	27	- 7.2	72	47	- 50	20	13	1	201	152	2.9	S	10.3*	NW	23	9	6	16	6.3	
PARKERSBURG U	187			2.8	- 8.9	- 3.0	-4.4	17.2	11+	-25.6	24	0	27			46	- 39	18	10	1	213	178	2.8		12.1	W	27+					49
WISCONSIN																																
GREEN BAY	208	995.3	1019.5	-10.0	-17.8	-13.9	-5.2	3.9	9	-32.8	23	0	31	-17.8	71	17	- 12	11	12	0	203	203	3.7	WNW	15.6	NW	20	6	6	19	6.9	36
LA CROSSE	199	995.0	1021.7	- 9.4	-18.9	-14.3	-5.7	6.1	8	-35.0	15	0	31	-18.3	67	17	- 13	11	10	0	338	229	4.4	S	15.6*	NW	20	5	6	20	7.3	
MADISON	262	982.5	1020.6	-10.6	-19.4	-14.8	-7.0	2.2	9+	-34.4	15	0	31	-17.8	75	19	- 16	10	9	0	305	178	4.0	SW	13.9	NE	11	6	7	18	6.9	45
MILWAUKEE	205	993.6	1020.4	- 9.4	-16.7	-12.9	-6.6	3.3	8	-31.1	15	0	30	-17.2	68	17	- 30	10	10	0	206	127	5.4	W	15.2	W	20	9	5	17	6.6	48
WYOMING																																
CASPER	1621	835.1	1021.5	- 3.3	-16.7	-10.2	-5.4	10.6	31	-32.8	11	0	30	-16.7	61	10	- 5	3	12	0	269	76	6.9	SW	16.1*	WSW	31+	8	9	14	6.1	
CHEYENNE	1867	809.0	1019.9	- 1.7	-15.0	- 8.5	-5.1	11.1	8	-32.8	11	0	30	-16.1	59	13		3	8	0	226	76	7.6	WNW	25.0	W	20	12	7	12	5.4	67
LANDER	1696	834.4	1023.6	- 6.7	-21.1	-13.9	-6.9	10.6	31	-38.3	12	0	31	-18.3	72	29	17	21	9	0	452	254	2.0	W	25.0	SW	31	9	7	15	6.0	65
SHERIDAN	1202	885.2	1023.3	- 3.3	-18.9	-11.1	-5.1	13.3	7	-37.2	19	0	30	-14.4	71	33	17	6	18	0	607	356	3.8	NW#	24.1	NW	9	5	6	20	7.4	52

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column headed "Fastest Mile" is the highest observed wind speed. This station is not equipped with an automatic recording wind instrument.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

V Sun below horizon January 1-23, inclusive.

X Sun below horizon January 1-17, inclusive.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.)

JANUARY 1963

State and station	Current season		Normals
	This month	Period July through this month	July through this month
ALABAMA			
Birmingham	822	1999	1753
Huntsville	905	2311	1922
Mobile	575	1299	1068
Montgomery	715	1786	1468
ALASKA			
Anchorage	1415	6048	6469
Annette	864	3394	3975
Barrow	2299	10416	11028
Barter Island	2349	10134	10796
Bethel	1404	7178	7570
Cold Bay	949	5046	5402
Cordova	1147	5217	5597
Fairbanks	1959	8054	8794
Juneau	1147	4775	5140
King Salmon	1235	6034	6552
Kotzebue	1691	8190	8846
McGrath	1970	8381	8680
Nome	1384	7542	7918
St. Paul	1068	5889	6000
Shemya	936	5049	5300
Yakutat	1048	4837	5124
ARIZONA			
Flagstaff	1218	3781	3887
Phoenix (U)	441	754	
Phoenix	507	924	1050
Prescott	910	2301	2513
Tucson	515	1001	1183
Winslow	1147	2822	2960
Yuma	359	560	611
ARKANSAS			
Ft. Smith	1020	2255	2074
Little Rock	954	2184	2073
Texarkana	848	1829	1610
CALIFORNIA			
Bakersfield	618	1391	1367
Bishop	877	2331	2555
Blue Canyon	762	2362	2791
Burbank	379	855	893
Eureka (U)	579	2522	2573
Fresno	698	1596	1620
Long Beach	327	727	940
Los Angeles (U)	286	685	708
Los Angeles	296	740	1013
Mt. Shasta (R)	918	2933	3169
Oakland	582	1670	1592
Point Arguello (R)	471	2019	1920
Red Bluff	678	1545	1531
Sacramento (U)	679	1563	1468
Sacramento	736	1717	1506
Sandberg (R)	757	1982	2181
San Diego	299	737	742
San Francisco (U)	445	1749	1648
San Francisco	598	1819	1638
San Jose (U)	521	1266	
Santa Maria	477	1637	1554
COLORADO			
Alamosa	1625	4849	5043
Colorado Springs	1331	3445	3632
Denver	1417	3564	3365
Grand Junction	1633	3646	3451
Pueblo	1411	3270	3201
CONNECTICUT			
Bridgeport	1152	3451	3053
Hartford	1277	4136	3528
Middletown	1263	4018	
New Haven	1158	3516	3202
DELAWARE			
Wilmington	1130	3257	2816
DIST. OF COLUMBIA			
Washington (U)	951	2825	
Washington	1034	2855	2474
FLORIDA			
Apalachicola (U)	450	1038	835
Daytona Beach	264	717	534
Fort Myers	110	314	279
Jacksonville	385	1017	798
Key West	11	73	68
Lakeland (U)	209	534	416
Miami	48	194	139
Miami Beach	24	99	96
Orlando	209	566	481
Pensacola (U)	515	1172	930
Tallahassee	491	1261	961
Tampa	212	552	433
West Palm Beach	73	244	158
GEORGIA			
Athens	817	2124	1806
Atlanta	857	2259	1843
Augusta	702	1843	1512
Columbus	702	1811	1515
Macon	675	1727	1375
Rome	917	2454	2070
Savannah	557	1501	1167
Thomasville (U)	502	1254	983
IDAHO			
Boise	1286	3362	3426
Idaho Falls 46W (R)	1663	4736	4907
Idaho Falls 42NW (R)	1735	4964	5125
IDAHO (Cont'd.)			
Lewiston	1259	3324	3278
Pocatello	1454	3933	4063
ILLINOIS			
Cairo (U)	1134	2716	2360
Chicago (Midway)	1600	3898	3457
Chicago (O'Hare)	1655	4182	
Moline	1717	4283	3712
Peoria	1613	4091	3509
Rockford	1725	4361	3920
Springfield	1486	3687	3248
INDIANA			
Evansville	1269	3274	2756
Ft. Wayne	1516	4003	3564
Indianapolis	1406	3733	3293
South Bend	1598	4142	3612
IOWA			
Burlington	1607	3983	3577
Des Moines	1751	4144	3811
Dubuque	1796	4617	4262
Sioux City	1727	4173	4102
Waterloo	1802	4573	4207
KANSAS			
Concordia	1487	3510	3166
Dodge City	1321	3101	2940
Goodland	1458	3570	3517
Topeka	1452	3407	3101
Wichita	1323	3043	2808
KENTUCKY			
Lexington	1183	3195	2750
Louisville	1200	3207	2795
LOUISIANA			
Alexandria	709	1651	
Baton Rouge	555	1200	1056
Lake Charles	586	1210	961
New Orleans (Audubon Park)	366	840	
New Orleans	540	1202	936
Shreveport	785	1628	1400
MAINE			
Caribou	1597	5517	5480
Greenville (U)	1578	5429	
Portland	1277	4323	4129
MARYLAND			
Baltimore (U)	1023	2750	2367
Baltimore	1114	3206	2738
Frederick	1219	3480	2947
MASSACHUSETTS			
Blue Hill Obs. (R)	1202	3802	3464
Boston	1094	3317	3059
Nantucket	1020	3154	3003
Pittsfield	1366	4580	4228
Worcester	1310	4176	3854
MICHIGAN			
Alpena	1697	4976	4417
Detroit (City AP)	1475	3922	3460
Detroit (M. Wayne Co.)	1520	4108	3591
Detroit (Willow Run)	1522	4083	3491
Escanaba (U)	1759	4889	4590
Flint	1602	4433	3889
Grand Rapids	1513	4102	3816
Lansing	1604	4341	3835
Marquette (U)	1728	4932	4522
Muskegon	1482	4028	3803
S. Ste. Marie	1803	5213	5037
MINNESOTA			
Duluth	1989	5731	5599
Internat. Falls	2166	6027	6126
Minneapolis	1927	5005	4886
Rochester	1894	4915	4694
St. Cloud	1955	5100	5116
MISSISSIPPI			
Jackson	752	1732	1428
Meridian	764	1886	1481
Vicksburg (U)	722	1627	1306
MISSOURI			
Columbia	1392	3338	2999
Kansas City	1394	3185	2901
St. Joseph	1495	3592	3270
St. Louis (RFC)	1286	3023	2675
St. Louis	1347	3239	2882
Springfield	1226	3089	2718
MONTANA			
Billings	1586	3856	3976
Butte	1783	5646	
Glasgow	1917	4739	5237
Great Falls	1615	4153	4192
Havre	1808	4638	4953
Helena	1687	4575	4690
Kalispell	1690	4829	5047
Miles City	1784	4390	4463
Missoula	1745	4894	4804
NEBRASKA			
Grand Island	1689	4236	3641
Lincoln (U)	1541	3704	3411
Norfolk	1686	4216	4038
North Platte	1607	4055	3891
Omaha	1590	3810	3670
Omaha N. Omaha AP	1643	4021	3946
Scottsbluff	1552	3884	3878
Valentine	1701	4237	4253
NEVADA			
Elko	1359	4077	4264
Ely	1299	3947	4328
Las Vegas	733	1578	1736
Reno	1134	3475	3520
Tonopah	1091	3069	
Winnemucca	1305	3722	3919
NEW HAMPSHIRE			
Concord	1363	4349	4158
Mt. Washington Obs. (R)	1844	8053	7709
NEW JERSEY			
Atlantic City	1040	3012	2655
Atlantic City (U)	999	2853	
Newark	1091	3115	2856
Trenton (U)	1108	3196	2810
NEW MEXICO			
Albuquerque	1098	2725	2651
Clayton	1218	2955	2966
Raton	1329	3523	3583
Roswell	1020	2566	2578
Silver City	881	2170	
NEW YORK			
Albany	1381	4259	3879
Binghamton	1414	4452	4092
Buffalo	1420	4146	3888
New York (U)	1074	3084	2682
New York (LaGuardia)	1100	3096	2638
Rochester	1412	4099	3687
Schenectady	1328	4077	
Syracuse	1364	4118	3749
NORTH CAROLINA			
Asheville (U)	943	2764	2407
Cape Hatteras (R)	678	1739	1452
Charlotte	851	2376	1917
Greensboro	918	2603	2300
Raleigh	870	2439	2076
Wilmington	675	1824	1432
Winston-Salem	894	2537	2175
NORTH DAKOTA			
Bismarck	1925	4936	5186
Devils Lake (U)	2007	5481	5705
Fargo	1957	5028	5368
Grand Forks CAA	2006	5022	
Pembina	2078	5190	
Williston (U)	1936	4972	5172
OHIO			
Akron	1412	3925	3547
Cincinnati (U)	1167	3002	
Cincinnati	1321	3551	2928
Cincinnati Obs.	1239	3292	2805
Cleveland	1452	3841	3603
Columbus	1334	3911	3149
Columbus (U)	1270	3442	
Dayton	1380	3744	3216
Mansfield	1458	4077	3589
Sandusky (U)	1438	3764	3208
Toledo	1549	4169	3669
Youngstown	1442	4152	3500
OKLAHOMA			
Oklahoma City	1131	2487	2367
Tulsa	1119	2478	2250
OREGON			
Astoria	864	2849	2882
Burns (U)	1224	3839	4000
Eugene	943	2716	2670
Meacham	1344	4422	4294
Medford	1051	2998	2757
Pendleton	1170	3017	3134
Portland (U)	884	2303	2352
Portland	925	2570	2659
Roseburg	936	2513	2518
Salem	964	2822	2634
Sexton Summit (R)	834	3090	3292
PENNSYLVANIA			
Allentown	1266	3742	3297
Erie	1394	3844	3464
Harrisburg	1198	3468	3000
Philadelphia (U)	1021	2930	
Philadelphia	1159	3273	2958
Pittsburgh (U)	1185	3354	2879
Pittsburgh	1354	3928	3397
Reading (U)	1147	3287	2848
Scranton	1289	4023	3683
Williamsport	1288	3904	3407
RHODE ISLAND			
Block Island	1073	3237	2886
Providence	1115	3524	3277
SOUTH CAROLINA			
Charleston (U)	538	1414	1112
Charleston	604	1643	1283
Columbia	726	1883	1576
Florence	714	1895	1497
Greenville-Spartanburg	774		
SOUTH DAKOTA			
Huron	1860	4747	4621
Pierre	1718	4197	
Rapid City	1634	4005	4082
Sioux Falls	1809	4505	4551
TENNESSEE			
Bristol	1062	2947	2552
Chattanooga	998	2510	2106
Knoxville	973	2570	2193
Memphis (U)	898	2168	1868
Memphis	944	2273	1954
Nashville	1050	2677	2193
Oak Ridge	1042	2792	2312
TEXAS			
Abilene	805	1736	1693
Amarillo	1114	2545	2540
Austin	657	1278	1112
Brownsville	292	488	420
Corpus Christi	466	829	631
Dallas	821	1660	1508
Del Rio (U)	559	1061	
El Paso	753	1759	1723
Ft. Worth	839	1710	1539
Galveston (U)	494	908	758
Galveston	524	958	789
Houston (U)	497	913	816
Houston	515	993	835
Laredo	427	733	589
Lubbock	988	2269	2249
Midland	773	1743	1711
Port Arthur	573	1173	991
San Angelo	711	1512	1428
San Antonio	575	1141	1029
Victoria	538	989	770
Waco	741	1469	1305
Wichita Falls	914	1876	1872
UTAH			
Milford	1305	3646	3802
Salt Lake City	1403	3627	3443
Wendover	1365	3590	3511
VERMONT			
Burlington	1491	4866	4337
VIRGINIA			
Lynchburg	979	2842	2485
Norfolk	859	2347	1980
Richmond	897	2562	2332
Roanoke	989	2879	2488
WASHINGTON			
Olympia	984	3159	2982
Seattle (U)	848	2392	2493
Seattle	874	2586	2823
Seattle-Tacoma	959	2937	2958
Spokane	1411	4011	3972
Stampede Pass (R)	1333	5146	5131
Tatoosh Island (R)	782	3169	3172
Walla Walla	1158	2964	
Walla Walla (U)	1115	2826	2907
Yakima	1227	3503	3636
WEST VIRGINIA			
Charleston	1144	3247	2594
Huntington (U)	1170	3271	2478
Parkersburg (U)	1183	3318	2777
WISCONSIN			
Green Bay	1799	4736	4604
La Crosse	1819	4595	4388
Madison	1850	4810	4384
Milwaukee	1749	4563	4239
WYOMING			
Casper	1590	4092	4139
Cheyenne	1492	3983	4033
Lander	1800	4442	4520
Sheridan	1639	4283	4317

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

JANUARY 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
					† DAMAGE			† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES		DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama	2	2	0	0	5					1	0	5	4	0	6	0	0									3	0	6	6
Alaska *																													
Arizona																										0	0	4	6
Arkansas *																													
California										0	8	5	0													2	0	6	6
Colorado										0	F	6	0													2	M	4	0
Connecticut *																													
Delaware *																													
Florida *																													
Georgia	9	3	1	8	6					0	0	4	0									0	0	4	0	0	0	4	4
Hawaii										0	9	6	6																
Idaho																											20		
Illinois *																													
Indiana	1	1	0	0	4	0	0	3	0																				
Iowa *																													
Kansas *																													
Kentucky										0	0	4	0					?	?	0	0					0	0	5	6
Louisiana	1	1	0	3	4					2	0	?	0	0	1	?	0					0	?	?	0	4	?	?	?
Maine																		0	0	4	0	0	0	4	0	0	0	5	0
Maryland										0	0	4	0	0	0	5	0												
Massachusetts										0	0	4	0					0	0	4	0	0	0	4	0				
Michigan *																													
Minnesota *																													
Mississippi										0	1	?	?									2	?	?	0	4	?	?	?
Missouri						0	0	3	0									0	0	5	0	1	25	4	0				
Montana *																													
Nebraska																		0	0	4	0								
Nevada *																													
New Hampshire																		0	0	4	0	0	0	3	0	0	0	3	0
New Jersey *																													
New Mexico										0	0	4	0																
New York																				6				5					
North Carolina	1	1	0	0	4					3	0	5	0	0	0	3	0					4	60	5	0	4	0	4	0
North Dakota *																													
Ohio *																													
Oklahoma																										2	0	5	0
Oregon										0	0	4	2									1	M	4	3				
Pacific Area *																													
Pennsylvania *																													
Puerto Rico *																													
Rhode Island *																													
South Carolina										0	0	5	0									1	3	0	0				
South Dakota *																													
Tennessee	1	1	0	1	6					0	1	4	0					0	?	0	0	0	?	0	0	0	?	6	?
Texas										0	2	4	0																
Utah *																													
Vermont																		0	0	4	0	0	0	4	0				
U.S. Virgin Is. *																													
Virginia *																													
Washington *																													
West Virginia *																													
Wisconsin *																													
Wyoming										0	0	5	0																

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
F Few
M Many

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JANUARY 1963

The record-breaking drought in California was ended abruptly on January 29 when a violent storm hit the central part of the State. Precipitation ranged from less than half an inch in Los Angeles to more than 27 inches in the Sierra National Forest. Several mountain stations reported storm totals in excess of those in the big floods of 1950 and 1955. Many highways and railroads were blocked by flood waters and mud slides. Record-breaking stages occurred at many gaging stations in the northern Sierras. These floods continued into February. Flooding reported elsewhere was mostly minor.

ST. LAWRENCE DRAINAGE

Lake Erie. --Prolonged cold weather in the Lake Erie Drainage had frozen the ground to a depth of around 48 inches by the end of January. The snow on the ground averaged from 5 to 8 inches over the watershed with a water equivalent of 0.60 to 0.90 inch. This is the eighth consecutive month with the precipitation total below normal.

ATLANTIC SLOPE DRAINAGE

The snow cover in the Lehigh River Basin on January 31 averaged 14 inches above Blue Mountain and ranged from 11 inches at Walnutport, Pa., to 5 inches at Allentown, Pa. In the Lackawaxen River Basin the snow cover ranged from 17 inches at Pleasant Mount to 9 inches at Hawley, Pa.

The snow cover over central and southern New Jersey at the end of the month ranged from 2 to 4 inches and over northern New Jersey, from 6 to over 10 inches. The ice was thick on all streams.

Rainfall on the 12th caused sufficient runoff and movement of ice on the West Branch of the Juniata in Pennsylvania to cause minor local flooding from ice jams in the Amity Hall area. Streams remained frozen over throughout the remainder of the month, with ice thickness ranging from 10 to over 15 inches. Snow cover at the end of the month averaged 11 inches over the basin, with an average density of approximately 22 percent.

Moderate rises began in the upper James Basin on the 12th and increased to near bankfull stage below Scottsville, Va., on the 13th and 14th. The only station to exceed flood stage was Richmond, Va., at the Westham Bridge site. The runoff which caused this rise came entirely from snowmelt in the upper James and upper Rivanna Basins. Precipitation was negligible. A warming temperature trend began about the 9th, which brought daytime temperatures to the upper 40's and low 50's on the 11th and 12th. No damage resulted.

The minor flooding on the Tar, Neuse, and Cape Fear Rivers in eastern North Carolina was due to rainfall averaging 2.5 inches from the 18th to the 20th. No damage was reported.

Minor flooding occurred on streams in the Pee Dee Basin in South Carolina between the 20th and the 30th. This flooding was due to rainfall that began on the afternoon of the 17th and continued through the early morning of the 21st. Accumulated amounts accounted for about two-thirds of the January totals, with 3 to 5.5 inches over the middle and lower portions. The Rocky River at Norwood, N. C., was out of its banks for 2 days, cresting on the 20th, 4 feet above flood stage. The upper Pee Dee River at Cheraw, S. C., crested close to flood stage on the 22d. Downstream at Peedee, S. C., this stream was out of its banks on 9 days, cresting on the 26th about 2.5 feet over the low banks. The Lynches River at Effingham, S. C., was in flood from the 26th to the 28th and crested about 1 foot over flood stage on the 27th.

Rains over the upper reaches of the Santee System in South Carolina from the 18th through the 21st caused flooding along the Saluda and Broad Rivers beginning on the 20th. Rainfall amounts ranged up to 4 inches. Due to the nature of the flood plains along the Saluda and the Broad, flooding and damage were not extensive. There was considerable lowland flooding along the Congaree and the Wateree with considerable damage to pastures and some interruption of lumbering operations.

Shallow flooding occurred on the North Fork of the Edisto River at Orangeburg, S. C., from the 20th to the 26th. Flooding along the main stem of the Edisto began at Givhans, S. C., on the 23d and was still in progress at the end of the month. No damage or loss resulted from these minor floods, but some inconvenience was experienced along the entire Edisto with low camp sites and approach roads flooded.

The flooding on streams in Georgia was due to heavy rainfall from the 18th to the 25th. Rainfall amounts ranging up to near 2.5 inches in a few places were reported throughout the watershed of the Savannah and Ogeechee Rivers during that period. In the Ocmulgee, Oconee, and Altamaha River Basins, the rainfall averaged 5.7 inches per station. The heaviest amount reported was 8.78 inches at Juliette. Most of the rain fell in the periods from the 12th to the 13th and from the 18th to the 21st. There wasn't any report of any serious flood damage from the high water.

EAST GULF OF MEXICO DRAINAGE

Heavy rain during the period from the 17th to the 20th caused flooding on the Flint River at Albany, Ga., and on the Apalachicola River at Blountstown, Fla. Rainfall during that period ranged from less than 3 inches over the Apalachicola to 6 inches over the other basins. Little or no damage resulted along the Flint River at Albany, Ga., as commercial buildings in low-lying areas are protected by dikes up to 25 feet. No damage occurred along the Apalachicola River at Blountstown, Fla., as the inundated portions were exclusively forest or lumbering areas. However, some work interruptions were caused during the period of high water to lumbering interests, though no real losses from idle labor occurred as they were transferred for work on higher ground.

Minor flooding occurred on the Pearl River at Monticello, Miss., and Bogalusa, La., between the 20th and 26th, due to moderate precipitation between the 18th and 21st. The high water was due mainly to local runoff and flood stages were only momentary and caused no damage.

MISSISSIPPI SYSTEM

Upper Mississippi Basin. --Precipitation was below to much below normal ranging from 1/4 inch in northern Minnesota to 1/2 to 3/4 inch in northeast Iowa and Wisconsin. The observed precipitation was only 40 to 60 percent of normal. January's temperatures averaged from 6° to 13° below normal, with most of the area having

daily minimum temperatures 0°F or colder from January 11 through the 31st. On numerous days temperatures were recorded as low as -30°F to -47°F in parts of the basin. Snowfall was light but what fell was heaviest on the 11-12th, just as the extended cold set in, and helped prevent frost from going deeper than it did.

A comparison of snow depths in the Upper Mississippi Basin on January 31 with that of other years is given in the following table:

COMPARATIVE SNOW DEPTHS (INCHES)

Station	1963	1962	1961	1960	1959	1958	1957	1956	1955
(Minnesota)									
Bemidji	2	13	4	8	8	5	11	26	8
International Falls	4	16	11	8	20	8	11	22	15
Duluth	6	15	9	16	11	11	14	29	17
Alexandria	2	9	0	5	0	5	2	16	6
New Ulm	4	2	T	1	2	3	T	6	4
Minneapolis	4	6	2	2	0	2	2	11	6
Rochester	6	3	T	2	3	2	1	10	3
(Wisconsin)									
Park Falls	10	19	2	14	12	12	13	21	17
Wausau	6	9	T	4	6	5	7	12	--
Portage	9	7	1	2	10	4	4	2	--

Floating ice appeared on the Mississippi at Cape Girardeau, Mo., on the 15th. It became gorged on the 26th above and below that point. There was floating ice in the Mississippi at Cairo, Ill., from the 14th until it became gorged on the 23d at Angelo Towhead about 4 miles above Cairo Point. This gorge remained intact until February 7 and at one time extended upstream to slightly below Cape Girardeau, Mo. Boats were unable to penetrate this gorge and about 400 barges remained tied up in the Cairo Harbor. On February 7 the gorge broke and a large portion of ice moved out, but another gorge formed about 14 miles above Cairo Point on the night of February 7 and continued until the afternoon of February 9, when it broke and moved out. Navigation was resumed on February 10.

Missouri Basin.--River drainages in South Dakota were covered with snow to depths varying from 2 to 6 inches. The heavier snow cover was in eastern South Dakota and western Iowa and extended over most of the Big Sioux Drainage. All streams were frozen over.

Monthly precipitation totals in the Kansas and Marais Des Cygnes River Basins in Kansas during January ranged from 1/2 to 3/4 inch. Snowfall was well distributed and ranged from 4 to 8 inches. Ice conditions became widespread about the 10th, with most streams becoming frozen. Ice depths of 12 to 14 inches were reported on the Kansas River at Wamego and Topeka, Kans., near the end of the month and from 4 to 5 inches on ponds and streams in north-central Kansas. Soil was generally frozen to depths of 18 to 20 inches at the close of the period.

The Missouri River at Nebraska City, Nebr., and small streams in northwestern Missouri were frozen over most of the month. Variable ice cover was reported by downstream stations on the Missouri.

Ohio Basin.--Severely cold weather during the last half of the month caused most of the tributaries and the Ohio River above Gallipolis Dam, W. Va., to freeze over. Record-low temperatures spread over virtually all of the Ohio watershed late on the 23d, with minimum temperature readings of -20° or below common over most of the watershed by the morning of the 24th. Shore ice started forming on the pools in the Ohio River by the 24th, with enough ice to begin to impede navigation by the 26th. Most dams showed solid cover of layered running ice, average depth of 3 inches, by the morning of the 28th. As additional ice accumulated, the ice became layered, with navigation suspended except for local trips behind improvised ice cutters. The ice on the Ohio seriously interfered with the operation of locks and dams and with navigation, especially above the mouth of the Tennessee River.

Red Basin.--Minor flooding occurred on the Sulphur River at Naples, Tex., from the 10th to the 13th. The rains that produced this flood fell during the 4-5th, with an average of about 1.2 inches. The largest 24-hour total reported was 1.65 inches at Cooper, Tex. Little or no damage is known to have occurred.

WEST GULF OF MEXICO DRAINAGE

The Minor flooding on the Calcasieu River at Hineston, La., in the beginning of the month was due to heavy rains on December 28 and 29. General rains from the 17th through the 20th caused another rise on the Calcasieu to within 1 foot of flood stage by the 23d at Hineston in the extreme upper portion. Downstream at Oakdale, it rose 4 feet to 0.8 foot above bankfull by the 21st. Further downstream at Kinder, La., it rose 13 feet between the 17th and 22d to exactly flood stage.

Great Basin.--The heavy storm of January 31 - February 1 resulted in minor flooding in streams in Utah and Nevada. Precipitation at Deer Creek Dam, Utah, reported 24-hour and 48-hour precipitation amounts which exceeded all previous 24- and 48-hour amounts for any month of the year for Utah. The 24-hour amount was 5.08 and the 48-hour amount was 8.88 inches. The depth of frost in the Salt Lake Valley exceeded 20 inches. This was less than a year ago, but the major difference was in the moisture content of the ground before the freezing

occurred. The most extensive damage from the flooding was in Utah County, where raging waters cut Provo City water lines in the South Fork of Provo Canyon above Vivian Park.

In Nevada, the Truckee, Susan, Carson, and Walker Rivers rose to flood stage near midnight on January 31, so most of the flooding occurred during February. There was extensive damage in the downtown sections of Reno and considerable damage in many residential sections. The Truckee River cut Derby Dam about 20 miles downstream from Reno, and took out the approach to the Southern Pacific Railroad Bridge about 25 miles downstream from Reno. The Susan River caused damage to U. S. Highway 395 in the vicinity of Susanville, Calif. Piute Creek in Susanville caused some flooding in the town of Susanville. Flooding along the Carson and Walker Rivers was confined mostly to agricultural lands. The Carson River caused some damage to the approaches to the Cradlebaugh Bridge on U. S. 395 between Carson City and Minden, Nevada.

PACIFIC SLOPE DRAINAGE

California Coast Drainage Basins. --A 23-mile stretch along the North Fork of the Kern River in California above Isabella Dam was subject to flooding on January 31 and February 1. Several levies along the river banks were broken, allowing the waters to flow into those areas which were situated below the high water level of the Kern River. Heavy rains on the 30th and 31st caused two peak inflows into the dam. One was estimated at 28,000 c.f.s. at 7 p.m. on the 31st and the second estimated 30,000 c.f.s. at 11:00 a.m. on the 1st of February. Rainfall was unusually heavy in spots with Johnsondale, Calif., receiving 14.67 inches during the storm and Kern River Intake No. 3, 9.02 inches, with lesser amounts further down the Canyon. Considerable damage resulted to roads, a diversion dam, and state fish hatchery tanks. The water and debris spread over the golf course into low-lying trailer parks and into a few houses situated directly on the river bank in the Kernville, Calif., area.

Heavy rains in the Sierras to high elevations during the period January 30 through February 1 caused flooding along the Merced, Chowchilla, Fresno, and Kaweah Rivers in California. Several mountain stations reported storm totals in excess of those in the big floods of 1950 and 1955. Incomplete storm totals showed that Westfall Ranger Station, in the Sierra National Forest, received 27.15 inches of precipitation, South Entrance 22.93, Giant Forest 21.34, Crane Valley 18.84, Jerseydale 18.75, Grant Grove 17.17, Balch Power House 13.68, and Ash Mountain 11.95 inches. The rain extended at least to the 8,000-foot level during most of the storm. Antecedent conditions over the mountains, however, were entirely different from the 1950 and 1955 floods, as the slopes were completely dry with no snow before the arrival of this storm; consequently, the runoff was considerably less than in the record floods. An estimate of flood damage for the area from the Merced River to the Tule River is about $50,000.

The second longest midwinter drought period in the central valley and coastal areas of California ended abruptly by the heavy rains during the last several days of the month. Little or no rain had fallen during the prolonged record-breaking drought of 42 days. The heavy rains began during the afternoon of January 29 and ended by the morning of February 2. The rainfall amounts were heavy and ranged from 7 to 10 inches in the Russian Basin, 6 to 10 inches in the Napa Basin, 3 to 8 inches in the Pajara Basin, and 2 1/2 to 8 inches in the Salinas Basin. The Indian Guard Station in the Santa Lucia Range in the Salinas River Basin and Boulder Creek reported 22 inches or more. Sacramento set a new 24-hour record with 1.70 inches during the 24-hour period on the 30th. By the month's end all streams in the Sacramento area were rising, but no flood stages were reached. Overflow occurred at all Sacramento Flood Control Project Weirs and a record-breaking flow down the Yuba River during the first part of February. The heavy rains and resulting runoffs caused quite a number of minor streams and creeks and two of the four major rivers in the coastal areas to overflow their banks. The smaller streams caused minor lowland flooding in portions of the towns of Santa Cruz, San Jose, Gilroy, Morgan Hill, Ben Lomond, Ross, and Alviso. Evacuation of some homes was made necessary by the floods. The two major rivers which overflowed were the Russian River at Guerneville and the Napa River at Napa. Damage along the Russian River was minor and chiefly to roads and resort buildings along the banks of the river and tributary creeks in Guerneville and surrounding area. About 40 homes along the Napa River were evacuated. Some agricultural lowlands from Napa northward to near St. Helena were inundated and several bridges were temporarily closed.

Columbia Basin.--Moderate to heavy rain with warming temperatures on the 31st, following 3 to 6 inches of snow on the 29th and 30th, throughout the valleys of southern Idaho over well-frozen ground and streams set the stage for rapid runoff and the flooding that began on the 31st in many local areas. Upper Portneuf River flooded in Caribou County and eastern Bannock County. Bancroft was inundated by 3 to 5 feet of water and residents evacuated their houses during the night. McCammon and Lava Hot Springs on the Portneuf were flooded during the night of the 31st. Sucker Creek, just across the line in Oregon, flowing out of the Mahogany Mountains, flooded during the night of the 31st. A highway bridge was washed out morooning a 7-member family.

Light precipitation and cold temperatures combined to keep streams in the lower Columbia Basin at very low levels. The Yakima River and many smaller streams became frozen over in various parts of their reaches by the end of the month. The mean January stage of the Willamette River at Portland was 3.5 feet or 2.6 feet below the 84-year normal.

FLOOD STAGE DATA

(All dates in January unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Ft.*			*Ft.*	
James: Richmond, Va. (Westham)	12	14	15	12.1	14
Tar: Greenville, N. C.	13	25	27	13.3	26
Neuse: Neuse, N. C.	14	22	22	14.3	22
Smithfield, N. C.	13	21	25	17.7	22
Goldsboro, N. C.	14	21	30	19.4	27
Kinston, N. C.	14	23	1/	16.9	29
Cape Fear: Fayetteville, N. C.	35	22	22	35.1	22
Lock No. 2, Elizabethtown, N. C.	20	21	25	28.3	23
Rocky: Norwood, N. C.	16	20	21	E20.0	20
Lynches: Effingham, S. C.	14	26	28	E15.1	27
PeeDee: Peedee, S. C.	19	22	30	E21.3	26
Saluda: Pelzer, S. C.	6	20	21	7.0	21
Broad: Blair, S. C.	14	20	22	17.9	21
North Fork Edisto: Orangeburg,S.C.	8	20	26	E 9.2	22
Edisto: Givhans, S. C.	10	23	1/	E11.8	29
Savannah: Clyo, Ga.	11	25	31	13.4	31
Ogeechee: Midville, Ga.	6	24	27	7.35	25
Dover, Ga.	7	27	31	8.8	30
Ocmulgee: Macon, Ga.	18	20	22	22.6	21
Hawkinsville, Ga.	25	24	25	26.1	25
Abbeville, Ga.	12	25	31	15.8	27
Lumber City, Ga.	15	31	31	15.2	31

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE (Cont'd.)	*Ft.*			*Ft.*	
Oconee: Milledgeville, Ga.	20	21	22	30.1	21
		24	24	20.6	24
Dublin, Ga.	21	24	27	23.0	25
Mount Vernon, Ga.	16	26	31	18.4	28,29
Altamaha: Charlotte, Ga.	15	29	31	18.4	31
EAST GULF OF MEXICO DRAINAGE					
Flint: Albany, Ga.	20	26	28	22.0	27
Apalachicola: Blountstown, Fla.	15	21	31	20.5	25
Choctawatchee: Caryville, Fla.	12	23	25	13.0	24
Cahaba: Centreville, Ala.	23	20	21	23.9	20
Pearl: Monticello, Miss.	19	20	22	20.7	21
Bogalusa, La.	15	21	26	18.2	24
MISSISSIPPI SYSTEM					
Red Basin					
Sulphur: Naples, Tex.	22	10	13	23.5	11
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Hineston, La.	12	Dec. 31	3	13.05	1
Kinder, La.	16	22	22	16.0	22
PACIFIC SLOPE DRAINAGE					
Russian: Guerneville, Calif.	29	31	Feb. 2	40.5	Feb. 1
Healdsburg, Calif.	19	31	Feb. 1	20.0	Feb. 1

*Provisional
E Estimated
1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

Columns: Standard pressure surface (mb); Number of observations; Dynamic height; Temperature; Relative humidity; Wind: Direction, Speed

ALBANY, N. Y. 1007 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	- 9.1	75	249	2.1
1000	31	141			257	3.5
950	31	541	- 8.0	66	274	7.2
900	31	959	- 9.7	70	283	13.2
850	31	1,400	-10.8	72	275	16.7
800	31	1,867	-10.8	63	267	22.5
750	31	2,364	-11.8	53	265	28.0
700	31	2,890	-13.5	51	252	32.3
650	31	3,451	-16.1	50	261	36.1
600	31	4,050	-19.7	51	259	39.2
550	31	4,689	-23.7	51	259	42.2
500	31	5,382	-28.2	48	259	46.4
450	31	6,124	-33.0	43	260	52.3
400	31	6,950	-38.4		262	57.[illegible]
350	31	7,857	-44.4		263	60.6
300	31	8,877	-50.4		265	62.4
250	30	10,055	-55.7		267	60.6
200	29	11,471	-56.4		258	57.1
175	29	12,321	-55.1		269	55.6
150	29	13,306	-55.4		266	51.5
125	29	14,467	-56.5		264	49.2
100	29	15,881	-57.1		262	49.2
80	29	17,293	-56.5		260	42.9
70	29	18,147	-55.3		259	44.4
60	29	19,126	-55.1		259	44.1
50	29	20,296	-53.6		253	40.0
40	28	21,734	-51.4		254	41.8
30	27	23,613	-48.4		252	45.1
25	25	24,808	-46.6		251	47.8
20	23	26,294	-44.7		256	51.5
15	17	28,211	-41.5			
10	5	31,153	-35.1			

ALBUQUERQUE, N. MEX. 838 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	- 5.3	65	347	2.1
1000	31	212				
950	31	620				
900	31	1,052				
850	31	1,510				
800	31	1,991	- 2.4	43	295	9.1
750	31	2,500	- 3.7	44	290	15.5
700	31	3,045	- 5.7	41	294	20.8
650	31	3,620	- 8.5	40	286	25.1
600	31	4,240	-11.8	37	284	29.9
550	31	4,896	-15.6		282	33.0
500	31	5,615	-19.9		284	35.2
450	30	6,378	-25.5		279	36.7
400	30	7,232	-31.5		283	37.5
350	30	8,164	-38.3		284	38.7
300	30	9,208	-45.8		278	46.6
250	30	10,399	-54.0		275	56.9
200	30	11,813	-58.5		274	63.7
175	30	12,651	-59.[illegible]		273	66.5
150	30	13,614	-60.7		274	62.2
125	30	14,745	-62.6		275	56.7
100	30	16,110	-65.9		275	53.4
80	30	17,465	-65.9		278	47.4
70	30	18,279	-64.8		277	41.8
60	30	19,223	-63.7		279	35.6
50	27	20,355	-60.5		279	29.7
40	24	21,750	-58.[illegible]		271	30.7
30	22	23,581	-54.5		263	42.7
25	21	24,751	-52.3		264	47.0
20	19	26,198	-51.5		253	56.7
15	13	28,008	-50.8			

AMARILLO, TEXAS 892 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	- 7.8	54	294	4.3
1000	31	192				
950	31	597				
900	31	1,025				
850	31	1,470	- 1.8	33	293	12.8
800	31	1,953	- .9	45	297	16.7
750	31	2,465	- 1.6	34	287	18.7
700	31	3,015	- 4.0	31	285	21.6
650	31	3,592	- 7.0		28[illegible]	25.6
600	31	4,216	-10.5		276	27.5
550	31	4,875	-14.7		277	33.6
500	31	5,596	-19.6		277	35.6
450	31	6,361	-25.2		275	38.3
400	31	7,215	-31.6		274	42.2
350	31	8,146	-38.5		273	46.2
300	31	9,188	-46.1		274	51.3
250	31	10,377	-54.2		275	57.5
200	29	11,796	-58.9		274	64.3
175	28	12,639	-59.7		274	64.1
150	28	13,604	-60.3		274	64.7
125	27	14,737	-62.8		273	61.4
100	26	16,104	-64.8		274	59.5
80	26	17,464	-65.1		273	58.1
70	25	18,282	-64.4		274	56.0
60	22	19,222	-62.7		277	52.8
50	20	20,357	-60.9		277	48.6
40	19	21,762	-57.4		275	48.6
30	18	23,600	-53.1		274	49.2
25	17	24,778	-51.2		273	48.8
20	16	26,222	-51.1		272	49.0
15	9	28,071	-50.8			

ANCHORAGE, ALASKA 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	24	- 7.2	78		.0
1000	31	158			[illegible]	[illegible]
950	31	564	- 2.6	[illegible]	41	2.7
900	31	992	- 2.9	61	118	2.9
850	31	1,444	- 3.8	57	[illegible]	5.1
800	31	1,922	[illegible]	[illegible]	[illegible]	[illegible]
750	31	2,426	- 7.4	[illegible]	[illegible]	10.9
700	31	2,962	[illegible]	[illegible]	[illegible]	12.4
650	31	3,526	-12.7	45	[illegible]	[illegible]
600	31	4,138	-16.2	[illegible]	[illegible]	[illegible]
550	31	4,782	[illegible]	44	[illegible]	15.3
500	31	5,488	-24.7	[illegible]	245	[illegible]
450	31	6,237	[illegible]		[illegible]	[illegible]
400	31	7,076	[illegible]	[illegible]	[illegible]	[illegible]
350	31	7,991	[illegible]		[illegible]	[illegible]
300	31	9,017	-49.7		[illegible]	30.5
250	31	10,191	-56.6		[illegible]	[illegible]
200	31	11,585	[illegible]		[illegible]	[illegible]
175	31	12,407	[illegible]		[illegible]	[illegible]
150	30	[illegible]	-61.1		[illegible]	[illegible]
125	30	14,486	-61.7		[illegible]	[illegible]
100	30	[illegible]	-63.0		[illegible]	[illegible]
80	30	[illegible]	[illegible]		[illegible]	[illegible]
70	30	18,045	[illegible]		[illegible]	[illegible]
60	30	18,977	-66.8		[illegible]	47.0
50	[illegible]	20,084	-67.1		311	48.2
40	19	21,447	-67.1		[illegible]	51.9
30	15	23,193	[illegible]		[illegible]	57.1
25	13	24,330	-62.1		[illegible]	[illegible]
20	11	[illegible]	-59.4			
15	7	27,643	-54.4			

ANNETTE, ALASKA [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	37	[illegible]	[illegible]	[illegible]	[illegible]
1000	[illegible]	191	[illegible]	[illegible]		[illegible]
950	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
900	[illegible]	1,035	[illegible]	[illegible]	[illegible]	[illegible]
850	[illegible]	1,490	[illegible]	[illegible]	[illegible]	[illegible]
800	[illegible]	1,970	- 4.[illegible]	[illegible]	[illegible]	[illegible]
750	31	2,474	[illegible]	[illegible]	[illegible]	[illegible]
700	[illegible]	3,012	- 9.4	[illegible]	[illegible]	[illegible]
650	[illegible]	3,578	[illegible]	[illegible]	[illegible]	[illegible]
600	31	4,191	[illegible]	[illegible]	[illegible]	[illegible]
550	[illegible]	4,837	[illegible]	[illegible]	[illegible]	[illegible]
500	[illegible]	5,545	[illegible]	[illegible]	[illegible]	[illegible]
450	[illegible]	6,300	[illegible]	[illegible]	[illegible]	[illegible]
400	31	7,137	[illegible]	[illegible]	[illegible]	[illegible]
350	[illegible]	8,053	[illegible]		[illegible]	[illegible]
300	31	9,077	[illegible]		[illegible]	[illegible]
250	[illegible]	10,243	[illegible]		[illegible]	[illegible]
200	[illegible]	11,616	[illegible]		[illegible]	[illegible]
175	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
150	28	[illegible]	[illegible]		[illegible]	[illegible]
125	28	14,480	[illegible]		[illegible]	[illegible]
100	[illegible]	15,837	[illegible]		[illegible]	[illegible]
80	[illegible]	17,182	[illegible]		[illegible]	[illegible]
70	[illegible]	17,986	[illegible]		[illegible]	[illegible]
60	[illegible]	18,901	[illegible]		[illegible]	[illegible]
50	21	19,988	[illegible]		[illegible]	[illegible]
40	[illegible]	21,328	[illegible]			
30	11	23,062	[illegible]			
25	7	24,148	[illegible]			
20	[illegible]	25,539	[illegible]			

ATHENS, GA. 992 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	- .4	82	317	3.5
1000	31	176				
950	31	594	2.9	62	269	5.2
900	31	1,028	2.9	59	272	12.0
850	31	1,491	2.0	53	278	15.9
800	31	1,980	.6	50	270	19.8
750	31	2,499	- 1.2	47	269	26.6
700	31	3,045	- 3.5	44	258	30.7
650	31	3,625	- 6.3	36	265	37.5
600	31	4,250	- 9.6		264	46.8
550	31	4,913	-13.4		254	50.7
500	31	5,637	-17.8		263	55.0
450	30	6,410	-23.4		264	61.8
400	30	7,268	-29.7		262	71.3
350	30	8,207	-36.6		262	79.5
300	30	9,257	-44.6		262	88.8
250	30	10,454	-53.2		265	98.1
200	30	11,868	-59.3		263	89.6
175	30	12,704	-59.7		266	92.9
150	30	13,665	-61.1		267	84.9
125	28	14,787	-63.2		268	76.0
100	28	16,153	-64.9		267	63.5
80	26	17,517	-64.7		267	51.9
70	25	18,343	-62.7		254	42.2
60	25	19,289	-60.8		264	32.6
50	25	20,430	-58.1		262	27.2
40	25	21,847	-55.2		259	21.2
30	25	23,697	-51.9		251	13.4
25	24	24,888	-49.8		242	9.5
20	21	26,363	-47.6		246	10.5
15	13	28,273	-46.7			
10						

BARROW, ALASKA 1026 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-22.9	63	92	5.2
1000	31	195	-21.1	64	113	6.2
950	31	583	-14.9	62	122	5.4
900	31	990	-13.0	61	169	1.0
850	31	1,425	-13.4	57	267	2.7
800	31	1,886	-14.4	55	284	5.3
750	31	2,375	-16.4	54	281	10.1
700	31	2,891	-18.7	50	282	13.8
650	31	3,439	-21.3	44	280	18.1
600	31	4,029	-24.3	42	280	21.8
550	31	4,656	-28.1	40	281	24.5
500	31	5,337	-32.4		256	28.8
450	31	6,068	-37.4		288	35.6
400	31	6,878	-43.0		288	41.0
350	31	7,765	-49.3		288	45.5
300	31	8,760	-55.5		285	50.5
250	31	9,907	-60.9		284	56.7
200	31	11,285	-63.3		284	54.0
175	31	12,105	-62.9		285	53.6
150	29	13,036	-63.4		287	50.1
125	29	14,154	-64.1		288	51.3
100	28	15,514	-65.5		292	57.3
80	23	16,884	-67.1		298	54.8
70	22	17,705	-67.6		303	57.9
60	16	18,681	-67.4		310	63.0
50	13	19,854	-66.7		318	70.5
40	11	21,232	-65.5		325	76.9
30	6	23,250	-55.0			
25	6	24,422	-52.1			

BARTER IS., ALASKA 1026 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	-23.5	58	113	1.4
1000	31	201	-21.8	60	110	3.[illegible]
950	31	587	-16.8	59	260	2.9
900	31	990	-15.5	60	280	8.0
850	31	1,422	-15.7	59	289	12.8
800	31	1,879	-16.5	56	297	14.2
750	31	2,365	-17.8	51	308	17.1
700	31	2,878	-19.9	48	313	18.1
650	31	3,422	-22.6	44	313	22.7
600	31	4,009	-25.6	45	311	27.6
550	31	4,632	-29.3		312	31.9
500	31	5,311	-33.6		311	37.3
450	31	6,036	-38.6		[illegible]	45.1
400	31	6,843	-44.2		306	42.7
350	31	7,728	-49.7		303	47.0
300	31	[illegible].724	-55.5		302	60.4
250	31	9,871	-60.9		300	61.4
200	31	11,247	-63.5		297	56.2
175	30	12,065	-63.[illegible]		297	57.1
150	30	13,008	-64.5		297	58.1
125	30	14,118	-66.0		301	62.6
100	29	15,464	-68.2		301	64.9
80	27	16,818	-69.8		302	68.6
70	25	17,593	-70.6		303	68.2
60	22	18,542	-70.6		305	72.3
50	17	19,667	-70.4			
40	11	21,112	-65.[illegible]			
30	7	23,055	-56.7			
25	5	24,290	-48.[illegible]			

BETHEL, ALASKA 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	- 7.3	77	54	5.6
1000	31	116	- 4.4	72	71	6.5
950	31	522	- 2.2	64	118	13.6
900	31	[illegible]	- 3.6	61	138	12.[illegible]
850	31	1,405	- 3.8	[illegible]	152	13.9
800	31	1,882	- 5.6	57	157	[illegible]
750	31	2,384	- 7.[illegible]	[illegible]	157	11.1
700	31	2,921	-10.6	50	164	12.2
650	31	3,482	-13.9	48	167	12.6
600	31	4,091	-17.8	45	171	15.2
550	31	4,733	-21.7	47	[illegible]	13.4
500	31	5,434	-26.2	46	185	15.3
450	31	6,181	-31.5	44	186	17.1
400	31	7,012	-37.3		194	16.8
350	31	[illegible]	[illegible]		205	19.2
300	31	[illegible]	-49.3		220	21.[illegible]
250	31	10,125	-55.0		211	21.8
200	31	11,536	-58.4		220	[illegible]
175	31	12,378	-58.2		233	24.9
150	31	13,348	-57.3		244	25.5
125	31	14,500	-57.7		255	25.8
100	31	15,903	-59.0		266	29.1
80	31	17,287	-60.5		278	30.7
70	31	18,123	-61.2		288	34.6
60	30	19,083	-62.1		295	39.2
50	29	20,208	-62.7		303	41.8
40	27	21,583	-63.		311	49.2
30	24	23,337	-63.4		[illegible]	[illegible]
25	21	24,432	-63.[illegible]		[illegible]	[illegible]
20	16	25,846	-61.7		[illegible]	58.6
15	8	27,952	-53.6			

BISMARCK, N. DAK. [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	-18.4	62	305	4.5
1000	31	185				
950	31	575			306	8.4
900	31	979	-15.9	[illegible]	315	21.0
850	31	1,411	-15.4	[illegible]	315	25.1
800	31	1,869	-16.0	[illegible]	313	[illegible]
750	31	2,351	-17.6	[illegible]	309	[illegible]
700	31	2,869	-19.8	44	306	31.9
650	31	3,412	-22.2	44	305	36.[illegible]
600	31	4,002	-24.7	[illegible]	302	44.1
550	31	4,625	-27.8	[illegible]	301	47.[illegible]
500	31	5,312	-32.3		[illegible]	50.5
450	31	6,042	-37.2		296	52.7
400	31	6,854	-42.9		[illegible]	58.1
350	31	7,744	-48.8		290	61.8
300	31	8,744	-54.1		291	63.0
250	31	9,903	-57.6		291	69.8
200	31	11,307	-58.9		285	67.6
175	30	12,152	-58.6		284	66.8
150	29	13,124	-58.7		282	66.3
125	28	14,275	-59.8		281	62.0
100	27	15,668	-61.0		281	64.9
80	27	17,051	-62.1		280	63.0
70	26	17,880	-62.0		278	63.5
60	25	18,852	-62.0		277	61.6
50	24	19,994	-61.0		274	59.1
40	22	21,416	-57.9		273	65.7
30	16	23,282	-52.5		271	72.7
25	14	24,481	-49.6			
20	11	25,924	[illegible]			
15	7	27,905	[illegible]			
10	5	[illegible]	[illegible]			

BOISE, IDAHO 923 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	- 7.0	72	151	2.5
1000	31	234				
950	31	640				
900	31	1,063	- 5.8	60		.0
850	31	1,512	- 5.1	57	305	4.7
800	31	1,987	- 6.0	53	309	12.0
750	31	2,491	- 7.3	55	307	15.7
700	31	3,027	- 9.5	52	312	20.2
650	31	3,598	-12.2	52	313	23.7
600	31	4,205	-15.3	47	318	27.0
550	31	4,856	-19.2	43	318	31.5
500	31	5,561	-23.6		321	36.1
450	31	6,321	-28.9		318	41.2
400	31	7,157	-35.1		319	44.5
350	31	8,075	-41.7		326	47.4
300	31	9,103	-49.1		330	49.0
250	30	10,278	-57.0		330	49.0
200	30	11,665	-63.6		329	48.4
175	30	12,483	-63.3		320	47.0
150	30	13,433	-62.4		314	45.7
125	28	14,547	-62.7		311	44.9
100	27	15,916	-64.0		305	48.4
80	27	17,280	-65.0		301	45.3
70	27	18,098	-65.6		299	46.0
60	26	19,034	-65.6		295	47.2
50	24	20,164	-65.5		294	47.6
40	22	21,511	-64.7		289	49.9
30	19	23,295	-62.8		278	56.9
25	17	24,432	-60.3		271	60.6
20	12	25,888	-56.4		259	67.0
15	9	27,733	-52.5			
10						
7						
5						

BROWNSVILLE, TEXAS 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	9.9	84	318	5.8
1000	31	161	11.3	80	342	7.8
950	31	590	11.4	79	66	1.2
900	31	1,041	11.4	69	175	3.5
850	30	1,518	10.8	57	249	9.5
800	30	2,023	9.8	53	259	13.4
750	30	2,554	7.9	44	246	17.1
700	30	3,124	4.9	42	258	20.2
650	30	3,718	.7	49	265	24.7
600	30	4,363	- 3.6	46	262	28.4
550	30	5,038	- 7.8	39	263	33.2
500	30	5,783	-11.6		263	40.6
450	30	6,575	-17.1	39	263	45.7
400	30	7,457	-23.4	41	261	51.1
350	30	8,421	-30.3		262	58.7
300	30	9,499	-38.6		264	64.9
250	30	10,726	-48.1		265	73.8
200	30	12,163	-57.8		266	79.7
175	30	12,997	-61.4		262	74.8
150	30	13,946	-64.8		265	72.3
125	30	15,046	-69.4		254	66.5
100	28	16,365	-73.0		260	50.5
80	26	17,672	-72.9		264	35.4
70	24	18,471	-71.1		264	25.8
60	24	19,384	-66.9		260	14.6
50	23	20,495	-62.6		256	9.9
40	22	21,885	-58.7		255	4.5
30	19	23,703	-54.9		76	7.0
25	19	24,870	-54.0		84	13.6
20	18	26,298	-53.0		82	15.3
15	15	28,153	-51.9		95	20.4
10	14	30,796	-45.8		110	21.2
7	8	33,203	-37.7			

BUFFALO, N. Y. 992 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	218	- 8.0	76	237	4.9
1000	30	151				
950	30	547	- 9.2	76	249	13.0
900	30	966	-10.2	78	254	17.7
850	30	1,406	-11.0	77	257	19.8
800	30	1,871	-11.8	70	265	24.1
750	30	2,364	-13.[illegible]	62	267	28.0
700	30	2,888	-15.[illegible]	59	266	31.1
650	30	3,440	-17.9	55	264	34.2
600	30	4,040	-20.7	51	261	37.5
550	30	4,678	-24.5	[illegible]	261	44.7
500	30	5,368	-28.9	48	261	47.6
450	30	6,111	-33.8	44	260	53.4
400	30	6,932	-39.[illegible]		262	57.9
350	30	7,835	-45.5		261	62.6
300	30	8,850	-51.2		263	67.0
250	30	10,023	-55.7		264	71.5
200	30	11,440	-56.[illegible]		264	66.5
175	30	12,290	-55.6		263	66.6
150	30	13,272	-56.1		267	62.6
125	29	14,436	-56.6		265	52.5
100	29	15,850	-57.2		265	54.2
80	29	17,262	-56.8		263	48.8
70	28	18,110	-57.2		259	47.4
60	28	19,082	-56.9		258	48.2
50	26	20,232	-55.1		258	45.5
40	25	21,674	-52.2		255	44.9
30	24	23,558	-48.9		257	44.7
25	24	24,757	-48.4		254	46.8
20	[illegible]	26,226	-47.6		254	62.4
15	20	28,143	-45.0		257	55.8
10	12	30,763	-45.0			

BURRWOOD, LA. 1021 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	3	10.4	88	47	7.0
1000	28	173	11.1	78	60	7.[illegible]
950	28	600	9.1	74	110	[illegible]
900	28	1,049	9.3	61	238	[illegible]
850	28	1,522	8.5	[illegible]	252	11.[illegible]
800	28	2,022	6.8	53	254	[illegible]
750	28	2,546	4.4	54	255	[illegible]
700	28	3,110	1.8	47	252	[illegible]
650	28	3,698	- 1.5	45	253	[illegible]
600	28	4,337	- 5.2		[illegible]	30.7
550	28	5,009	- 8.9		260	38.7
500	28	5,747	-13.4		[illegible]	46.8
450	28	6,537	-18.6		259	[illegible]
400	28	7,410	-24.6		259	[illegible]
350	28	8,367	-31.9		[illegible]	[illegible]
300	28	9,439	-39.9		262	[illegible]
250	28	10,657	-49.6		262	[illegible]
200	28	12,085	-58.3		265	[illegible]
175	28	12,918	-61.5		265	90.2
150	28	13,869	-63.2		265	84.1
125	27	14,980	-67.2		269	74.[illegible]
100	26	16,314	-70.3		264	60.8
80	26	17,640	-69.4		[illegible]	48.4
70	25	18,451	-67.5		255	31.[illegible]
60	25	19,376	-64.4		255	24.5
50	25	20,501	-60.2		250	16.[illegible]
40	23	21,904	-57.5		246	11.9
30	22	23,732	-53.9		134	4.5
25	22	24,906	-52.4		93	15.[illegible]
20	21	26,348	-50.4		[illegible]	17.[illegible]
15	20	28,225	-48.5		114	27.4
10	17	30,899	-43.9		117	46.[illegible]
7	12	33,247	-39.9			
5	6	35,607	-31.1			

CANTON IS., PACIFIC AREA 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]
1000	[illegible]	87	[illegible]	[illegible]		[illegible]
950	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
850	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
800	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
750	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
700	[illegible]	[illegible]	9.9		[illegible]	[illegible]
650	[illegible]	[illegible].742	7.2		[illegible]	[illegible]
600	[illegible]	4,402	[illegible]		[illegible]	[illegible]
550	[illegible]	[illegible]	- 1.1		[illegible]	[illegible]
500	[illegible]	[illegible].857	- 5.2		[illegible]	[illegible]
450	[illegible]	[illegible].675	-10.1		[illegible]	[illegible]
400	[illegible]	[illegible]	-16.1		[illegible]	[illegible]
350	[illegible]	[illegible].569	[illegible]		[illegible]	[illegible]
300	[illegible]	[illegible].681	-31.5		[illegible]	[illegible]
250	[illegible]	[illegible].945	[illegible]		[illegible]	[illegible]
200	[illegible]	12,418	-53.[illegible]		[illegible]	[illegible]
175	[illegible]	13,263	-60.4		[illegible]	[illegible]
150	[illegible]	14,207	-67.[illegible]		[illegible]	[illegible]
125	[illegible]	[illegible].281	-75.7		[illegible]	[illegible]
100	[illegible]	[illegible]	-82.8		[illegible]	[illegible]
80	[illegible]	[illegible].792	-80.2		[illegible]	[illegible]
70	[illegible]	18,[illegible]	-75.8		[illegible]	[illegible]
60	[illegible]	[illegible]	-71.[illegible]		[illegible]	[illegible]
50	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
30	[illegible]	23,690	[illegible]		[illegible]	[illegible]
25	[illegible]	24,844	[illegible]		[illegible]	[illegible]
20	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
15	[illegible]	28,175	-44.[illegible]		[illegible]	[illegible]
10	[illegible]	30,883	[illegible]		[illegible]	[illegible]
7	[illegible]	33,294	[illegible]		[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1963

CAPE HATTERAS, N. C.
1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SFC	31	4	4.1	82	354	5.1
1000	31	153	4.8	76	341	7.2
950	31	568	3.8	71	302	9.3
900	31	1,010	3.1	65	272	13.8
850	31	1,473	1.9	60	264	18.7
800	31	1,960	- .1	58	262	22.7
750	31	2,473	- 2.1	50	263	28.6
700	31	3,023	- 3.7	45	260	35.9
650	31	3,600	- 6.3	42	260	41.8
600	31	4,228	- 9.6	37	259	47.4
550	31	4,889	-14.1	37	258	50.3
500	31	5,612	-19.1	37	261	58.3
450	31	6,384	-24.1		261	63.5
400	31	7,234	-30.2		261	72.7
350	31	8,175	-37.0		264	79.1
300	31	9,224	-44.7		267	85.7
250	30	10,425	-52.8		270	93.3
200	30	11,845	-61.8		270	90.2
175	30	12,686	-58.3		270	82.6
150	30	13,654	-59.2		268	77.5
125	30	14,790	-61.5		265	65.5
100	30	16,167	-62.8		265	59.1
80	29	17,544	-61.8		262	39.1
70	28	18,383	-60.1		261	35.6
60	27	19,344	-58.4		257	25.3
50	27	20,464	-56.3		253	19.6
40	26	21,925	-52.8		231	14.6
30	24	23,799	-49.1		195	9.7
25	21	24,794	-48.2		160	13.4
20	18	25,947	-46.0		149	19.0
15	21	28,396	-43.8		138	29.1
10	21	31,143	-38.8		138	30.9
7	4	33,[illegible]	-36.9			
5						

CARIBOU, ME.
991 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	191	-12.2	83	285	4.5
31	121				
31	515	-10.6	73	278	7.4
31	931	-12.0	73	280	9.5
31	1,367	-13.3	75	275	12.2
31	1,828	-14.2	68	269	16.3
31	2,315	-15.2	56	264	21.6
31	2,837	-16.6	50	259	24.3
31	3,390	-18.9	49	252	29.7
31	3,985	-21.7	48	252	36.5
31	4,618	-25.4	49	252	42.9
31	5,308	-29.8	47	254	45.1
31	6,048	-34.6	48	252	51.5
31	6,866	-40.4		250	60.4
31	7,764	-46.4		252	65.1
31	8,773	-52.3		254	62.0
31	9,939	-55.9		253	60.1
30	11,355	-55.1		254	60.6
30	12,209	-54.2		256	55.4
30	13,198	-53.9		254	50.7
30	14,367	-54.2		251	52.1
29	15,[illegible]	-54.1		250	52.1
28	17,231	-54.0		250	51.3
28	18,067	-52.8		245	49.4
28	19,088	-51.7		241	45.5
28	20,273	-50.9		241	49.4
28	21,730	-49.7		239	46.6
28	23,617	-48.1		241	48.4
28	24,[illegible]	-46.5		244	47.6
26	26,301	-45.9		246	54.0
25	28,249	-43.6		243	50.3
21	30,679	-38.3		259	83.2
11	33,298	-33.3			
6	35,602	-30.0			

CHARLESTON, S. C.
1019 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	13	3.5	78	326	2.3
31	163	6.3	67	321	2.1
31	584	6.8	57	256	6.8
31	1,029	5.8	55	258	11.3
31	1,496	4.6	54	260	16.5
31	1,989	2.7	53	262	20.2
31	2,511	1.0	46	263	27.2
31	3,064	- 1.2	42	263	32.3
31	3,649	- 4.6	41	263	36.9
31	4,279	- 8.4	38	261	42.4
31	4,946	-12.7	38	263	46.2
31	5,671	-17.2		264	51.1
31	6,449	-22.6		266	56.2
31	7,309	-28.6		268	57.9
31	8,253	-35.4		269	69.4
31	9,309	-43.4		268	77.9
31	10,512	-52.2		272	87.2
31	11,932	-58.9		273	79.1
31	12,766	-60.0		272	79.5
31	13,725	-61.4		272	74.4
29	14,844	-64.0		271	62.6
28	16,210	-66.0		272	56.2
28	17,565	-65.6		271	39.4
28	18,293	-63.4		267	28.8
28	19,335	-60.9		269	22.0
28	20,474	-58.7		263	22.2
28	21,887	-55.4		254	14.0
27	23,741	-51.6		227	5.8
24	24,[illegible]	-49.8		198	6.8
20	26,499	-47.3		170	8.2
18	28,326	-43.7		180	8.5

COLD BAY, ALASKA
1004 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	30	1.0	88	135	10.1
31	58			134	6.0
31	472	- .4	75	120	17.9
31	901	- 1.8	72	125	21.8
30	1,359	- 2.5	62	125	16.3
30	1,839	- 4.3	56	137	15.2
30	2,346	- 6.3	47	161	11.3
30	2,884	- 9.0	43	160	15.0
30	3,452	-12.2	38	167	15.7
30	4,063	-15.6		158	26.2
30	4,711	-19.1		172	20.6
30	5,417	-24.0		190	22.9
30	6,170	-29.3		197	27.6
30	7,010	-35.4		196	34.0
30	7,925	-42.2		193	35.9
30	8,950	-49.7		190	43.1
30	10,125	-55.7		200	42.7
29	11,547	-57.7		196	36.5
27	12,390	-56.5		206	32.8
27	13,372	-55.5		210	28.8
27	14,533	-55.9		212	25.6
26	15,950	-56.8		226	20.8
26	17,356	-58.6		259	17.9
25	18,190	-59.3		258	19.0
23	19,151	-59.8		283	20.8
23	20,304	-60.3		289	29.9
22	21,688	-60.9		308	32.6
20	23,459	-61.6		325	40.0
19	24,590	-61.0		326	41.2
19	25,958	-61.4		315	47.2
16	27,753	-60.3		315	48.6
15	30,315	-56.8		298	57.9
10	32,646	-53.8			
6	34,946	-46.0			

COLUMBIA, MO.
991 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	238	- 9.5	77	324	1.2
31	169				
31	566	- 8.2	64	288	6.4
31	987	- 6.7	53	292	11.3
31	1,435	- 5.9	51	283	15.7
31	1,909	- 6.5	50	285	20.6
31	2,407	- 8.1	50	282	24.7
31	2,946	-10.4	46	278	27.6
31	3,511	-12.9	40	277	37.3
31	4,121	-16.0	38	275	39.8
31	4,766	-19.9	37	271	44.1
31	5,473	-24.4	34	271	48.4
31	6,226	-29.3		272	53.4
31	7,065	-35.6		271	61.2
31	7,981	-42.0		272	65.1
31	9,009	-49.2		272	70.7
31	10,186	-55.7		271	74.8
31	11,596	-58.1		270	75.6
31	12,438	-57.7		271	76.0
31	13,410	-58.2		273	71.7
31	14,555	-59.2		276	59.7
31	15,946	-60.9		272	56.2
31	17,332	-61.2		274	51.3
30	18,161	-60.7		275	43.3
29	19,123	-59.5		273	40.4
27	20,271	-57.4		269	37.5
24	21,708	-55.1		264	41.0
23	23,563	-52.0		261	42.9
22	24,743	-50.5		256	43.5
22	26,202	-49.3		251	42.0
10	28,095	-49.5			

DAYTON, OHIO
988 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	297	- 6.7	76	243	2.3
1000	31	165				
950	31	586	- 8.0	65	270	8.7
900	31	985	- 7.8	62	265	17.3
850	31	1,408	- 7.6	55	268	22.5
800	31	1,[illegible]	- 8.7	51	264	27.0
750	31	2,399	-10.1	46	264	29.9
700	31	2,[illegible]	-12.2	42	267	34.8
650	31	3,493	-14.4	40	267	39.4
600	31	4,098	-17.4	40	267	44.7
550	31	4,743	-21.3		266	48.2
500	31	5,[illegible]	-25.7		267	53.2
450	31	6,195	-30.1		267	61.6
400	31	7,026	-36.5		267	67.2
350	31	7,[illegible]	-42.5		270	73.4
300	31	8,965	-49.4		271	73.6
250	31	10,142	-55.5		270	69.9
200	31	11,551	-57.3		269	69.0
175	31	12,297	-56.3		274	58.5
150	31	13,375	-56.7		275	47.4
125	31	14,525	-58.5		277	45.1
100	31	15,922	-59.6		274	44.9
80	30	17,321	-59.6		270	44.3
70	30	18,164	-58.9		267	38.5
60	30	19,126	-58.1		264	36.3
50	30	20,[illegible]	-56.2		270	36.7
40	30	21,707	-52.9		262	43.3
30	30	23,570	-51.0		255	42.2
25	27	24,765	-48.8		251	34.8
20	27	[illegible]	-47.2		245	32.8
15	25	[illegible]	-46.2		229	32.4
12	12	30,878	-41.4			

DENVER, COLO.
835 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	1,611	-11.3	59	264	1.4
31	208				
31	604				
31	1,014	- 5.5	51	307	7.4
31	1,477				
31	1,948	- 4.9	41	301	7.8
31	2,454	- 6.4	39	306	12.8
31	2,992	- 8.9	41	304	16.7
31	3,558	-11.7	45	302	22.5
31	4,172	-15.6	47	300	29.0
31	4,[illegible]	-19.7	47	300	30.5
31	5,525	-24.4	45	297	35.2
31	6,279	-29.4	41	294	40.4
31	7,116	-35.1		288	46.2
31	8,033	-42.0		287	49.5
31	9,060	-49.4		286	56.2
31	10,235	-56.2		284	57.3
31	11,[illegible]	-60.0		280	60.4
31	12,471	-60.1		280	66.1
31	13,434	-60.1		280	62.0
31	14,569	-61.0		279	59.9
31	15,951	-62.1		281	56.5
31	17,[illegible]	-62.8		281	54.6
31	18,157	-62.6		279	48.4
30	19,101	-62.7		279	45.5
29	20,241	-60.7		279	45.5
27	21,651	-59.2		280	47.6
26	23,485	-53.8		278	52.5
24	24,663	-51.7		274	50.9
24	26,113	-51.2		271	50.9
19	27,570	-48.4			

DODGE CITY, KANS.
926 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
30	792	- 9.3	73	317	3.7
30	193				
30	595				
30	1,014	- 5.5	51	307	7.4
30	1,463	- 4.8	43	312	7.8
30	1,942	- 3.9	38	308	10.3
30	2,452	- 4.8	36	300	15.2
30	2,992	- 7.1	37	291	20.6
30	3,566	-10.0	37	284	25.1
30	4,180	-13.8	35	279	29.9
30	4,832	-17.8	36	276	34.2
30	5,544	-22.0	35	278	39.6
30	6,306	-27.3		277	43.7
30	7,151	-33.5		277	49.2
30	8,076	-40.4		274	53.2
30	9,108	-48.1		273	61.0
30	10,[illegible]	-55.3		273	69.4
29	11,705	-58.9		273	73.6
28	12,548	-59.5		274	73.1
27	13,520	-59.9		272	73.8
27	14,658	-60.3		273	68.6
27	16,042	-62.4		272	58.1
26	17,415	-63.7		273	52.7
23	18,247	-62.9		273	49.5
23	19,187	-62.4		272	48.8
22	20,313	-60.0		270	48.6
22	21,716	-57.2		262	46.4
22	23,549	-53.1		260	49.0
20	24,742	-50.6		255	52.1
10	26,[illegible]02	-49.6			

EL PASO, TEXAS
884 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	1,193	.1	57	292	1.4
31	190				
31	610				
31	1,053				
31	1,510	4.0	39	285	5.2
31	2,002	2.4	39	280	14.6
31	2,523	.8	35	274	22.2
31	3,074	- 1.7	32	270	27.4
31	3,660	- 4.7		270	29.0
31	4,286	- 8.2		272	30.9
31	4,950	-12.2		270	36.7
31	5,678	-17.1		270	39.1
31	6,457	-22.4		269	42.9
31	7,316	-28.7		270	48.2
31	8,258	-35.7		272	54.4
31	9,311	-43.8		269	63.7
31	10,513	-52.4		267	74.2
31	11,933	-58.4		265	78.1
31	12,769	-60.7		266	79.9
31	13,726	-61.9		268	79.9
31	14,849	-64.5		268	68.2
31	16,200	-67.5		267	56.7
30	17,540	-68.2		271	43.9
30	18,348	-67.1		272	41.4
30	19,281	-64.0		272	37.7
29	20,405	-62.1		270	26.6
28	21,793	-58.5		268	26.0
27	23,630	-53.3		262	27.0
26	24,808	-52.7		257	23.3
26	26,247	-53.4		259	25.3
23	28,109	-52.7		241	26.0
12	30,772	-49.6			

ELY, NEV.
810 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	1,908	-11.7	58	196	7.0
31	255				
31	658				
31	1,085				
31	1,531				
31	1,999	- 6.0	48	210	5.2
31	2,511	- 4.6	38	333	4.9
31	3,049	- 7.3	40	322	10.7
31	3,623	- 9.9	38	323	17.9
31	4,239	-12.4	32	317	24.3
31	4,895	-16.2	32	311	27.0
31	5,610	-20.7		321	30.1
31	6,374	-25.9		335	26.6
31	7,225	-32.1		334	29.3
31	8,153	-39.8		336	26.2
31	9,188	-47.9		344	25.5
31	10,378	-55.6		347	22.9
31	11,768	-61.6		321	22.3
31	12,595	-61.8		306	29.1
31	13,553	-60.4		295	33.4
31	14,686	-61.8		295	32.1
31	16,063	-63.3		298	30.1
30	17,437	-64.0		291	27.0
30	18,264	-64.1		297	26.8
29	19,205	-63.4		296	26.2
29	20,328	-62.6		293	27.0
28	21,715	-61.2		288	26.6
27	23,519	-57.5		279	32.6
27	24,678	-55.3		275	43.1
25	26,096	-54.2		268	56.7
20	27,685	-51.2			
6	30,727	-41.7			

FAIRBANKS, ALASKA
[illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	135	-17.4	82	5	1.0
1000	31	186			103	2.1
950	31	578	-11.7	67	120	4.3
900	31	994	- 8.3	67	224	3.5
850	31	1,438	- 7.8	64	246	4.9
800	31	1,[illegible]	- 8.4	60	271	6.8
750	31	2,[illegible]	-10.7	56	282	10.5
700	31	2,937	-13.3	57	281	13.2
650	31	3,492	-15.2	56	283	16.3
600	31	4,097	-19.4	52	285	16.9
550	31	4,733	-23.1	50	282	22.7
500	[illegible]	5,431	-27.7	48	280	26.0
450	31	6,175	-32.6		280	29.5
400	31	6,[illegible]	-38.8		279	34.1
350	31	7,[illegible]02	-45.5		283	35.6
300	31	8,914	-52.5		279	45.3
250	31	10,074	-58.5		279	50.3
200	31	11,458	-63.8		281	53.2
175	30	12,[illegible]	-64.1		283	[illegible]
150	30	13,233	-63.4		287	51.1
125	29	14,244	-64.1		291	51.9
100	27	15,705	-65.0		295	55.4
80	23	17,075	-66.6		296	61.8
70	20	17,904	-67.7		300	64.1
60	17	18,841	-69.0		308	62.0
50	13	19,898	-69.4		312	70.3
40	10	21,250	-69.8			
30	5	23,036	-63.8			
25						
20						
15						
10						
7						
5						

FLINT, MICH.
990 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	234	-11.8	81	238	3.9
31	158				
31	553	-11.7	72	263	9.1
31	965	-13.1	73	273	14.0
31	1,401	-13.1	65	273	19.4
31	1,863	-13.2	56	270	24.3
31	2,355	-14.1	51	267	28.2
31	2,876	-16.0	50	268	31.7
31	3,429	-18.6	48	269	34.6
31	4,024	-21.9	45	270	38.9
31	4,656	-25.4	41	268	43.9
31	5,346	-29.7	38	271	51.9
31	6,086	-34.7		270	57.5
31	6,902	-40.3		267	63.9
31	7,802	-46.5		268	71.1
31	8,812	-52.3		267	76.7
31	9,980	-56.0		269	76.6
31	11,[illegible]	-56.2		269	78.5
31	12,246	-55.7		270	73.3
31	13,227	-56.1		270	69.0
31	14,384	-57.0		267	64.3
31	15,793	-57.5		265	58.3
31	17,201	-58.2		266	51.9
31	18,054	-57.4		263	53.6
31	19,021	-56.8		259	50.7
31	20,182	-54.8		256	49.2
31	21,619	-52.3		254	50.1
31	23,477	-48.8		250	47.0
31	24,699	-47.7		245	45.1
26	26,196	-45.8		217	37.3
8	28,148	-42.3			

FORT WORTH, TEXAS
1000 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	180	- .6	66	329	4.5
31	182			345	3.3
31	597	- .2	57	282	5.4
31	1,026	1.7	53	262	11.3
31	1,488	3.0	45	265	15.5
31	1,979	2.0	39	269	19.2
31	2,496	.5	32	272	24.5
31	3,049	- 1.9	31	268	28.4
31	3,634	- 4.9		264	33.0
31	4,260	- 8.7		262	37.3
31	4,924	-12.9		264	42.2
31	5,649	-17.9		264	46.4
31	6,424	-23.2		268	51.3
31	7,282	-29.3		270	55.6
31	8,222	-36.1		269	63.1
31	9,276	-43.9		267	70.1
31	10,475	-52.2		269	76.2
31	11,893	-58.8		271	83.5
31	12,729	-59.9		273	80.8
31	13,687	-61.5		274	74.8
31	14,811	-63.9		274	68.8
30	16,169	-66.1		274	57.9
30	17,522	-65.9		273	47.8
29	18,342	-65.3		274	35.9
28	19,278	-62.8		273	31.1
27	20,412	-59.4		271	27.6
27	21,816	-56.4		262	29.0
25	23,668	-52.5		256	28.0
24	24,856	-50.7		250	23.9
21	26,315	-50.2		248	20.0
18	28,209	-49.3		233	25.8

GLASGOW, MONT.
938 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	696	-18.1	78	301	3.3
31	208				
31	563				
31	1,001	-14.4	58	305	15.7
31	1,435	-14.0	52	314	22.9
31	1,894	-15.1	49	313	26.2
31	2,379	-16.5	49	311	28.2
31	2,898	-18.3	51	312	30.3
31	3,445	-21.0	49	311	33.2
31	4,037	-24.0	46	313	36.1
31	4,660	-27.6	46	313	40.0
31	5,346	-32.1	45	314	43.1
31	6,075	-36.9		313	47.0
31	6,888	-42.2		315	52.7
31	7,780	-47.7		313	56.7
31	8,784	-53.5		313	61.8
31	9,942	-58.1		314	65.5
31	11,339	-59.6		310	61.2
31	12,173	-59.8		309	58.5
31	13,135	-59.4		306	58.5
30	14,275	-60.4		302	56.2
28	15,679	-62.1		296	57.3
23	17,083	-62.8		294	60.0
23	17,905	-63.5		290	59.8
22	18,834	-63.5		288	61.6
22	19,555	-62.9		285	62.6
21	21,347	-61.9		281	63.5
20	23,171	-57.3		279	69.0
17	24,356	-53.2		268	69.4
13	25,803	-50.7		256	62.8
8	27,756	-43.8			

GRAND JUNCTION, COLO.
855 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
				Direction	Speed
31	1,474	-13.9	74	87	1.0
31	267				
31	661				
31	1,082				
31	1,520			93	1.9
31	1,989	- 8.3	57	170	1.7
31	2,492	- 8.1	52	245	4.9
31	3,025	- 9.5	49	279	11.3
31	3,594	-11.8	48	291	17.9
31	4,205	-15.1	48	299	23.5
31	4,854	-18.7	45	300	28.4
31	5,563	-23.2	45	300	32.3
31	6,319	-28.2	42	296	39.1
31	7,162	-34.2		294	41.6
31	8,083	-40.8		288	43.5
31	9,115	-48.4		289	46.2
31	10,294	-55.8		292	37.7
31	11,696	-59.9		285	45.3
31	12,530	-60.0		283	47.2
31	13,493	-59.6		284	48.2
31	14,632	-60.4		286	45.7
31	16,016	-62.5		285	43.3
31	17,386	-63.8		287	42.7
28	18,211	-64.2		287	39.4
28	19,145	-64.3		284	38.1
24	20,285	-62.7		283	35.9
24	21,670	-59.6		280	42.0
21	23,481	-56.2		272	51.1
21	24,644	-54.4		267	58.1
20	26,072	-53.2		263	68.0
18	27,932	-51.3		257	83.4
16	30,662	-45.0		255	85.9
13	33,096	-40.2			
10	35,380	-39.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

1 APR 1963

Standard pressure surface (mb.)	GREAT FALLS, MONT. 890 MB						GREEN BAY, WIS. 992 MB						GREENSBORO, N. C. 987 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,123	-11.5	66	229	9.7	31	210	-15.4	74	282	3.3	31	273	- 1.8	80	271	2.3
1000	31	214					31	149					31	170				
950	31	610					31	536	-15.6	63	288	10.7	31	583	.2	58	272	8.5
900	31	1,030					31	944	-15.8	61	288	12.2	31	1,014	- .3	56	274	14.0
850	31	1,474	- 8.8	47	258	16.5	31	1,376	-15.0	54	284	16.3	31	1,471	- .5	51	272	17.1
800	31	1,942	-11.0	52	282	17.5	31	1,835	-15.1	52	282	20.4	31	1,956	- 1.7	50	271	21.8
750	31	2,432	-13.6	57	297	21.0	31	2,321	-16.5	49	284	25.1	31	2,471	- 3.4	47	271	26.8
700	30	2,957	-15.8	55	307	22.0	31	2,838	-18.3	49	282	28.4	31	3,011	- 5.6	47	268	32.3
650	30	3,510	-17.8	53	310	26.2	31	3,387	-20.4	43	280	32.8	31	3,589	- 9.2	43	268	39.2
600	30	4,109	-21.0	52	306	29.9	31	3,978	-23.8	43	278	37.1	31	4,205	-12.0		266	46.8
550	30	4,741	-24.8	49	312	35.6	31	4,605	-27.8	43	277	39.8	31	4,864	-15.3		265	52.8
500	30	5,436	-29.1	47	315	41.8	31	5,288	-31.8		274	43.7	31	5,581	-19.8		266	59.8
450	30	6,175	-34.1		314	47.8	31	6,023	-36.4		273	50.9	31	6,348	-25.0		265	63.3
400	30	6,998	-40.0		316	52.8	31	6,834	-41.7		270	57.7	31	7,201	-31.0		265	71.5
350	30	7,894	-46.1		316	56.5	31	7,728	-47.5		270	64.9	31	8,134	-37.8		265	77.9
300	30	8,906	-52.1		317	66.6	31	8,735	-52.9		272	67.0	31	9,179	-45.8		269	77.3
250	30	10,073	-58.1		316	65.5	31	9,900	-56.6		272	70.9	31	10,371	-54.1		269	82.0
200	30	11,469	-60.3		307	64.1	31	11,315	-56.0		269	70.7	31	11,782	-58.9		274	79.7
175	30	12,301	-60.4		308	58.3	31	12,166	-55.9		269	70.1	31	12,621	-58.2		272	74.0
150	30	13,263	-60.0		302	57.7	31	13,146	-54.1		268	71.7	31	13,589	-49.1		272	71.9
125	28	14,398	-60.5		300	57.1	31	14,303	-57.1		268	67.8	30	14,725	-61.1		271	58.1
100	27	15,796	-62.1		297	55.6	31	15,714	-57.8		265	67.8	29	16,105	-62.6		267	51.1
80	25	17,195	-63.1		294	56.3	31	17,118	-57.9		261	69.9	29	17,481	-62.2		271	45.3
70	22	18,044	-63.1		291	54.4	31	17,964	-57.6		260	65.3	29	18,316	-61.0		267	38.5
60	21	18,968	-63.4		292	54.2	30	18,927	-56.7		258	66.3	28	19,268	-59.7		262	30.7
50	20	20,078	-63.6		287	60.8	30	20,086	-54.8		252	65.1	28	20,417	-56.8		257	28.8
40	17	21,498	-62.7		281	63.1	30	21,527	-51.2		248	61.2	27	21,837	-54.4		258	25.5
30	15	23,260	-60.0		278	74.8	28	23,403	-48.7		240	61.0	26	23,697	-50.3		254	25.1
25	14	24,401	-57.4		271	78.9	27	24,616	-47.3		234	63.5	25	24,896	-48.5		253	21.2
20	13	25,834	-51.4		263	79.5	17	26,173	-43.3		246	50.1	24	26,374	-46.8		227	16.7
15	12	27,755	-47.6		260	62.4							22	28,174	-44.7		219	22.0
10	9	30,482	-46.8										6	30,963	-42.8			
7	8	32,888	-42.8															
5	7	35,247	-38.6															

Standard pressure surface (mb.)	GUAM, MARIANA IS. 998 MB						MIDWAY, HAWAII 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	.11	23.7	90	86	4.5	31	11	18.7	84	231	4..
1000	31	94					31	107	20.6	77	239	3.9
950	31	547	22.4	79	86	11.9	31	550	18.7	73	166	..
900	31	1,013	19.6	78	90	10.9	31	1,013	15.9	70	166	3.1
850	31	1,504	17.1	71	100	8.5	31	1,497	13.3	66	209	5.6
800	31	2,021	15.2	56	115	7.2	31	1,...	11.7	52	240	7.4
750	31	2,569	12.7	47	125	7.0	31	2,543	9.5	37	259	9.3
700	31	3,142	9.8	44	124	5.2	31	3,115	7.0	31		12.4
650	31	3,759	6.2	43	125	4.1	31	3,718	3.4	31	277	16.5
600	31	4,406	2.5	41	152	6.0	31	4,365	- ..	29	275	19.4
550	31	5,103	- 1.4	39	161	7.8	31	5,052	- 5.1	29		23.1
500	30	5,859	- 5.6	30	156	8.4	31	5,798	-10.3		278	31.1
450		6,675	-10.6		159	7.4	31	6,595	-16.0		279	33.0
400		7,574	-16.3		155	7.0	31	7,479	-22.6		287	36..
350		8,566	-22.9		157	7.4	31	8,444	-29.6		300	42.4
300		9,677	-31.4		164	4.7	31	9,528	-36.9		312	57.9
250		10,940	-41.8		186	6.4	31	10,767	-45.2		311	64.9
200		12,411	-54..		191	9.1	31	12,227	-54.2		310	68.6
175		13,254	-61.1		181	11.1	30	13,071	-59.5		309	72.5
150		14,134	-68.5		175	15.2	30	14,023	-64.9		308	67.4
125		15,164	-76.1		165	16.9	30	15,119	-70.9		305	47.6
100		16,526	-83.1		151	15.7	30	16,422	-75.5		301	33.8
80		17,765	-82.2		126	6.4	29	17,712	-75.6		295	15.2
70		18,522	-76.4		103	6.4	29	18,492	-71.1		294	8.5
60		19,427	-69.8		111	9.1	29	19,413	-66.7		201	1.4
50		20,526	-65.0		105	15.7	29	20,524	-63.4		121	6.2
40		21,898	-61.4		..	25.3	28	21,904	-60.6		93	10.1
30		23,698	-57.3		..	32.6	27	23,708	-57.4		90	15.3
25		24,896	-54.2		87	35.8	24	24,865	-55.2		..	13.2
20		26,298	-51.7		88	35.4	22	26,293	-53.4		98	13.0
15		28,168	-49.4		86	22.9	19	28,165	-...		130	7.0
10		30,849	-45.6				10	30,701	-53.0			
							6	33,051	-47.1			

Standard pressure surface (mb.)	HUNTINGTON, W. VA. 991 MB						INTERNAT. FALLS, MINN. 973 MB						JACKSON, MISS. 1010 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	246	- 5.5	69	210	2.9	31	360	-21.5	65	275	3.9	31	94	2.1	84	77	1.2
1000	31	174					31	158					31	171	2.2	69	81	1.7
950	31	579	- 3.7	61	242	10.5	31	526	-21.4	66	268	8.4	31	587	3.5	58	230	4.5
900	31	1,004	- 5.0	59	258	17.3	31	936	-20.3	67	290	15.9	31	1,026	3.8	56	262	9.7
850	31	1,453	- 6.0	60	262	25.3	31	1,359	-19.8	64	298	20.0	31	1,491	3.6	50	274	15.3
800	31	1,926	- 7.2	58	267	26.0	31	1,809	-20.0	58	300	22.3	31	1,982	2.5	48	274	22.0
750	31	2,425	- 8.5	54	268	29.3	31	2,289	-20.8	55	298	24.3	31	2,500	.8	48	272	25.5
700	31	2,962	-10.5	50	271	34.2	31	2,795	-22.6	49	296	27.0	31	3,053	- 2.4	46	267	31.1
650	31	3,527	-13.0	41	269	37.5	31	3,332	-25.1	45	294	27.8	31	3,635	- 5.1	37	267	35.9
600	31	4,137	-15.6		270	43.7	31	3,914	-28.2	44	292	31.7	31	4,264	- 8.4	36	267	37.9
550	31	4,785	-19.2		270	50.7	31	4,527	-31.5	43	290	33.4	31	4,929	-12.4	36	266	41.6
500	31	5,492	-23.5		268	57.5	31	5,204	-35.4		286	36.9	31	5,656	-17.2		266	45.9
450	31	6,243	-28.4		267	65.3	31	5,923	-39.9		281	39.1	31	6,431	-22.5		263	54.4
400	31	7,089	-34.4		270	66.8	31	6,727	-45.1		284	45.5	31	7,293	-28.3		265	58.1
350	31	8,010	-40.8		270	73.8	31	7,609	-50.1		283	49.5	31	8,237	-35.0		268	67.2
300	31	9,044	-47.8		272	75.6	31	8,606	-54.7		283	53.8	31	9,295	-43.0		270	69.6
250	31	10,226	-55.3		273	65.7	31	9,765	-57.2		283	52.5	31	10,501	-51.9		275	71.5
200	31	11,635	-58.3		276	66.3	31	11,178	-56.9		282	55.6	30	11,922	-59.1			
175	31	12,477	-57.0		284	48.4	31	12,024	-56.9		282	53.0	30	12,756	-60.5			
150	31	13,442	-57.7		281	42.0	31	13,000	-57.6		282	51.3	29	13,718	-61.6			
125	31	14,597	-59.6		280	41.8	30	14,136	-58.5		277	53.0	29	14,842	-64.5			
100	31	15,986	-61.1		277	37.7	30	15,535	-59.9		276	56.7	29	16,199	-66.5			
80	30	17,377	-61.0		279	36.3	28	16,941	-59.6		275	60.2	25	17,548	-65.9			
70	30	18,205	-60.2		276	32.1	27	17,797	-59.3		272	62.6	24	18,373	-64.3			
60	30	19,173	-58.6		274	30.1	24	18,772	-59.3		271	59.5	24	19,309	-62.6			
50	29	20,324	-56.4		274	31.5	21	19,877	-56.6		265	65.1	24	20,442	-59.1			
40	28	21,756	-53.0		273	33.6	19	21,292	-52.4		260	73.1	24	21,851	-56.2			
30	28	23,624	-50.3		270	38.5	15	23,168	-46.1		256	69.8	23	23,691	-53.1			
25	27	24,821	-48.8		262	37.7	13	24,168	-46.3		255	71.1	22	24,874	-51.5			
20	27	26,292	-47.3		259	40.6	13	25,860	-44.9		253	73.1	22	26,329	-49.7		93	11.7
15	26	28,203	-45.4		258	41.6	12	27,856	-40.8		249	59.1	21	28,203	-48.7			
10	14	30,882	-44.1				10	30,750	-36.3				15	30,924	-44.2			
7																		

Standard pressure surface (mb.)	JACKSONVILLE, FLA. 1020 MB						JOHNSTON IS., PACIFIC AREA 1013 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	5	7.2	86	41..	3.3	31	3	23.9	76	1..	2.5
1000	31	170	9.2	74	326	2.9	31	113	22.9	76	91	2.9
950	31	598	9.3	66	344	6.2	31	558	19.1	78	68	2.7
900	31	1,045	8.4	63	257	10.7	31	1,021	15.6	75	63	1.7
850	31	1,517	6.9	57	262	16.5	31	1,505	14.9	48	46	.8
800	31	2,014	5.2	53	264	22.5	31	2,017	13.4	41	327	2.5
750	31	2,539	3.2	49	262	26.4	31	2,559	11.5		324	5.6
700	31	3,098	.9	42	262	28.4	31	3,132	8.4		320	8.5
650	31	3,684	- 2.7	40	262	32.6	31	3,735	5.2		318	10.9
600	31	4,321	- 6.7	38	261	39.2	31	4,390	1.8		316	15.7
550	31	4,985	-10.9	38	261	41.4	31	5,078	- 2.7		316	19.0
500	31	5,722	-15.3	35	268	48.2	31	5,833	- 7.8		304	21.8
450	31	6,502	-20.7	33	267	54.4	31	6,641	-12.9		308	23.1
400	31	7,373	-26.6		269	59.1	31	7,534	-19.0		317	32.4
350	31	8,323	-33.5		268	69.9	31	8,517	-25.5		314	39.4
300	31	9,387	-41.5		272	76.6	31	9,619	-33.0		316	42.0
250	31	10,599	-50.5		275	85.5	31	10,877	-42.4		319	42.6
200	31	12,024	-58.8		275	87.4	30	12,347	-54.0		322	44.3
175	31	12,857	-60.5		274	86.1	30	13,191	-60.5		321	42.2
150	31	13,814	-62.2		274	80.6	29	14,139	-67.6		319	39.2
125	31	14,929	-66.0		275	68.4	29	15,218	-74.6		318	35.9
100	31	16,272	-69.0		273	56.0	28	16,495	-81.1		317	28.6
80	30	17,609	-68.5		279	42.4	23	17,733	-80.5		325	18.1
70	30	18,416	-66.4		275	30.9	21	18,488	-76.0		333	12.4
60	29	19,352	-62.8		279	20.2	18	19,396	-69.2		13	6.4
50	29	20,483	-59.7		282	11.7	16	20,498	-64.7		89	8.2
40	27	21,887	-56.0		276	7.6	14	21,863	-61.5		102	15.7
30	27	23,731	-52.4		107	5.6	14	23,663	-58.1		83	21.6
25	25	24,910	-50.5		85	9.3	12	24,815	-55.8		87	23.7
20	16	26,386	-48.3		100	9.5	11	26,261	-53.3			
15	16	28,302	-45.9		104	29.3	7	28,137	-51.2			
10	13	31,004	-41.4									
7	6	33,289	-41.8									

Standard pressure surface (mb.)	KING SALMON, ALASKA 1013 MB						KOTZEBUE, ALASKA 1021 MB						LAKE CHARLES, LA. 1020 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	15	- 4.6	72	82	6.6	31	5	-12.2	82	95	11.1	31	8	5.5	87	46	3.9
1000	31	118	- 1.0	66	94	9.7	31	166	- 9.2	75	102	12.2	31	170	6.9	73	67	4.3
950	31	530	- .9	60	121	9.5	31	565	- 7.5	70	118	9.1	31	595	7.4	66	215	3.7
900	31	959	- 1.8	61	140	9.5	31	986	- 7.2	60	135	5.6	31	1,038	7.3	59	244	7.2
850	31	1,413	- 3.1	60	156	11.1	31	1,431	- 8.1	66	178	3.3	31	1,509	6.8	56	253	11.9
800	31	1,893	- 4.4	55	169	12.4	31	1,901	- 9.6	61	193	5.1	31	2,006	6.8	48	256	18.1
750	31	2,398	- 6.9	50	177	12.8	31	2,395	-11.6	57	200	7.2	31	2,533	3.6	44	260	24.3
700	31	2,935	- 9.9	48	178	14.0	31	2,924	-14.0	53	212	8.5	31	3,090	.6	37	261	28.6
650	31	3,504	-13.1	46	178	15.9	31	3,473	-16.9	50	224	7.6	31	3,681	- 2.5		259	33.4
600	31	4,110	-16.2	41	192	15.9	31	4,081	-20.2	44	240	8.2	31	4,314	- 5.9		261	39.6
550	31	4,757	-19.8		195	19.4	31	4,718	-24.1	42	238	10.9	31	4,984	-10.1		260	43.1
500	31	5,461	-24.4		197	22.0	31	5,409	-28.6	41	235	12.8	31	5,719	-15.0		260	48.8
450	31	6,219	-29.5		204	23.3	31	6,155	-34.0		245	12.8	31	6,504	-20.2		265	56.0
400	31	7,052	-35.3		209	27.6	31	6,971	-40.0		235	18.8	31	7,372	-26.2		263	65.5
350	31	7,970	-41.5		211	29.9	31	7,870	-46.4		248	20.8	31	8,324	-33.3		266	74.8
300	31	9,001	-48.2		216	32.8	31	8,878	-53.0		245	25.8	31	9,388	-41.4		263	80.6
250	31	10,186	-55.1		216	36.5	30	10,034	-59.3		247	32.4	31	10,602	-50.3		267	89.2
200	31	11,590	-60.2		222	30.9	28	11,438	-62.6		257	34.6	31	12,028	-58.9		272	96.4
175	31	12,422	-60.0		227	26.2	27	12,260	-62.2		259	34.2	31	12,862	-60.8		274	96.4
150	30	13,382	-58.2		238	24.7	27	13,216	-60.8		268	36.7	31	13,816	-63.2		271	83.9
125	28	14,538	-58.5		247	23.3	27	14,349	-61.3		269	39.2	31	14,929	-66.2		269	75.4
100	28	15,935	-60.2		259	23.5	27	15,728	-62.9		281	43.1	31	16,271	-68.6		269	57.5
80	28	17,321	-61.7		273	25.8	26	17,115	-63.9		285	48.8	31	17,604	-69.0		270	42.4
70	26	18,147	-62.5		284	27.6	26	17,937	-64.3		288	52.5	31	18,414	-67.2		268	33.8
60	26	19,097	-63.3		294	30.1	26	18,874	-64.9		294	57.7	31	19,341	-64.3		266	23.5
50	26	20,215	-64.3		299	35.0	26	19,984	-65.5		298	61.8	30	20,465	-61.0		260	17.5
40	23	21,577	-64.7		313	40.0	22	21,369	-64.8		308	69.0	29	21,867	-56.7		253	19.6
30	19	23,353	-63.9		331	49.5	16	23,225	-62.2		315	78.3	29	23,703	-53.7		230	7.8
25	14	24,546	-61.1		352	57.3	14	24,420	-59.4		322	77.1	28	24,882	-52.8		196	7.0
20	11	26,010	-57.6		5	63.0	10	26,009	-53.9				26	26,338	-51.0		152	7.8
15	9	27,913	-52.1				8	27,951	-49.0				25	28,212	-49.5		126	12.8
10	5	30,745	-39.9				8	30,638	-44.9				19	30,884	-45.6		144	22.9
7							5	33,484	-28.6				6	33,211	-46.5			

Standard pressure surface (mb.)	LANDER, WYO. 827 MB						LAS VEGAS, NEV. 944 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	1,696	-16.0	75	287	1.4	31	660	.9	46	273	2.9
1000	31	245					31	190				
950	31	634					31	606				
900	31	1,049					31	1,045	4.8	29	12	4.5
850	31	1,490					31	1,510	2.9	24	356	8..
800	31	1,952	-10.1	54	317	2.1	31	1,998	.8	32	348	9.3
750	31	2,449	-10.5	50	321	5.8	31	2,516	- 1.1	31	342	7.4
700	31	2,979	-11.9	49	314	14.8	31	3,063	- 3.5	30	320	8.7
650	31	3,540	-14.5	50	303	22.5	31	3,642	- 6.3		314	11.5
600	31	4,147	-17.9	44	306	31.3	31	4,268	- 9.8		313	15.3
550	31	4,785	-21.5	47	305	36.7	31	4,927	-14.3		311	19.4
500	31	5,490	-25.8	42	303	40.8	31	5,651	-19.2		305	22.7
450	31	6,237	-31.0	38	305	43.9	31	6,417	-25.0		301	25.1
400	31	7,072	-37.0		304	49.5	31	7,273	-31.4		297	26.8
350	31	7,983	-43.4		300	52.1	31	8,205	-38.8		293	30.3
300	31	9,006	-50.1		308	52.3	31	9,245	-46.9		293	34..
250	31	10,180	-56.2		301	59.3	31	10,433	-54.4		291	38.7
200	31	11,580	-60.7		295	57.9	31	11,839	-60.0		278	44.3
175	31	12,412	-60.6		290	59.3	31	12,672	-60.5		275	46.8
150	30	13,374	-59.2		284	59.7	31	13,641	-60.1		274	50.3
125	28	14,516	-59.8		292	61.4	30	14,772	-62.1		275	46.0
100	28	15,906	-61.3		291	54.6	30	16,143	-66.6		278	41.4
80	28	17,295	-62.6		289	51.7	28	17,504	-65.7		279	35.0
70	26	18,133	-62.4		287	50.1	26	18,325	-65.0		284	33.4
60	26	19,098	-62.2		286	50.1	25	19,264	-63.6		285	30.5
50	24	20,241	-61.3		284	52.1	25	20,487	-62.3		284	31.1
40	23	21,633	-60.7		280	52.7	22	21,773	-59.3		275	36.3
30	15	23,446	-58.1		272	59.8	20	23,589	-55.7		271	45.7
25	14	24,614	-50.7		267	63.7	18	24,760	-54.3		270	51.7
20	12	26,058	-49.4				16	26,203	-53.0		262	57.5
							10	28,014	-53.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1963

LIHUE, HAWAII — [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	36	19.5	81	240	6.4
1000	31	103	20.8	75	234	5.2
950	31	[illegible]	18.3	74	232	7.4
900	[illegible]	1,008	15.0	75	250	9.3
850	31	1,491	12.4	67	[illegible]	14.0
800	31	[illegible]	10.6	48	259	[illegible]
750	31	2,531	8.7	41	[illegible]	19.6
700	31	3,102	[illegible]	38	269	21.6
650	31	3,700	1.9	37	274	27.4
600	31	[illegible]	- 1.8	[illegible]	274	32.1
550	31	5,024	- 6.0		275	34.8
500	31	[illegible]	-10.7	34	279	37.3
450	31	6,568	-16.3		283	40.6
400	30	7,455	-22.5		295	46.2
350	30	8,421	-29.6		302	53.8
300	30	[illegible]	-36.7		302	65.3
250	30	10,745	-44.9		305	76.7
200	30	12,209	-53.6		308	82.4
175	29	13,059	-59.0		305	73.6
150	29	14,011	-65.4		302	[illegible]
125	29	[illegible]	-70.8		302	55.4
100	[illegible]	16,412	-74.9		293	40.6
80	[illegible]	17,707	[illegible]		292	22.0
70	[illegible]	18,491	-70.7		275	10.5
60	25	19,413	-66.6		244	2.1
50	24	20,525	-62.4		187	4.9
40	[illegible]	21,911	-60.1		118	1.9
30	[illegible]	23,717	-58.0		90	6.0
25	[illegible]	24,872	-56.4		78	6.8
20	[illegible]	26,296	-54.8		91	2.1
15	21	28,151	-53.4		252	4.7
10	21	[illegible]	-51.4		246	13.0
7	16	[illegible]	-45.6		266	21.8
5	11	35,270	-43.1			

LITTLE ROCK, ARK. — 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	- 2.9	81	348	2.5
1000	31	177	- 2.5	68	330	2.5
950	31	588	- 1.1	57	[illegible]	5.1
900	31	1,019	.4	[illegible]	267	9.0
850	31	1,477	.5	[illegible]	261	15.0
800	31	1,964	- .5	40	[illegible]	19.0
750	31	2,473	- 2.3	40	268	22.9
700	31	3,024	- 4.9	40	270	28.8
650	31	3,597	- 7.9	39	272	34.6
600	31	4,223	-11.0	36	271	[illegible]
550	31	4,879	-15.2	35	[illegible]	[illegible]
500	31	5,602	-19.7	34	271	48.2
450	31	6,367	-25.1		275	51.7
400	31	7,223	-31.0		272	54.2
350	31	8,156	-37.9		271	62.2
300	31	9,201	-45.2		274	[illegible]
250	31	10,396	-53.0		[illegible]	75.4
200	31	11,811	-58.9		274	74.2
175	31	12,649	[illegible]		274	67.4
150	31	13,614	[illegible]		274	67.0
125	31	[illegible]	-62.1		271	65.3
100	31	16,117	-64.1			
80	26	17,493	-64.1			
70	[illegible]	18,314	-63.0			
60	25	19,262	-61.9			
50	[illegible]	20,398	-59.1			
40	21	21,805	-55.6			
30	18	23,654	-52.4			
25	18	24,842	-50.1			
20	17	26,301	-50.3			
15	12	28,188	-48.1			
10	6	30,846	-45.7			

MCGRATH, ALASKA — [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	-17.5	79		.0
1000	31	173			93	1.4
950	31	573	- 7.9	69	94	5.1
900	31	990	- 5.4	68	146	5.2
850	31	1,439	- 5.5	62	185	7.6
800	31	1,914	- 6.6	59	195	8.2
750	31	2,415	- 8.7	54	[illegible]	7.4
700	31	2,949	-11.1	48	213	7.2
650	31	3,511	-14.2	47	[illegible]	9.5
600	31	4,118	-17.8	43	230	11.5
550	31	4,757	-21.8	42	224	13.8
500	31	5,459	-26.4	46	223	13.8
450	31	6,200	-31.9		[illegible]	15.7
400	31	7,034	-38.0		228	20.0
350	31	7,941	-44.1		229	24.3
300	30	8,958	-50.5		[illegible]	28.2
250	30	10,129	-56.6		232	35.4
200	30	11,529	-61.0		243	34.0
175	30	12,357	[illegible]		255	32.6
150	[illegible]	13,316	-60.1		[illegible]	33.6
125	30	14,453	-60.4		274	35.0
100	30	15,838	-62.0		279	38.3
80	29	17,220	-63.5		289	44.1
70	28	18,053	-64.2		[illegible]	46.4
60	28	18,992	-65.0		[illegible]	50.3
50	26	20,120	-65.5		307	54.4
40	21	21,489	-65.1		317	58.7
30	18	23,316	-63.3		338	65.7
25	14	24,525	-59.5		343	72.5
20	10	25,951	-56.0			

MAJURO, MARSHALL IS. — 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	26.6	[illegible]	75	9.7
1000	31	84	26.0	81	73	11.7
950	31	530	23.0	82	67	17.5
900	31	1,006	19.9	81	80	16.7
850	31	1,499	17.4	76	89	15.9
800	31	2,016	15.6	63	87	17.5
750	31	2,559	12.8	57	85	20.0
700	31	3,140	9.5	57	89	19.4
650	31	3,748	6.3	46	91	23.3
600	31	4,405	2.9	43	88	22.3
550	31	5,100	- 1.2	41	89	24.1
500	31	5,860	- 5.3		87	23.1
450	31	[illegible]	- 9.7		82	[illegible]
400	31	7,584	-15.7		77	27.0
350	31	8,578	-22.5		80	23.5
300	30	9,687	-31.1		83	20.4
250	[illegible]	10,952	-41.3		91	16.3
200	27	12,426	-53.8		91	15.0
175	27	13,270	-60.7		88	15.5
150	27	14,212	-68.4		78	17.7
125	27	15,284	-76.2		74	21.4
100	27	16,547	-83.4		76	20.8
80	27	17,792	-80.7		87	7.8
70	27	18,554	-75.6		245	5.4
60	27	19,454	-71.3		94	2.9
50	27	20,542	-67.7		89	19.6
40	27	21,900	-62.9		88	40.8
30	25	23,697	-57.6		86	50.1
25	25	24,857	-54.3		90	56.5
20	25	26,304	-49.2		93	46.8
15	11	28,199	-46.3			

MEDFORD, OREG. — 977 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	- 4.3	92		.0
1000	31	214				
950	31	622	- .1	68	298	1.4
900	31	1,058	2.8	55	122	1.6
850	31	1,520	2.4	46	153	2.5
800	31	2,009	.9	39	328	2.1
750	31	2,525	- .9	39	335	8.5
700	31	3,074	- 3.6	37	334	13.4
650	31	3,652	- 6.7	35	333	18.1
600	31	4,278	-10.1	33	330	21.8
550	31	4,941	-14.3	31	327	23.5
500	31	5,661	-19.2		322	24.9
450	31	6,431	-24.9		319	27.4
400	31	7,282	-31.5		319	27.8
350	31	8,214	-38.6		316	30.9
300	31	9,254	-46.9		313	30.3
250	31	10,437	-56.3		326	29.5
200	31	11,824	-64.6		320	31.5
175	31	12,639	-64.3		325	30.1
150	31	13,587	-62.2		317	33.4
125	31	14,713	-62.5		320	31.9
100	31	16,084	-64.2		[illegible]	34.8
80	31	17,447	-64.9		[illegible]	35.9
70	31	18,258	-64.9		304	36.9
60	31	19,201	-65.0		300	37.3
50	31	20,313	-64.7		298	38.7
40	30	21,681	-64.3		292	41.0
30	28	23,446	-62.9		287	50.7
25	26	24,577	-61.3		281	56.0
20	26	25,970	-58.6		276	64.1
15	24	27,776	-55.9		272	77.9
10	22	30,424	-49.9		269	82.6
7	17	32,760	-43.7		261	88.0
5	13	35,059	-39.3			

MERIDA, MEXICO — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	1	11	17.7	93	78	4.7
1000	31	159	20.3	85	[illegible]	7.6
950	31	601	[illegible]	[illegible]	116	10.1
900	31	1,065	[illegible]	[illegible]	126	6.6
850	31	1,550	14.2	65	152	2.5
800	31	2,061	11.8	58	220	3.1
750	31	2,592	9.7	46	219	4.1
700	31	3,170	7.1		254	4.7
650	31	3,767	4.1		255	7.2
600	31	4,424	[illegible]		255	9.1
550	31	5,103	- 3.5		[illegible]	12.4
500	31	5,866	- 8.0		255	15.2
450	31	6,666	-13.7		265	19.6
400	31	7,564	-20.4		259	22.2
350	31	8,537	-28.2		263	25.6
300	31	9,624	-36.8		261	31.7
250	[illegible]	[illegible]	[illegible]		266	34.8
200	[illegible]	[illegible]	-56.1		[illegible]	40.6
175	30	13,148	[illegible]		[illegible]	[illegible]
150	30	14,094	-65.8		[illegible]	45.7
125	30	15,187	-71.0		262	35.2
100	30	16,490	-76.0		258	29.1
80	30	17,771	[illegible]		262	15.9
70	30	18,551	-73.7		[illegible]	8.7
60	[illegible]	19,454	-68.5		101	1.4
50	29	20,562	[illegible]		99	4.9
40	[illegible]	21,952	-58.8		[illegible]	10.5
30	27	23,772	[illegible]		82	20.0
25	[illegible]	24,940	-53.1		81	23.3
20	21	26,396	-50.8		[illegible]	30.1
15	[illegible]	28,254	-48.7			
10						
7						
5						

MIAMI, FLA. — 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	16.3	[illegible]	11	1.4
1000	31	163	17.7	81	[illegible]	2.3
950	31	600	15.9	77	140	2.3
900	31	1,061	13.3	74	218	4.3
850	31	1,540	10.7	[illegible]	[illegible]	[illegible]
800	31	2,044	[illegible]	53	[illegible]	9.9
750	31	2,573	7.1	34	268	12.0
700	31	3,142	4.1	32	266	16.5
650	31	3,739	.8		262	20.2
600	31	4,381	- 2.5		263	24.7
550	31	5,061	- 6.5		[illegible]	30.5
500	[illegible]	5,806	-11.2		[illegible]	35.8
450	31	6,602	-16.9		265	40.2
400	31	7,481	-23.7		263	43.1
350	31	8,442	-31.1		[illegible]	47.8
300	31	9,516	-39.8		[illegible]	54.2
250	31	10,738	-48.5		272	54.8
200	31	12,176	-57.5		271	63.9
175	30	13,018	-60.6		275	67.2
150	30	13,970	-64.0		271	64.1
125	30	15,075	-68.6		[illegible]	56.2
100	[illegible]	16,395	-73.5		[illegible]	47.2
80	30	17,699	-73.4		[illegible]	27.8
70	30	18,495	-70.3		[illegible]	17.3
60	[illegible]	19,412	[illegible]		[illegible]	8.0
50	30	[illegible]	-61.7		256	2.3
40	30	[illegible]	-56.9		73	6.0
30	30	[illegible]	-54.0		[illegible]	14.8
25	28	24,938	[illegible]		[illegible]	21.2
20	28	26,392	-49.5		[illegible]	24.3
15	25	28,287	-46.7		[illegible]	30.5
10	18	30,987	-42.6		115	33.0

MIDLAND, TEXAS — 918 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	874	- 3.7	60	335	1.9
1000	31	195				
950	31	602				
900	31	1,031	.8	42	284	2.5
850	31	1,492	2.9	34	276	11.7
800	31	1,984	3.1	33	282	15.0
750	31	2,508	2.1	[illegible]	[illegible]	26.6
700	31	3,061	- .8	28	274	26.8
650	31	3,647	- 4.3		271	30.7
600	31	4,276	- 7.9		270	32.1
550	31	4,944	-12.4		269	37.1
500	31	5,668	-16.8		267	43.1
450	31	6,446	-22.1		266	46.8
400	31	7,307	-28.6		269	52.7
350	31	8,249	-35.6		268	59.8
300	31	9,304	-43.5		268	69.4
250	31	10,508	-51.8		267	78.7
200	31	11,929	-58.4		267	85.1
175	31	12,766	-60.3		265	84.9
150	31	13,723	-61.7		268	78.1
125	31	14,844	-64.9		269	71.5
100	31	16,196	-67.3		271	59.1
80	30	17,542	-66.6		269	48.8
70	[illegible]	18,360	-65.9		268	41.0
60	[illegible]	19,289	-64.9		268	33.2
50	30	[illegible]	-61.5		265	27.8
40	28	21,808	-57.4		[illegible]	26.4
30	25	23,644	-52.6		259	23.1
25	25	24,823	-52.4		257	18.7
20	23	26,267	-53.1		251	18.1
15	23	28,126	-51.7		244	18.5
10	22	30,773	-48.9		220	22.9
7	14	33,117	[illegible]		[illegible]	26.4
5	10	35,290	-43.0			

MONTGOMERY, ALA. — 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	1.8	70	15	2.5
1000	31	176	3.0	65	48	1.9
950	31	595	4.3	63	292	2.5
900	31	1,034	4.8	52	282	8.9
850	31	1,500	4.0	48	277	15.3
800	31	1,992	2.6	53	271	21.0
750	31	2,513	.8	49	267	27.4
700	31	3,065	- 1.7	44	266	31.7
650	31	3,648	- 4.2		265	36.5
600	31	4,280	- 7.7		264	41.6
550	31	4,947	-11.7		262	46.4
500	31	5,677	-16.4		262	51.5
450	31	6,458	-21.6		263	56.5
400	31	7,320	-27.8		264	63.7
350	31	8,266	-34.9		265	69.6
300	31	9,325	-43.0		266	82.6
250	31	10,531	-51.8		266	91.9
200	30	11,952	-59.1		268	93.3
175	30	12,786	-60.7		268	91.7
150	29	13,740	-61.7		269	86.7
125	29	14,862	-64.4		269	74.0
100	28	16,218	[illegible]		[illegible]	63.0
80	28	17,570	-66.1		270	43.1
70	27	18,389	-64.2		269	35.2
60	26	19,330	-62.0		265	28.6
50	[illegible]	20,467	[illegible]		261	25.3
40	[illegible]	21,879	-55.1		263	20.2
30	24	23,727	-52.5		259	12.6
25	24	24,909	-50.7		234	5.1
20	24	26,369	-49.1		216	3.3
15	20	28,239	-47.7		187	10.3
10	6	30,863	-45.3			

NANTUCKET, MASS. — 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	- 1.3	81	318	6.2
1000	31	132	- .8	73	296	7.2
950	31	537	- 2.2	72	282	11.1
900	31	969	- 3.8	66	275	15.7
850	31	1,420	- 5.1	61	268	20.2
800	31	1,895	- 6.5	54	265	24.9
750	31	2,398	- 8.1	50	260	29.0
700	31	2,932	-10.3	46	260	34.8
650	31	3,495	-13.1	45	259	39.8
600	31	4,106	-16.4	42	256	43.5
550	31	4,752	-20.3	45	[illegible]	47.2
500	31	5,455	-24.4	43	255	55.6
450	31	6,208	-29.5	41	253	60.4
400	31	7,046	-35.7	42	254	[illegible]
350	31	7,961	-42.4		256	63.3
300	31	8,989	-48.8		261	69.0
250	31	10,169	-55.2		264	69.9
200	30	[illegible]	-57.7		266	68.0
175	30	12,432	-56.2		[illegible]	[illegible]
150	30	13,412	-56.0		264	60.8
125	30	14,571	-56.7		265	57.3
100	29	15,982	-57.6		267	52.3
80	29	17,390	-57.1		258	45.1
70	29	18,240	-56.5		253	40.6
60	29	19,217	-55.7		250	39.1
50	28	20,382	-54.0		252	37.7
40	27	[illegible]	-51.6		249	31.9
30	27	23,697	-48.4		246	31.3
25	26	24,896	-47.3		247	33.8
20	25	26,372	-46.0		251	36.3
15	25	28,298	-43.1		249	35.8
10	22	[illegible]	-39.4		247	25.5
7	19	33,548	-34.7		256	24.3
5	12	35,805	-33.2			

NASHVILLE, TENN. — [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	- 4.2	[illegible]	254	.6
1000	31	177			228	.6
950	31	585	- 2.3	63	286	7.8
900	31	1,014	- 2.6	61	289	9.3
850	31	1,468	- 2.7	57	273	16.9
800	31	1,948	- 3.5	50	272	22.5
750	31	[illegible]	- 5.2	45	274	[illegible]
700	31	2,997	- 7.2	40	274	32.3
650	31	3,569	- 9.5	34	273	38.3
600	31	4,187	-12.5	32	270	45.1
550	31	4,844	-16.4		270	48.2
500	31	5,557	-20.9		269	52.7
450	31	6,326	-26.1		268	56.2
400	[illegible]	[illegible]	-32.1		266	60.6
350	31	[illegible]	-38.9		263	67.8
300	[illegible]	9,141	-46.4		268	75.0
250	31	10,330	-54.4		[illegible]	74.4
200	31	[illegible]	-59.5		283	63.0
175	31	12,575	-58.7		[illegible]	61.8
150	31	13,542	-59.4		282	59.1
125	31	14,678	-61.4		281	51.5
100	30	16,058	-63.2		276	44.3
80	28	17,430	-63.2		281	43.7
70	[illegible]	18,262	[illegible]		281	36.7
60	[illegible]	19,209	[illegible]		276	30.7
50	27	[illegible]	-58.0		270	29.3
40	[illegible]	21,767	-55.2		[illegible]	29.7
30	26	23,620	-51.1		[illegible]	27.0
25	26	24,809	-49.7		257	27.8
20	24	26,266	-48.8		[illegible]	26.6
15	[illegible]	28,166	-46.7		240	22.5
10	[illegible]	30,865	[illegible]		214	30.1
7	[illegible]	33,269	-41.6		204	32.4
5	22	35,568	-38.4			

N. Y. INT. AP, IDLEWILD — 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	- 2.9	65	311	6.4
1000	31	150	- 3.7	61	307	8.7
950	31	557	- 4.0	59	302	9.5
900	31	982	- 4.8	[illegible]	288	13.6
850	31	1,431	- 6.1	58	279	19.8
800	31	1,905	- 6.4	50	268	23.9
750	31	2,412	[illegible]	51	[illegible]	28.8
700	31	[illegible]	-11.0	48	262	32.1
650	31	3,507	-13.9	46	[illegible]	37.1
600	31	4,111	-17.4	47	259	41.2
550	31	4,756	-21.0	43	260	48.4
500	31	[illegible]	-25.3		262	56.3
450	31	6,215	-30.1		264	60.4
400	31	7,043	-35.9		265	64.5
350	30	7,968	-42.4		265	68.8
300	30	8,994	-48.9		[illegible]	77.1
250	30	10,174	-55.4		268	71.7
200	30	11,587	-56.8		271	68.2
175	29	12,436	-55.8		273	63.3
150	28	13,421	-55.9		273	57.1
125	27	14,575	-57.1		268	47.4
100	26	15,979	-58.1		271	50.3
80	[illegible]	17,385	-57.7		268	46.2
70	26	18,236	-56.0		[illegible]	38.1
60	25	19,204	-56.3		264	36.9
50	25	20,367	-54.5		264	32.1
40	25	21,805	-51.8		[illegible]	29.3
30	25	23,680	-49.4		254	28.8
25	23	24,888	-47.5		248	28.0
20	[illegible]	26,367	-45.4		247	21.4
15	17	28,307	-43.3			
10	[illegible]	31,109	[illegible]			

NOME, ALASKA — 1018 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	- 7.2	79	76	10.1
1000	31	145	- 5.2	67	92	12.2
950	31	549	- 5.5	[illegible]	129	13.4
900	30	970	- 5.7	68	144	11.1
850	[illegible]	1,418	- 6.5	66	152	10.1
800	30	1,890	- 8.0	63	156	9.5
750	30	2,388	-10.0	60	[illegible]	8.0
700	29	2,917	-12.7	55	169	6.2
650	29	3,477	-16.0	[illegible]	187	6.4
600	[illegible]	4,078	-19.4	51	192	7.2
550	29	4,713	-23.4	48	216	7.4
500	29	5,411	-28.1	47	223	9.1
450	29	6,151	-33.2		232	10.3
400	29	6,977	-39.3		245	13.0
350	29	7,878	-45.8		248	14.6
300	29	8,889	-52.5		243	18.8
250	29	10,052	-57.6		238	23.9
200	29	11,452	-59.8		243	26.8
175	28	12,289	-58.5		244	27.8
150	27	13,249	-57.9		260	32.1
125	26	14,391	-58.7		268	35.4
100	26	15,788	-60.2		274	38.9
80	24	17,155	-61.2		279	43.3
70	23	17,984	-61.8		284	47.8
60	23	18,932	-62.7		287	52.7
50	23	20,053	-63.4		291	59.3
40	23	21,420	-64.1		297	61.6
30	18	23,207	-63.9		307	72.3
25	16	24,352	-63.1		315	67.4
20	10	25,908	-58.6		342	62.4
15	10	27,722	-56.4			

NORFOLK, VA. — 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	.8	74	322	3.9
1000	31	161	1.4	64	304	5.8
950	31	572	.4	60	277	9.3
900	31	1,006	- .4	56	272	13.0
850	31	1,464	- 1.2	54	269	18.1
800	31	1,946	- 2.7	53	269	21.6
750	31	2,454	- 4.4	48	262	28.8
700	31	[illegible]	- 6.7	48	260	34.2
650	31	3,569	- 9.5	43	260	38.5
600	31	4,189	-12.7	38	262	44.7
550	31	4,841	-16.4		260	53.6
500	31	5,559	-20.9		260	58.7
450	31	6,321	-26.3		259	65.3
400	31	7,172	-32.1		262	71.1
350	31	8,102	-38.8		263	74.4
300	31	9,142	-46.8		268	72.7
250	31	10,329	-54.5		271	79.9
200	31	11,741	-57.9		274	78.1
175	31	12,584	-57.5		275	74.0
150	30	13,561	-58.5		272	67.6
125	30	14,702	-60.5		267	60.2
100	30	16,087	-61.3		265	53.0
80	30	17,474	-60.5		264	41.4
70	28	18,317	-59.9		261	36.1
60	28	19,276	-57.6		260	35.2
50	27	20,436	-55.1		258	29.0
40	25	21,870	-52.5		256	22.7
30	24	23,746	-49.1		252	18.1
25	22	24,948	-47.6		240	17.1
20	19	26,424	-45.9		253	18.1
15	14	28,354	-42.5		269	34.8

NORTH PLATTE, NEBR. — 919 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	-14.5	80	333	5.4
1000	31	196				
950	31	591				
900	31	1,002	-11.8	69	328	8.2
850	31	1,443	- 9.1	54	318	14.0
800	31	1,912	- 8.9	53	313	16.9
750	31	2,411	-10.1	55	303	21.4
700	31	2,942	-12.0	52	296	25.6
650	31	3,505	-14.7	55	292	29.7
600	31	4,108	-18.0	54	294	33.6
550	31	4,748	-21.9	53	293	36.9
500	31	5,449	-26.5	51	290	42.2
450	31	6,198	-31.6	47	289	49.2
400	31	7,027	-37.4	43	287	49.4
350	31	7,936	-43.7		284	50.7
300	31	8,957	-50.6		284	56.2
250	31	10,126	-57.2		278	54.6
200	31	11,528	-59.3		280	56.2
175	31	12,365	-59.1		285	53.8
150	31	13,331	-58.9		286	51.9
125	31	14,472	-60.1		286	52.5
100	30	15,854	-61.2		287	47.6
80	29	17,237	-62.0		279	48.8
70	29	18,068	-62.1		280	48.0
60	28	19,029	-61.6		279	47.6
50	28	20,163	-60.4		277	46.0
40	27	21,571	-57.6		276	45.7
30	27	23,407	-52.7		272	52.7
25	27	24,586	-52.5			
20	27	26,031	-51.8			
15	27	27,905	-49.5			
10	23	30,592	-45.3			
7	20	33,026	-44.5			
5	17	35,268	-42.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1963

OAKLAND, CALIF. 1020 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	5.5	76	113	3.5
1000	31	170	7.7	66	95	3.1
950	31	[illegible]	7.3	56	59	3.7
900	31	1,039	7.7	40	23	2.9
850	31	1,509	6.9	33	341	3.3
800	31	2,006	4.8	29	330	6.6
750	31	2,530	2.3		337	7.8
700	31	3,084	- .9	30	342	8.9
650	31	3,668	- 4.6		338	8.7
600	31	4,298	- 8.4		343	8.7
550	31	4,964	-12.9		339	10.7
500	31	5,689	-18.1		328	11.3
450	31	6,460	-24.0		326	12.2
400	31	7,316	-30.8		334	14.2
350	31	8,249	-38.1		338	15.3
300	31	9,292	-46.5		347	17.5
250	31	10,481	-54.7		351	21.8
200	31	11,883	-61.5		328	26.4
175	30	12,706	-61.2		307	26.8
150	30	13,665	-60.4		297	31.3
125	29	14,796	-61.5		294	35.0
100	29	16,174	-63.5		296	33.6
80	28	17,543	-64.2		295	30.1
70	27	18,372	-63.6		294	28.6
60	27	19,313	-63.1		292	30.3
50	27	20,436	-62.5		291	29.5
40	26	21,810	-61.7		287	34.2
30	24	23,603	-59.8		277	41.8
25	24	24,747	-57.7		273	51.3
20	24	26,161	-55.8		269	60.6
15	24	28,000	-54.0		262	64.7
10	22	30,546	-49.7		256	65.5
7	19	32,974	-45.9		253	73.3
5	16	35,215	-40.5			

OKLAHOMA CITY, OKLA. 974 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	392	- 6.1	78		.0
1000	30	178				
950	30	586	- 3.6	56	216	4.7
900	30	1,012	- 2.1	45	255	8.5
850	30	1,468	- .8	39	261	10.9
800	30	1,952	- .6	34	260	14.6
750	30	2,466	- 2.4	32	263	20.2
700	30	3,012	- 4.7	[illegible]	271	25.3
650	30	3,588	- 7.9	29	270	29.1
600	30	4,210	-11.4		271	34.4
550	30	4,866	-15.5		268	38.5
500	30	5,545	-20.5		268	43.3
450	30	6,350	-25.9		270	48.8
400	30	7,200	-31.8		270	55.4
350	30	8,130	-38.7		269	62.4
300	30	9,171	-46.4		269	69.8
250	30	10,359	-54.4		269	76.9
200	30	11,770	-58.8		269	84.3
175	30	12,607	-59.0		268	85.5
150	30	13,572	-60.0		268	82.6
125	30	14,705	-62.1		269	73.1
100	28	16,082	-64.4		271	63.0
80	24	17,439	-64.0		271	[illegible]
70	23	18,262	-63.1		271	47.4
60	22	19,219	[illegible]		269	43.1
50	21	20,355	-59.1		266	36.9
40	18	21,777	-56.3		265	34.0
30	14	23,640	-51.7		261	[illegible]
25	11	24,841	-50.1		268	28.8
20	8	26,341	-47.4			
15	6	28,252	-47.4			

OLYMPIA, WASH. 1019 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	58	- .4	82	188	1.0
1000	31	208	.9	70	115	1.4
950	31	622	- .1	65	33	2.1
900	31	1,053	- .8	[illegible]	355	2.3
850	31	1,509	- 1.6	53	315	6.0
800	31	1,989	- 3.1	49	322	10.5
750	31	2,498	- 4.6	41	323	15.7
700	31	3,040	- 7.2	36	321	21.0
650	31	3,608	-10.3	[illegible]	321	24.1
600	31	4,227	-13.7	34	322	29.0
550	31	4,875	-17.7	34	321	33.8
500	31	5,591	-22.1	[illegible]	323	38.7
450	31	6,349	-27.3	34	322	42.9
400	31	7,196	-33.5		321	46.6
350	31	8,119	-40.6		320	50.5
300	31	9,150	-48.9		[illegible]	53.0
250	31	10,324	-57.5		321	53.2
200	31	[illegible]	-63.8		[illegible]	53.4
175	31	12,524	-64.9		321	50.9
150	31	13,468	-63.6		317	45.1
125	31	14,587	[illegible]		[illegible]	44.7
100	31	15,954	-64.7		311	45.7
80	31	17,312	-65.7		306	44.9
70	30	18,120	-66.0		[illegible]	45.7
60	30	19,051	-66.3		304	43.7
50	30	[illegible]	-66.6		304	45.3
40	[illegible]	21,519	-67.8		303	49.7
30	18	23,312	-65.3		[illegible]	53.0
25	17	24,444	-62.7		[illegible]	[illegible]
20	14	25,807	-60.3		[illegible]	52.7
15	8	27,572	[illegible]			

OMAHA, NEBR. 972 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	403	-13.2	78	331	4.3
1000	30	183				
950	30	576	-12.6	70	325	6.6
900	30	988	-11.3	62	[illegible]	12.2
850	30	1,428	[illegible]	[illegible]	305	14.4
800	30	1,896	[illegible]	54	295	17.7
750	30	2,394	-11.0	50	287	21.8
700	30	2,921	-13.1	47	[illegible]	27.0
650	[illegible]	3,482	-15.6	45	[illegible]	31.9
600	30	4,084	-18.6	44	285	40.6
550	30	4,723	-22.6	46	283	41.8
500	30	5,420	-27.2	45	[illegible]	45.5
450	30	6,166	-32.1	41	280	53.8
400	30	6,995	-37.5		[illegible]	56.9
350	[illegible]	7,904	-44.1		278	62.8
300	30	8,922	-51.0		278	69.2
250	30	10,091	-57.0		276	71.5
200	30	11,497	-58.6		276	73.6
175	30	12,338	-57.8		275	73.6
150	30	13,309	-58.1		276	68.6
125	30	14,455	-59.1		274	66.8
100	30	15,851	-60.0		[illegible]	63.9
80	30	17,240	-60.8		[illegible]	61.0
70	30	18,077	-60.1		273	[illegible]
60	30	19,033	-59.8		[illegible]	54.4
50	29	20,180	-58.1		264	55.0
40	28	21,591	-55.4		[illegible]	55.2
30	26	23,448	-50.8		253	57.3
25	14	24,617	-50.6			
20	[illegible]	26,179	-50.4			

[illegible] 996 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	200	-12.2	74	291	2.1
1000	30	170			323	2.3
950	30	564	-11.4	68	295	8.5
900	30	981	- 9.2	62	289	14.0
850	30	[illegible]	- 8.7	57	282	19.6
800	30	1,892	- 9.7	54	280	23.5
750	[illegible]	2,390	-10.6	50	283	28.6
700	30	2,919	-13.1	48	[illegible]	32.8
650	30	3,480	-15.5	46	278	35.6
600	30	4,081	-18.9	[illegible]	276	41.0
550	[illegible]	4,721	-22.2	[illegible]	[illegible]	48.8
500	30	5,420	-26.6	40	271	54.8
450	30	6,168	-31.8		272	59.3
400	30	6,996	-37.7		272	65.7
350	29	7,904	-44.0		[illegible]	69.4
300	[illegible]	8,924	-50.7		[illegible]	78.9
250	[illegible]	10,097	-56.1		269	62.4
200	29	11,506	-58.0		271	79.9
175	29	12,350	-57.0		270	76.4
150	29	13,325	-57.5		[illegible]	68.6
125	29	14,473	-58.5		271	59.8
100	28	15,875	-59.8		269	53.6
80	28	17,271	-59.6		[illegible]	52.5
70	28	18,111	-59.6		268	50.1
60	28	19,073	-59.1		[illegible]	49.2
50	27	20,215	-57.2		262	49.9
40	27	21,637	[illegible]		259	52.8
30	27	23,497	-51.2		253	52.8
25	27	24,688	-49.7		253	51.9
20	27	26,153	-48.4		252	50.9
15	26	28,058	-46.7		[illegible]	54.0
10	23	30,777	-42.0		220	52.5
7	19	33,245	-38.7		213	59.8
5	17	35,564	-34.6			

PITTSBURGH, PA. 976 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	353	- 7.3	82	261	3.7
1000	30	163				
950	30	567	- 6.3	72	250	9.1
900	30	987	- 7.4	70	255	18.3
850	30	1,432	- 8.3	68	261	24.9
800	30	1,902	- 9.3	64	261	26.4
750	30	2,401	-10.9	61	262	30.3
700	30	2,928	-13.0	58	263	35.8
650	30	3,489	-15.4	51	263	39.6
600	30	4,093	-18.4	45	262	48.8
550	30	4,734	-22.1	47	265	52.7
500	30	5,433	-26.5	45	265	58.7
450	30	6,179	-31.6		264	67.4
400	30	7,011	-37.1		265	70.3
350	30	7,924	-43.1		266	78.1
300	30	8,949	-49.5		266	84.7
250	30	10,126	-55.5		276	73.3
200	30	11,541	-56.4		275	69.0
175	30	12,389	-56.3		275	61.8
150	30	13,366	-57.0		274	55.8
125	30	14,517	-58.5		276	51.3
100	30	15,917	-59.2		271	44.9
80	30	17,318	[illegible]		272	40.4
70	30	18,159	-57.7		271	36.1
60	30	19,132	-57.4		269	30.9
50	28	20,284	-56.4		269	38.3
40	27	21,709	-52.8		269	39.2
30	27	23,577	-50.4		257	35.0
25	25	24,774	-48.9		251	34.6
20	25	26,246	-46.7		247	30.9
15	25	28,163	-44.6		248	36.7
10	22	30,894	-41.6		238	[illegible]
7	[illegible]	33,226	-38.7		225	28.2
5	17	35,644	-37.0			

PONAPE, CAROLINE IS. 1004 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	25.1	88	76	4.1
1000	31	71	25.1	86	78	5.8
950	31	512	23.1	81	78	13.8
900	31	994	20.3	[illegible]	84	15.0
850	31	1,487	18.1	[illegible]	91	15.9
800	31	2,006	16.1	68	94	15.0
750	31	2,549	13.2	66	[illegible]	14.0
700	31	3,132	9.6	66	95	15.2
650	31	3,742	6.4	62	[illegible]	18.7
600	31	4,397	2.8	58	89	22.7
550	31	5,095	- 1.0	58	94	23.1
500	31	5,853	- 5.3	[illegible]	96	[illegible]
450	31	6,674	- 9.8	44	89	24.1
400	31	7,575	-15.6	38	89	25.5
350	31	8,569	-22.5	[illegible]	89	24.3
300	29	9,684	-31.0		89	23.5
250	29	10,951	-41.2		98	22.5
200	29	12,427	-53.8		100	22.2
175	29	13,272	-60.6		[illegible]	23.5
150	28	14,214	-68.2		[illegible]	[illegible]
125	29	15,287	-76.0		[illegible]	26.6
100	27	16,551	-82.8		96	25.8
80	22	17,800	[illegible]		110	11.5
70	20	18,561	-76.7		189	1.7
60	20	19,455	-72.6		83	1.6
50	18	20,544	-67.7		94	16.7
40	18	[illegible]	-63.7		87	[illegible]
30	18	23,689	[illegible]		89	49.4
25	18	[illegible]	-55.0		88	49.7
20	17	26,292	-50.7		91	47.8
15	16	[illegible]	[illegible]		95	26.0
10	10	[illegible]	-42.6			

PORTLAND, ME. 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	20	- 7.0	78	309	4.5
1000	31	130	- 5.8	66	300	5.1
950	31	[illegible]	- 6.6	64	304	8.4
900	31	952	- 8.4	[illegible]	[illegible]	[illegible]
850	31	1,394	-10.0	68	290	11.1
800	31	1,862	-10.1	54	274	16.5
750	31	2,357	-11.4	51	264	21.8
700	31	2,886	-13.4	[illegible]	258	28.6
650	31	[illegible]	-16.4	51	256	33.6
600	31	4,045	-19.5	47	[illegible]	40.0
550	31	4,684	-23.7	[illegible]	252	44.1
500	31	5,379	-27.8	47	[illegible]	47.0
450	31	6,125	-32.7	[illegible]	256	51.7
400	31	6,950	-38.2		253	60.2
350	31	7,858	-44.1		252	66.3
300	31	8,877	-50.4		253	69.2
250	31	10,053	-55.4		[illegible]	72.7
200	31	11,471	-55.7		255	70.9
175	31	12,324	-54.6		[illegible]	[illegible]
150	31	13,311	-54.8		254	66.8
125	30	14,477	-55.4		[illegible]	58.1
100	28	[illegible]	-55.4		253	53.2
80	28	17,323	-54.9		249	47.8
70	28	18,181	-54.8		249	42.0
60	27	19,166	-53.8		244	43.5
50	27	20,340	-52.6		242	42.7
40	25	21,794	-51.0		239	39.4
30	[illegible]	23,668	-48.4		238	38.7
25	[illegible]	24,984	-47.2		236	42.4
20	18	26,378	-44.6		241	62.0
15	8	28,354	-43.4			

RAPID CITY, S. DAK. [illegible] MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	966	-12.5	63	341	8.7
1000	31	[illegible]				
950	31	594				
900	31	1,011			331	8.9
850	31	1,450	-11.0	50	317	15.2
800	31	1,914	-12.8	[illegible]	318	22.9
750	31	2,404	-13.9	[illegible]	316	29.0
700	31	[illegible]	-16.0	56	311	30.5
650	31	3,481	-18.1	54	303	31.7
600	31	4,079	-21.2	53	298	34.4
550	31	4,711	-25.5	53	296	38.5
500	31	5,400	-30.0	50	294	[illegible]
450	31	6,139	-35.1	44	[illegible]	45.7
400	31	6,954	-40.3		[illegible]	51.3
350	31	7,853	-46.2		[illegible]	56.7
300	31	8,865	-52.2		[illegible]	[illegible]
250	31	10,029	-57.7		[illegible]	59.5
200	31	11,431	-59.4		[illegible]	60.0
175	31	12,268	-59.0		[illegible]	61.2
150	31	13,235	-59.1		284	61.8
125	29	14,373	-60.0		282	57.5
100	28	15,752	-61.6		284	59.7
80	27	17,132	-62.7		[illegible]	57.1
70	[illegible]	17,979	-62.7		283	58.1
60	25	18,923	-62.7		[illegible]	60.0
50	25	20,051	-61.3		277	57.1
40	24	21,462	-59.1		[illegible]	59.3
30	20	[illegible]	-56.3		266	68.2
25	17	24,426	-51.4		[illegible]	78.9
20	12	25,857	-48.0			
15	8	27,842	-43.2			

ST. CLOUD, MINN. [illegible] MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	316	-18.3	78	[illegible]	4.7
1000	31	172				
950	[illegible]	558	-17.5	71	306	[illegible]
900	31	[illegible]	-16.4	67	308	14.8
850	31	1,392	-15.7	[illegible]	307	19.0
800	31	1,849	-16.2	45	302	22.5
750	31	2,335	-17.6	41	298	24.9
700	31	2,848	-19.6	41	294	28.4
650	[illegible]	3,394	-22.0	[illegible]	293	31.5
600	31	3,982	[illegible]	43	290	37.7
550	31	4,605	-28.5	[illegible]	287	42.9
500	31	5,287	-32.9	44	[illegible]	47.6
450	31	6,022	-37.6		284	52.5
400	31	6,824	-43.1		284	56.7
350	31	7,714	-48.4		284	62.0
300	31	8,717	-53.4		284	71.3
250	31	9,880	-57.1		282	70.7
200	31	11,288	-57.7		281	67.6
175	31	12,131	-57.3		277	68.6
150	31	13,105	-57.5		275	65.7
125	31	14,254	-58.9		[illegible]	67.6
100	31	15,651	-59.8		274	67.2
80	31	17,045	-59.8		[illegible]	68.6
70	31	17,888	-59.9		270	63.9
60	31	18,844	-59.5		266	65.1
50	31	19,990	-57.5		265	65.7
40	28	21,395	-55.2		260	72.1
30	26	23,256	-50.8		251	67.8
25	25	24,449	-50.0		248	73.1
20	24	25,929	-47.0		[illegible]	69.8
15	22	27,828	-45.2		238	67.2
10	20	30,569	-39.3		239	83.9
7	15	33,100	-34.8		[illegible]	86.5
5	7	35,503	-33.8			

ST. PAUL IS., ALASKA 1005 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	- .8	87	97	11.3
1000	31	45			73	11.5
950	31	455	- 1.7	79	114	17.3
900	31	884	- 2.5	73	133	18.7
850	31	1,336	- 3.8	62	140	20.0
800	31	1,814	- 5.2	54	138	20.2
750	31	2,318	- 7.5	47	135	16.3
700	31	2,853	-10.2	44	147	18.7
650	31	3,421	-13.6	42	148	19.4
600	31	4,026	-17.2	39	152	18.5
550	31	4,673	-21.1	39	150	18.8
500	31	5,371	-25.9		153	19.2
450	31	6,123	-31.1	41	157	18.7
400	31	6,952	-37.3		158	24.3
350	31	7,862	-43.8		166	24.9
300	31	8,881	-51.0		171	28.2
250	31	10,052	-55.9		184	30.3
200	31	11,471	-55.3		183	25.5
175	29	12,320	-53.9		191	21.6
150	29	13,311	-53.7		199	19.4
125	25	14,477	-54.2		206	16.3
100	23	15,912	-55.0		228	15.7
80	20	17,333	-55.8		248	15.7
70	19	18,175	-56.4		261	16.1
60	15	19,137	-57.1		277	18.7
50	13	20,260	-57.8		284	29.7
40	11	21,669	-58.1		293	29.7
30	11	23,481	-57.8		302	37.1
25	11	24,631	-57.7			
20	11	26,039	-57.4			
15	6	27,938	-55.1			
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SALEM, OREG. 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	- .6	81	297	1.0
1000	31	207	.7	68	[illegible]	2.1
950	31	620	1.7	[illegible]	354	2.3
900	31	1,055	1.3	54	[illegible]	2.1
850	31	1,515	.5	51	321	4.9
800	31	2,000	- .9	44	323	9.9
750	31	2,513	- 2.7	[illegible]	324	15.7
700	31	3,059	- 5.3	35	322	18.3
650	31	3,634	- 8.6	36	320	[illegible]
600	31	4,254	-11.9	34	320	27.0
550	31	4,906	-15.8	36	320	30.9
500	31	5,627	-20.5	[illegible]	319	33.4
450	31	6,390	-26.0	34	[illegible]	36.3
400	31	7,241	-32.3		[illegible]	39.4
350	31	8,169	-39.7		317	38.1
300	31	9,204	-48.0		316	41.0
250	31	10,382	-56.9		313	41.4
200	31	11,769	-64.1		312	42.0
175	31	12,585	-65.0		311	42.0
150	31	13,531	-63.3		311	43.9
125	31	14,654	-63.1		[illegible]	41.6
100	31	16,022	-64.4		[illegible]	44.5
80	31	17,383	-65.0		300	44.5
70	31	18,200	-65.1		[illegible]	42.9
60	31	19,136	-65.6		296	46.2
50	31	20,241	-66.6		293	49.5
40	30	21,607	-65.5		290	51.5
30	30	23,358	-65.0		[illegible]	56.5
25	28	24,470	-64.4		280	61.0
20	25	25,859	-61.2		273	71.9
15	18	27,750	-52.0		268	76.9
10	5	30,489	-41.1			

SALT LAKE CITY, UTAH 876 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,288	- 9.7	79	160	1.7
1000	31	251				
950	31	652				
900	31	1,079				
850	31	1,522	- 5.2	64	192	2.7
800	31	1,998	- 5.5	54	240	4.7
750	31	2,506	- 7.9	52	285	9.3
700	31	3,037	-10.1	53	[illegible]	17.1
650	31	3,605	-12.4	51	299	20.6
600	31	4,214	-15.8	49	306	24.9
550	31	4,865	-19.6	46	[illegible]	29.5
500	31	5,568	-24.0	43	[illegible]	33.8
450	31	6,327	-29.1	42	308	39.1
400	31	7,162	-34.5		314	42.0
350	31	8,083	-41.1		316	40.4
300	31	9,113	-48.7		[illegible]	37.3
250	31	10,290	-56.1		[illegible]	38.1
200	31	11,690	-60.9		311	38.7
175	31	12,519	-60.9		303	38.5
150	31	13,478	-60.2		300	38.3
125	31	14,612	-61.4		298	41.0
100	31	15,991	-62.7		298	40.6
80	29	17,375	-63.9		294	39.2
70	29	18,200	-63.9		[illegible]	39.1
60	28	19,146	-63.2		295	36.1
50	28	20,270	-62.5		295	36.9
40	27	21,662	-60.6		[illegible]	39.8
30	25	23,452	-60.2		[illegible]	50.9
25	21	24,622	-57.0		281	55.6
20	20	26,050	-54.1		279	67.2
15	17	27,872	-52.7		275	81.6
10	8	30,463	-49.5			

SAN ANTONIO, TEXAS [illegible] MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	3.8	[illegible]	352	4.5
1000	31	[illegible]				
950	31	594	5.4	56	310	3.9
900	31	1,016	6.7	47	[illegible]	5.1
850	31	1,505	6.7	41	238	11.3
800	31	[illegible]	6.2	[illegible]	251	15.7
750	31	2,528	[illegible]	30	262	22.3
700	31	3,089	1.7		265	[illegible]
650	31	3,681	- 1.8		261	32.1
600	31	4,315	- 5.9		257	36.5
550	31	4,988	-10.2		[illegible]	41.0
500	31	5,719	-15.0		[illegible]	48.0
450	31	6,502	-20.3		259	52.5
400	31	7,371	-26.3		262	61.8
350	31	[illegible]	-33.0		262	70.3
300	31	[illegible]	-41.2		[illegible]	79.9
250	31	10,602	-50.3		[illegible]	92.9
200	[illegible]	12,033	-58.0		262	2.6
175	29	12,873	-60.9		263	1.4
150	29	13,825	-63.2		[illegible]	87.2
125	28	14,937	-66.9		266	76.7
100	28	16,273	-69.6		267	62.6
80	27	17,605	-69.3		271	39.8
70	26	18,413	-68.0		271	32.3
60	26	19,337	-65.8		271	[illegible]
50	26	20,456	-62.0		252	14.8
40	26	21,854	-57.2		256	11.9
30	25	23,692	-53.7		246	5.2
25	25	24,870	-52.2		119	4.5
20	[illegible]	26,315	-51.6		[illegible]	3.7
15	14	28,172	-50.0		[illegible]	5.6

SAN DIEGO, CALIF. 1004 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	8.0	77	58	2.3
1000	31	161	9.8	70	61	2.3
950	31	587	9.6	56	121	.6
900	31	1,036	8.0	49	188	.8
850	31	[illegible]	6.4	43	240	1.4
800	31	2,002	[illegible]	40	[illegible]	4.3
750	31	2,523	2.3	37	290	7.4
700	31	[illegible]	- .7	[illegible]	[illegible]	9.5
650	31	[illegible]	- 3.9		289	10.7
600	31	4,297	- 7.7		282	12.4
550	31	4,959	-12.1		[illegible]	14.2
500	31	[illegible]	-17.2		[illegible]	18.1
450	31	6,464	-22.6		[illegible]	20.0
400	31	7,329	-29.3		279	21.6
350	31	8,270	-36.6		280	[illegible]
300	31	9,320	-44.5		273	33.2
250	31	10,520	-52.5		269	42.0
200	31	11,939	-58.5		256	52.3
175	31	12,777	[illegible]		267	54.6
150	31	13,743	[illegible]		268	50.9
125	31	14,874	-62.5		[illegible]	47.8
100	31	16,241	-65.6		272	39.1
80	31	17,594	-66.0		278	32.4
70	31	18,414	-65.3		[illegible]	29.3
60	31	19,347	-63.9		280	26.0
50	31	20,467	-62.4		281	22.7
40	31	21,854	-59.1		274	[illegible]
30	29	23,676	-54.6		272	31.7
25	[illegible]	24,852	-53.5		264	33.8
20	[illegible]	26,286	-53.6		[illegible]	36.3
15	14	28,141	-53.0		[illegible]	36.1

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JANUARY 1963

SAN JUAN, P. R. 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	[illegible]	22.1	85	91	2.5
1000	31	145	[illegible]	[illegible]	[illegible]	11.1
950	31	[illegible]	19.9	[illegible]	85	14.4
900	31	1,[illegible]	16.6	77	[illegible]	14.0
850	31	1,540	13.6	76	91	11.5
800	31	2,050	11.6	[illegible]	90	11.1
750	31	2,585	9.6	49	90	10.3
700	31	3,158	7.1		[illegible]	[illegible]
650	31	3,757	4.1		73	5.4
600	31	4,411	.9		57	5.4
550	31	5,094	- 3.5		[illegible]	5.4
500	31	[illegible]	- 8.[illegible]		[illegible]	6.0
450	31	6,650	-13.9		339	[illegible]
400	31	[illegible]	-20.6		[illegible]	10.7
350	31	8,517	- [illegible]		313	15.2
300	31	9,606	-36.2		[illegible]	20.0
250	31	10,845	-45.5		288	27.8
200	[illegible]	12,298	[illegible]		282	34.8
175	[illegible]	13,137	-60.6		[illegible]	36.7
150	[illegible]	[illegible]	[illegible]		288	35.8
125	[illegible]	15,178	-71.[illegible]		[illegible]	30.5
100	[illegible]	16,478	-76.7		295	19.8
80	[illegible]	17,754	-78.2		[illegible]	5.1
70	[illegible]	18,530	-75.4		[illegible]	5.2
60	[illegible]	19,428	-69.[illegible]		69	10.5
50	29	20,532	-64.0		[illegible]	10.5
40	28	21,914	-59.4		[illegible]	13.6
30	27	23,723	-56.3		79	23.9
25	26	[illegible]	-53.9		83	29.0
20	25	26,316	-51.9		93	29.7
15	24	28,198	-48.9		93	29.1
10	[illegible]	[illegible]	-44.1		97	[illegible]
7	11	[illegible]	-42.1			
5	[illegible]	35,642	[illegible]			

SANTA MONICA, CALIF. 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	38	10.1	[illegible]	24	4.7
1000	31	160	12.0	[illegible]	[illegible]	4.1
950	31	[illegible]	10.0	[illegible]	95	3.7
900	31	1,036	7.9	[illegible]	124	3.1
850	31	1,506	6.1	44		.0
800	31	2,001	4.[illegible]	[illegible]	322	3.1
750	31	2,522	2.1	[illegible]	307	5.8
700	31	3,079	- .9	[illegible]	[illegible]	6.9
650	31	3,663	- 4.2		288	9.7
600	31	4,294	- 8.3		285	9.9
550	31	4,957	-12.5		[illegible]	10.1
500	31	5,686	-17.3		[illegible]	12.8
450	31	6,460	-23.1		282	16.7
400	31	7,319	-29.9		279	20.0
350	31	8,256	-37.2		279	21.8
300	31	9,303	-45.4		280	27.0
250	31	10,497	-53.3		275	34.4
200	29	11,916	-58.9		266	40.0
175	28	12,752	-59.4		266	44.9
150	28	13,715	-60.4		269	46.8
125	28	[illegible]	-62.6		[illegible]	41.4
100	28	16,210	-65.3		[illegible]	36.5
80	27	17,567	-65.5		281	32.3
70	27	18,384	-65.0		[illegible]	31.1
60	26	19,324	-64.0		284	27.8
50	26	20,444	-62.7		288	24.7
40	26	21,827	-60.4		280	25.3
30	25	23,632	-56.5		275	36.7
25	24	24,801	-54.8		271	42.2
20	24	26,232	-5[illegible].7		265	49.4
15	22	28,087	[illegible]		255	[illegible]
10	17	30,704	-50.6		243	55.4

SAULT STE. MARIE, MICH. 988 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	221	-16.0	73	[illegible]	1.2
1000	31	130				
950	31	516	-14.2	70	255	7.6
900	31	928	-15.3	71	267	11.9
850	31	1,358	-17.1	65	272	15.3
800	31	1,812	-18.1	62	275	19.8
750	31	2,297	-18.6	58	274	21.6
700	31	2,806	-20.6	53	274	24.5
650	31	3,354	-23.2	[illegible]	273	27.4
600	31	3,935	-26.2	[illegible]	271	33.0
550	31	4,560	-29.5	44	274	37.5
500	31	5,234	-33.5		271	41.0
450	31	5,966	-38.4		271	45.5
400	31	6,767	-43.8		270	50.1
350	31	7,653	-49.4		270	54.0
300	31	8,653	-54.5		269	61.4
250	31	9,811	-57.6		271	57.9
200	31	11,224	-55.9		273	[illegible]
175	31	12,075	-55.7		271	55.8
150	31	13,057	-55.8		[illegible]	57.3
125	29	14,228	-56.6		270	56.7
100	29	15,642	-57.0		267	56.0
80	29	17,052	-57.6		265	56.9
70	29	17,901	-57.2		262	58.1
60	29	18,873	-56.4		257	[illegible]
50	29	20,035	-54.6		256	56.3
40	29	21,473	-51.8		252	57.5
30	29	23,248	-49.9		251	58.5
25	29	24,544	-48.3		249	57.1
20	27	26,026	-47.0		248	60.6
15	26	27,956	-43.5		249	64.5
10	23	30,728	-39.0		237	67.2
7	22	[illegible]	-37.4		236	46.2
5	18	[illegible]	-33.7			

SHEMYA, ALASKA 989 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	38	1.[illegible]	88	68	9.5
1000	31	- 5[illegible]			61	18.3
950	31	356	- .8	82	77	13.8
900	31	788	- [illegible]	83	90	14.6
850	31	1,238	- 6.2	78	93	14.0
800	31	1,711	- 8.4	70	93	13.4
750	31	2,209	-10.7	62	94	13.8
700	31	2,738	-13.4	56	95	16.1
650	31	3,295	-16.5	52	102	17.9
600	31	3,897	-20.1	46	102	17.7
550	31	4,527	-24.2	44	103	20.6
500	31	5,225	-29.2	41	103	23.1
450	31	5,961	-34.7		103	25.5
400	31	6,783	-40.2		106	[illegible]
350	31	7,682	-46.5		102	29.9
300	31	8,692	-51.7		[illegible]	[illegible]
250	31	9,872	-51.9		119	22.5
200	31	11,327	-49.0		125	17.1
175	31	12,206	-47.9		145	13.8
150	31	13,224	-47.6		147	11.9
125	31	14,427	-48.2		164	8.7
100	30	15,894	-48.6		201	6.4
80	28	17,356	-49.9		217	4.7
70	26	18,224	-50.8		249	5.6
60	25	19,217	-51.4		272	7.2
50	25	20,400	-51.7		285	8.2
40	23	21,834	-52.0		299	10.9
30	20	23,673	-52.6		311	16.9
25	20	24,852	-52.1		323	18.5
20	19	26,309	-51.6		334	21.4
15	18	28,158	-50.7		349	23.3
10	9	30,833	-49.8			

SHREVEPORT, LA. 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	79	1.0	82	321	1.2
1000	31	179	.8	69	332	1.0
950	31	599	2.1	58	244	5.8
900	31	1,030	3.1	57	253	11.1
850	31	1,494	2.9	46	257	17.3
800	31	1,984	1.8	41	260	19.8
750	31	2,505	- .2	39	258	24.9
700	31	3,052	- 2.8	40	259	28.8
650	31	3,6[illegible]	- 5.7	34	258	35.4
600	31	4,260	- 8.9		[illegible]	40.4
550	31	4,925	-12.9		260	45.7
500	31	5,649	-18.1		261	50.3
450	31	6,421	-23.3		262	56.2
400	31	7,280	-29.2		261	63.7
350	31	8,221	-36.0		262	73.4
300	31	9,275	-43.8		261	80.2
250	31	10,475	-52.4		264	91.7
200	31	11,893	-59.1		267	94.6
175	30	12,729	-60.6		269	95.0
150	30	13,686	-61.9		268	85.7
125	30	14,809	-64.2		270	75.0
100	30	16,167	-66.6		268	65.9
80	29	17,517	-67.0		266	49.7
70	28	18,338	-65.9		266	46.0
60	28	19,263	-63.5		265	39.1
50	25	20,393	-60.2		262	32.3
40	25	21,791	-56.9		251	26.0
30	24	[illegible]	-53.4		250	19.8
25	24	24,812	-52.0		244	16.7
20	23	26,258	-51.4		233	14.2
15	22	28,128	-50.8		204	13.8
10	20	30,763	-48.3		197	31.7
7	17	33,081	-45.3		209	35.0
5	16	35,348	-41.5			

SPOKANE, WASH. [illegible] MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	[illegible]	7[illegible]	- 8.0	70	141	1.7
1000	[illegible]	223				
950	[illegible]	[illegible]				
900	[illegible]	1,048	- 7.5	67	213	2.5
850	31	1,494	- 7.4	62	[illegible]	7.4
800	31	1,967	- 7.0	58	[illegible]	13.2
750	31	2,469	- 8.6	56	307	[illegible]
700	31	3,002	-11.0	[illegible]	[illegible]	22.0
650	31	3,567	-14.0	51	310	27.0
600	31	4,173	-17.1	46	315	29.7
550	31	4,817	-20.8	45	312	37.9
500	31	5,519	-25.2	42	317	40.6
450	31	6,268	[illegible]		317	45.5
400	31	7,106	-35.8		[illegible]	50.9
350	31	8,021	-42.3		319	53.8
300	31	9,047	-49.7		[illegible]	59.7
250	31	10,219	-57.3		[illegible]	62.8
200	31	[illegible]	-62.4		[illegible]	66.6
175	31	12,435	-61.9		[illegible]	61.2
150	31	[illegible]	-61.3		[illegible]	53.0
125	[illegible]	14,522	-61.4		[illegible]	53.6
100	[illegible]	15,900	-63.3		[illegible]	56.5
80	[illegible]	17,265	[illegible]		303	52.5
70	[illegible]	18,092	-65.5		[illegible]	53.4
60	[illegible]	19,033	-65.4		[illegible]	50.5
50	[illegible]	20,127	-65.5		293	55.0
40	[illegible]	21,496	-64.2		286	55.4
30	21	23,275	-61.2		277	65.9
25	18	24,422	-57.1		271	71.9
20	17	25,841	-51.5		265	72.1
15	8	27,694	-38.8			
10						

SWAN ISLAND, W. I. 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	10	24.4	77	59	8.4
1000	31	135	23.7	75	[illegible]	11.5
950	31	583	20.4	76	[illegible]	14.0
900	31	1,048	17.0	76	[illegible]	11.9
850	31	1,534	14.4	65	[illegible]	8.5
800	31	2,044	11.9	55	88	6.4
750	31	2,585	10.0	41	[illegible]	7.2
700	31	3,155	8.1		97	7.2
650	31	3,764	5.8		101	5.1
600	31	4,415	2.2		[illegible]	3.7
550	31	5,107	- 2.3		[illegible]	3.1
500	31	5,862	- 7.4		168	2.1
450	31	6,668	-12.9		[illegible]	2.5
400	31	7,562	-19.4		283	7.6
350	31	[illegible]	-26.8		[illegible]	13.6
300	31	9,633	-35.5		279	20.8
250	31	10,877	-45.2		268	29.0
200	31	12,332	-55.8		266	38.3
175	[illegible]	13,172	-61.0		262	45.3
150	31	14,118	-66.6		268	37.5
125	29	15,202	-73.0		266	30.7
100	27	16,486	-78.8		[illegible]	20.2
80	26	17,752	-78.9		267	4.5
70	25	[illegible]	-75.7		[illegible]	1.9
60	24	19,422	-70.2		86	7.6
50	24	20,525	-63.7		[illegible]	12.6
40	23	21,901	-60.4		87	26.0
30	22	23,713	-56.6		88	35.0
25	22	24,876	-53.6		88	37.7
20	21	26,322	-51.2		87	42.6
15	19	28,191	-50.7		[illegible]	38.3
10	[illegible]	30,885	-44.8			

TAMPA, FLA. 10[illegible]0 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	8	10.7	86	39	3.1
1000	31	171	12.7	76	[illegible]	3.5
950	31	600	12.6	[illegible]	236	2.7
900	31	1,056	11.1	61	262	8.4
850	31	1,531	[illegible]	52	263	12.8
800	31	2,032	7.4	50	[illegible]	15.7
750	31	2,559	5.3	44	256	18.8
700	31	3,124	2.3	43	259	22.5
650	31	[illegible]	- [illegible]	39	258	27.4
600	31	4,354	- 4.6	40	263	32.3
550	[illegible]	5,026	- 8.8	34	264	37.7
500	31	5,766	-13.3		263	46.4
450	31	6,555	-18.9		261	47.2
400	31	7,428	-25.0		263	49.5
350	[illegible]	8,285	-32.0		265	59.1
300	31	[illegible]	-39.9		[illegible]	66.6
250	31	10,674	-49.4		268	71.5
200	31	[illegible]	-58.1		266	78.7
175	[illegible]	[illegible]	-60.9		266	79.9
150	29	13,898	-62.9		266	77.3
125	29	15,008	-67.3		265	67.2
100	27	16,338	-71.1		262	53.0
80	27	17,657	-70.8		262	35.4
70	26	[illegible]	-68.3		257	26.6
60	25	19,385	-64.4		255	15.3
50	24	20,516	-60.5		252	7.6
40	23	21,917	-56.8		49	3.5
30	21	23,760	-53.0		91	12.0
25	20	24,947	-50.8		94	17.5
20	17	26,413	-48.8		105	25.3
15	5	28,267	-48.2			

TATOOSH IS., WASH 1022 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	31	4.3	74	71	11.1
1000	31	204	3.5	71	[illegible]	10.3
950	31	616	1.2	70	73	4.7
900	31	1,052	- [illegible]	67	348	2.7
850	31	1,508	- 1.3	[illegible]	318	7.2
800	31	1,990	- 2.2	45	319	12.2
750	31	2,496	- 4.2	38	323	17.5
700	31	3,042	- 6.6	38	325	20.2
650	31	3,612	- 9.9	[illegible]	328	23.1
600	31	4,231	-13.5	[illegible]	326	29.3
550	31	4,881	-17.3	36	325	34.4
500	31	5,596	-21.8	37	322	33.8
450	31	6,353	-27.2	[illegible]	322	37.3
400	31	7,202	-3[illegible]	40	318	38.1
350	31	8,125	-40.6		320	43.3
300	31	[illegible]	-49.0		315	48.4
250	31	10,331	-57.6		314	49.0
200	30	11,730	-63.9		310	47.4
175	30	12,545	-65.1		309	46.2
150	[illegible]	13,488	-63.5		307	46.4
125	[illegible]	14,617	-63.2		311	43.9
100	26	15,[illegible]98	-64.0		308	44.7
80	[illegible]	17,347	-65.8		305	45.1
70	24	18,176	-66.0		303	47.8
60	24	19,101	-66.2		302	47.[illegible]
50	24	20,204	-67.0		300	48.2
40	24	21,547	-67.8		300	48.2
30	22	23,274	-67.6		291	56.7
25	19	24,389	-66.2		285	65.1
20	17	25,758	-63.2			
15	15	27,542	-58.2			
10	13	30,173	-50.8			

TOPEKA, KANS. 989 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	269	- 8.9	78	337	2.5
1000	31	181				
950	31	578	- 9.1	64	[illegible]	3.9
900	31	998	- 6.6	54	298	9.9
850	31	1,445	- 6.2	45	295	12.6
800	31	1,919	- 7.1	43	291	15.2
750	31	2,421	- 7.9	44	288	20.4
700	31	2,955	-10.0	40	285	25.1
650	31	3,521	-13.0	[illegible]	283	28.0
600	31	4,130	-16.4	37	280	34.0
550	31	4,778	-20.3	39	277	40.2
500	[illegible]	5,478	-24.9	41	274	45.7
450	31	6,228	-30.1	40	275	49.4
400	31	7,066	-35.9	36	274	54.8
350	31	7,982	-42.4		275	61.0
300	31	9,008	-49.7		274	69.2
250	31	10,[illegible]	-56.3		274	71.3
200	31	11,591	-59.0		271	73.8
175	31	12,430	-58.6		269	74.2
150	31	13,399	-58.7		274	64.3
125	30	14,544	-60.0		277	59.3
100	30	15,933	-61.8		277	52.3
80	30	17,311	-62.4		275	49.9
70	30	18,142	-61.3		273	47.8
60	30	19,094	-60.6		273	43.7
50	30	20,234	-59.1		271	44.3
40	28	21,642	-56.4		263	44.7
30	26	23,494	-51.2		263	44.9
25	25	24,695	-50.2		261	45.1
20	20	26,142	-50.1		257	45.5
15	10	27,953	-48.4			

TRUK, CAROLINE IS. 10[illegible]9 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	2	26.5	[illegible]	55	[illegible]
1000	[illegible]	78	26.3	82	68	7.6
950	[illegible]	[illegible]	23.7	81	67	13.4
900	31	1,003	[illegible]	80	88	14.4
850	[illegible]	1,497	18.1	75	97	13.4
800	31	[illegible]	15.6	68	100	13.4
750	[illegible]	2,563	12.9	64	101	15.2
700	31	3,139	10.0	61	97	16.1
650	31	3,752	[illegible]	[illegible]	[illegible]	18.8
600	31	4,406	[illegible]	56	101	19.8
550	31	5,103	- 1.1	56	97	21.4
500	31	[illegible]	- 5.1	54	103	23.5
450	[illegible]	6,681	-10.0	49	103	23.3
400	31	7,585	[illegible]	41	100	22.3
350	30	8,580	[illegible]		99	22.0
300	30	9,695	-30.7		103	21.2
250	[illegible]	10,957	-41.[illegible]		106	21.6
200	28	12,433	-53.5		[illegible]	23.9
175	28	13,278	-60.4		111	[illegible]
150	28	14,222	-68.0		111	24.5
125	[illegible]	15,296	-76.0		110	25.6
100	24	16,561	-82.4		113	29.9
80	21	17,811	-80.6		[illegible]	15.7
70	20	18,579	-76.5		91	5.6
60	20	19,474	-71.5		[illegible]	1.6
50	20	20,560	-68.[illegible]		92	14.0
40	19	21,912	-64.5		95	37.9
30	[illegible]	23,692	-59.0		103	52.1
25	18	24,841	-56.2		96	59.5
20	17	26,269	-52.7		[illegible]	[illegible]
15	16	28,154	-47.6		103	34.2
10	11	30,870	-43.3			
7						
5						

TUCSON, ARIZ. 927 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	789	3.8	[illegible]	[illegible]	4.7
1000	31	166				
950	31	587				
900	31	1,031	8.6	46	144	[illegible]
850	31	1,502	6.7	42	[illegible]	4.1
800	31	1,998	4.2	41	236	7.6
750	31	[illegible]	1.6	39	[illegible]	10.7
700	31	3,074	- 1.0	32	267	15.0
650	31	3,660	- 4.0		267	18.1
600	31	4,289	- 7.9		266	21.6
550	31	4,955	-12.0		269	26.2
500	31	5,685	-16.8		268	29.5
450	31	6,459	-22.7		[illegible]	33.2
400	31	7,322	-28.8		267	39.4
350	31	8,264	-36.0		265	47.0
300	31	9,316	-44.0		264	55.4
250	31	10,516	-52.6		266	62.6
200	31	11,936	-57.9		265	69.9
175	31	12,776	-59.0		265	69.8
150	31	13,739	-61.1		265	67.2
125	31	14,865	-63.4		265	62.4
100	31	16,225	-66.4		267	50.9
80	31	17,577	-66.2		271	39.4
70	31	18,393	-65.3		275	34.2
60	31	19,329	-64.2		275	28.8
50	31	20,452	-61.5		275	25.6
40	31	21,845	-58.2		272	25.3
30	29	23,668	-53.9		266	26.6
25	[illegible]	24,842	-53.1		266	31.3
20	27	26,282	-53.3		[illegible]	28.0
15	23	28,131	-52.5		246	28.4
10	21	30,776	-45.6		228	31.9
7	16	33,181	-41.0		215	38.5
5	5	35,546	-34.2			

WAKE IS., PACIFIC AREA 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	30	5	24.6	76	62	.8
1000	[illegible]	114	23.9	75	71	.8
950	[illegible]	556	20.6	76		.0
900	[illegible]	1,027	17.6	73	306	2.5
850	[illegible]	[illegible]	15.6	51	287	4.1
800	30	2,029	14.0	43	[illegible]	6.0
750	30	2,567	12.8		270	9.1
700	30	3,148	10.0		269	11.9
650	[illegible]	3,756	6.3		268	13.6
600	30	4,411	2.6		270	15.5
550	[illegible]	[illegible]	- 1.6		275	19.2
500	30	5,862	- 6.1		278	23.3
450	30	6,674	-10.6		277	26.4
400	30	7,578	-15.9		275	25.3
350	30	8,571	-22.8		277	26.0
300	30	9,682	-31.6		286	26.0
250	29	[illegible]	-41.9		290	28.4
200	29	12,416	-53.4		289	26.6
175	29	13,262	-60.1		286	24.5
150	29	14,207	-67.3		281	24.7
125	[illegible]	15,286	-74.7		280	20.6
100	29	16,557	-81.5		277	15.2
80	[illegible]	17,804	-81.7		261	7.2
70	27	18,560	-77.4		227	1.7
60	27	19,461	-69.8		92	4.1
50	27	20,565	-63.7		86	7.2
40	27	21,945	-60.3		93	9.3
30	26	23,751	-57.2		90	14.6
25	25	24,908	-55.3		89	15.2
20	24	26,334	-53.4		80	12.2
15	24	28,195	-50.9		69	16.5
10	23	30,856	-46.6		88	14.8
7	22	33,245	-42.8		107	9.9
5	21	35,530	-35.5		[illegible]	1.9

WASHINGTON, D. C. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	84	- 5.9	73	303	3.1
1000	31	158			302	5.6
950	31	565	- 2.9	54	295	11.3
900	31	992	- 4.1	56	286	15.0
850	31	1,442	- 4.9	56	280	20.6
800	31	1,918	- 5.8	[illegible]	271	24.1
750	31	2,423	- 7.4	[illegible]	263	27.0
700	31	2,959	- 9.8	49	261	32.1
650	31	3,528	-12.4	42	264	37.5
600	31	4,136	-15.5	39	263	41.4
550	31	4,787	-19.5	36	263	45.7
500	31	5,491	-24.0		262	51.5
450	31	6,247	-29.0		262	58.5
400	31	7,086	-34.7		262	65.9
350	31	8,006	-40.8		262	76.2
300	31	9,039	-47.9		262	83.9
250	31	10,221	-55.3		268	86.9
200	31	11,633	-57.3		270	81.0
175	31	12,478	-56.7		271	75.2
150	31	13,455	-57.0		270	71.5
125	31	14,605	-58.5		267	65.7
100	31	16,000	-60.0		263	56.3
80	31	17,293	-60.0		264	50.9
70	31	18,237	-58.8		261	45.1
60	31	19,198	-57.7		259	40.2
50	31	20,355	-55.5		254	38.7
40	29	21,780	-53.4		247	29.9
30	29	23,646	-50.0		241	25.3
25	29	24,842	-48.4		234	25.3
20	29	26,316	-46.9		233	26.2
15	25	28,219	-45.5		238	35.6
10	19	30,934	-42.5		223	44.7
7	14	33,356	-39.7		221	58.5
5	10	35,681	-37.3			

WINNEMUCCA, NEV. 874 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
Surface	31	1,310	-11.7	72	117	1.4
1000	31	258				
950	31	656				
900	31	1,080				
850	31	1,524	- 3.1	46	158	1.0
800	31	2,005	- 2.6	41	255	3.7
750	31	2,514	- 4.4	40	296	9.3
700	31	3,057	- 6.4	37	308	13.4
650	31	3,630	- 9.0	35	313	18.1
600	31	4,250	-12.1	33	313	21.6
550	31	4,908	-15.6		316	26.6
500	31	5,625	-20.0		323	31.1
450	31	6,391	-25.6		330	31.1
400	31	7,242	-32.2		332	34.0
350	31	8,169	-39.6		341	34.0
300	31	9,206	-47.7		344	34.0
250	31	10,386	-56.1		350	34.4
200	31	11,777	-63.5		335	34.6
175	30	12,592	-62.8		325	33.2
150	28	13,537	-61.1		312	35.6
125	27	14,669	-61.4		310	35.2
100	27	16,047	-63.1		304	37.5
80	24	17,406	-64.0		305	37.1
70	24	18,229	-64.2		309	34.6
60	24	19,167	-64.1		305	35.6
50	24	20,284	-63.9		300	37.1
40	21	21,653	-62.6		301	37.9
30	19	23,455	-60.1		293	42.9
25	19	24,596	-59.0		287	47.8
20	16	26,027	-54.5			
15	10	27,911	-52.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	WINSLOW, ARIZ. 854 MB						YAKUTAT, ALASKA 1019 MB						YUMA, ARIZ. 882 MB						YUMA, ARIZ. 1003 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,492	- 7.1	78	170	1.4	31	12	- 1.2	91	96	2.7	30	1,196	- 5.7	43	334	2.5	30	131	5.4	36	19	2.1
1000	31	241					31	162			106	5.1	30	217					30	154			21	2.9
950	31	648					31	575	.1	75	177	5.2	30	626					30	578	11.2	31	334	6.8
900	31	1,078					31	1,005	- 1.7	75	216	5.2	30	1,055					30	1,029	8.9	31	332	6.0
850	31	1,528			162	2.5	31	1,459	- 3.3	72	243	[illegible]	30	1,512	2.0	31	157	7.0	30	1,500	6.5	31	332	5.4
800	31	2,008	- 2.1	49	259	7.0	31	1,938	- 4.7	68	265	11.3	30	1,999	.5	29	9	5.8	30	1,995	4.4	29	311	6.4
750	31	2,524	- 2.4	43	274	12.2	31	2,443	- 6.8	57	271	15.5	30	2,511	- 1.2	29	342	7.0	30	2,516	.1	31	296	7.9
700	31	3,068	- 3.9	38	278	14.0	31	2,981	- 9.2	51	271	16.9	30	3,064	- 3.2		326	10.1	30	3,031	- .2	26	284	10.7
650	31	3,646	- 5.9	36	281	15.5	31	3,546	-12.3	50	274	19.4	30	3,640	- 6.4		314	10.5	30	3,657	- 3.6	11	278	12.2
600	31	4,269	-10.2		282	21.4	31	4,159	-16.2	46	276	21.6	30	4,269	- 9.8		312	16.5	29	4,288	- 7.3	19	268	14.6
550	31	4,931	-14.3		279	25.6	31	4,805	-20.0	46	279	24.5	30	4,927	-14.2		311	19.4	31	4,953	-11.9	23	267	17.9
500	31	5,651	-19.5		283	30.9	31	5,511	-24.7	43	285	29.7	30	5,651	-19.2		312	20.8	29	5,683	-17.2	26	267	21.2
450	31	6,418	-24.8		283	33.4	31	6,263	-30.0	42	285	34.2	30	6,416	-24.8		307	23.1	29	6,455	-23.1	24	269	24.7
400	31	7,271	-31.1		284	36.7	31	7,101	-35.7	42	286	42.2	30	7,272	-31.5		310	23.3	29	7,316	-29.4	11	264	28.8
350	31	8,204	-38.1		280	42.2	31	8,017	-42.0		287	49.2	29	8,201	-38.8		303	26.4	29	8,255	-36.6	26	264	35.4
300	31	9,247	-46.1		278	46.2	31	9,044	-49.2		290	51.1	29	9,240	-47.3		309	28.2	28	9,302	-44.5		259	42.7
250	31	10,437	-54.4		275	51.1	31	10,219	-56.6		297	56.2	29	10,424	-55.3		304	31.5	28	10,498	-53.3		252	52.8
200	30	11,846	-59.2		273	59.7	31	11,611	-63.2		299	57.1	29	11,829	-60.9		291	35.2	28	11,911	-59.4		250	64.1
175	30	12,680	-60.4		272	60.4	31	12,428	-64.6		301	56.5	28	12,659	-60.6		283	41.6	28	12,745	-59.9		251	66.1
150	30	13,640	-60.5		272	63.9	31	13,370	-64.3		301	48.6	29	13,626	-60.4		277	45.3	27	13,704	-60.8		252	61.6
125	29	14,779	-62.7		273	56.2	31	14,488	-63.5		299	51.1	29	14,753	-61.9		281	42.0	26	14,832	-62.8		256	49.5
100	28	16,143	-64.8		275	48.0	30	15,852	-64.7		303	52.7	28	16,126	-64.6		284	38.9	25	16,196	-64.5		266	43.5
80	26	17,499	-65.2		276	43.9	28	17,198	-66.4		307	52.3	25	17,500	-65.2		282	34.2	19	17,546	-65.1		268	37.3
70	26	18,318	-64.6		278	41.0	28	18,005	-67.1		307	55.2	25	18,316	-64.6		286	29.3	17	18,366	-64.4		269	33.6
60	26	19,257	-63.7		279	39.2	28	18,933	-68.0		305	57.5	25	19,256	-64.0		287	32.1	16	19,310	-63.5		272	31.3
50	25	20,379	-61.8		276	35.4	26	20,023	-69.2		306	59.7	24	20,364	-63.7		284	33.0	13	20,431	-61.9		268	29.9
40	23	21,766	-58.9		271	34.2	20	21,341	-68.7		314	56.2	24	21,741	-60.6		278	36.7	13	21,819	-59.2		251	27.5
30	21	23,591	-54.8		270	43.5	13	23,070	-67.0		317	59.8	23	23,540	-57.7		274	45.5	11	23,632	-54.9			
25	20	24,758	-52.9		267	47.6	12	24,182	-63.6		324	61.0	22	24,693	-55.1		269	51.3	10	24,812	-54.1			
20	18	26,222	-52.9		263	47.2	9	25,598	-53.6				20	26,147	-53.5		263	54.6	9	26,246	-53.7			
15	12	28,066	-52.4				8	27,512	-47.5				16	27,998	-52.5		257	59.4	8	28,082	-53.3			
10													6	30,782	-48.0									

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles [illegible] above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 [illegible] a are not published for standard pr[illegible] lable

[illegible] Unless otherwise indicated, they are obtained from lithium chloride hygristors.

[illegible] height (geopotential) in units of 98 dynamic meter, temperature in degrees Celsius [illegible] humidity in percent, and resultant winds in degrees and knots.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. **JANUARY 1963**

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A M 78.7°	75.7°	70.7°	60.0°	*	P M 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Jan.									
4	----	----	1.23	----	----	----	----	----	----
5	----	----	----	----	----	1.40	1.21	1.12	1.02
6	(1.01)	(1.19)	----	(1.49)	----	(1.49)	(1.31)	(1.41)	1.30
7	1.11	1.24	1.35	1.44	1.54	1.52	1.36	1.27	1.14
9	1.09	1.19	1.30	1.41	1.42	1.36	1.21	1.11	.99
12	1.14	1.23	1.31	1.44	1.45	1.41	1.28	1.12	1.01
13	1.07	1.17	1.28	1.42	1.44	1.44	1.33	1.23	1.16
14	1.04	1.13	1.23	1.40	1.44	1.41	1.26	1.15	1.06
15	1.09	1.16	1.25	1.41	1.45	1.37	1.26	1.17	1.06
16	1.08	1.18	1.25	1.35	1.43	1.36	1.21	1.13	1.02
17	1.06	1.15	1.23	1.41	1.44	1.38	1.27	1.16	1.05
18	1.05	1.15	1.24	1.36	----	----	----	----	----
20	1.03	1.13	1.24	1.38	1.37	1.25	1.23	1.14	1.01
21	1.05	1.15	1.23	1.39	1.41	1.37	1.22	1.11	.99
22	1.03	1.17	1.27	1.38	1.43	1.37	1.24	1.14	1.05
23	1.08	1.16	1.28	1.41	1.39	1.34	1.19	1.07	.99
24	.96	1.06	1.21	1.37	1.41	1.37	1.23	1.14	1.03
25	.99	1.09	1.22	1.37	1.37	1.37	1.23	1.13	1.03
26	.94	1.05	1.18	1.36	1.42	1.39	1.25	1.11	1.04
27	1.01	1.11	1.23	1.38	1.43	1.36	1.16	1.00	.87
29	1.01	1.12	1.23	1.36	----	----	----	----	----
30	1.11	----	----	----	----	----	----	----	----
Averages	1.05	1.15	1.25	1.39	1.43	1.36	1.24	1.13	1.05

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Jan.									
2	----	----	----	----	1.28	----	1.18	1.04	----
10	0.77	0.90	1.04	----	1.06	----	.93	.78	.70
Averages	0.77	0.90	1.04	----	1.17	----	1.06	0.91	0.70

Inoperative from 14th

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Jan.									
6	HM 0.94	HM 1.05	HM 1.19	----	----	----	----	----	----
7	----	----	----	----	HS 1.29	----	----	----	----
8	----	----	HS 1.22	----	----	----	----	----	----
9	----	----	----	----	----	----	----	----	----
16	----	HM .98	HM 1.14	----	----	----	----	----	----
19	----	----	----	----	----	----	----	----	----
23	----	HS .97	HS 1.04	----	----	----	----	----	----
24	HS .95	HS .98	HS 1.11	----	HS 1.24	----	----	----	----
27	HS .99	HS 1.07	HS 1.19	----	----	----	----	----	----
28	----	----	----	----	----	----	----	----	----
Averages	0.96	1.01	1.15	----	1.27	1.23	1.14	0.94	0.85

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Jan.									
14	S 0.80	S 0.90	S 1.01						

MADISON, WIS.

Date	Sun's zenith distance: A M. 78.7°	75.7°	70.7°	60.0°	*	P M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Jan.									
14	1.00	1.10	1.24	----	----	----	----	----	----
15	----	----	----	----	S 1.36	----	S 1.26	S 1.13	S 1.03
16	----	----	----	----	----	----	M 1.13	----	----
23	S .87	S 1.00	1.16	----	1.29	----	1.12	----	----
24	.85	.94	1.10	----	1.29	----	S 1.17	S 1.02	S .91
27	.90	.99	1.11	----	S 1.29	----	1.12	1.04	S .96
Averages	0.91	1.01	1.15	----	1.31	----	1.16	1.06	0.97

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Jan.									
7	0.90	1.10	1.20	----	----	1.40	----	----	----
9	.90	----	----	----	----	----	----	----	----
10	1.00	----	----	----	----	----	----	----	----
15	----	----	----	----	----	----	----	----	1.00
18	.90	1.00	----	----	----	----	----	----	----
20	1.00	1.10	----	----	----	----	----	----	----
22	1.00	1.10	1.20	----	----	----	----	----	----
25	1.00	----	----	----	----	----	----	----	----
27	1.00	1.10	1.20	----	----	----	----	----	----
Averages	0.96	1.08	1.20	----	----	1.40	----	----	1.00

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	**2.69**	**3.36**
Jan.									
2	----	----	----	----	----	----	1.40	**1.31**	**1.24**
3	1.30	1.38	1.48	1.57	1.59	----	1.36	**1.30**	**1.24**
4	1.29	1.37	1.46	1.57	1.61	1.52	1.41	1.33	1.25
5	1.31	1.38	1.48	1.58	1.61	1.51	1.40	1.33	1.25
6	1.30	1.38	1.46	1.57	1.62	----	----	----	----
7	----	1.31	1.41	1.51	----	----	----	----	----
8	----	----	----	1.51	----	----	----	----	----
9	1.23	1.32	1.41	----	----	----	----	----	----
10	1.25	1.33	1.42	1.53	1.59	----	----	----	----
11	----	1.31	1.40	1.51	1.58	1.48	1.35	1.26	1.18
12	1.21	1.28	1.37	1.49	1.57	1.48	1.35	1.25	1.17
13	1.24	1.32	1.44	1.57	1.63	1.53	1.42	1.32	1.23
14	1.19	----	1.37	1.49	----	----	----	----	----
15	----	----	1.36	1.49	1.58	1.48	----	----	----
16	1.24	1.32	1.41	1.52	----	----	----	----	----
17	----	----	----	----	----	----	----	1.28	1.20
18	1.19	1.26	1.36	1.48	1.57	1.47	1.36	1.26	1.19
19	1.18	1.26	1.36	1.47	1.57	1.46	----	1.25	1.17
22	1.19	1.27	1.37	1.49	1.59	----	----	----	----
23	1.26	1.34	1.42	1.54	1.63	----	1.42	1.34	1.26
24	1.23	1.31	1.40	1.52	1.60	1.50	1.38	1.27	----
25	1.22	1.30	1.40	1.51	1.60	----	----	1.28	1.22
26	1.27	1.35	1.44	1.56	1.64	1.52	1.39	1.31	1.22
27	1.15	1.24	1.34	1.48	1.61	1.50	1.38	1.28	1.19
28	----	1.26	1.36	1.48	1.58	1.48	1.36	1.26	1.18
30	----	----	----	----	1.61	1.51	1.39	1.30	1.22
31	----	----	----	----	1.63	----	----	----	----
Averages	1.24	1.31	1.41	1.52	1.60	1.50	1.38	1.29	1.21

( ) Clouds present
S Slight haze - indeterminable
M Moderate haze - indeterminable
HS Slight haze
HM Moderate haze
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JANAURY 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	---	290	73	180	260	304	334	332	---	122	143	363	365	351	353	351	352	338	140	398	368	373	367	371	372	379	381	---	310	314	326	307
AMES IOWA	40	48	68	42	32	92	152	200	113	56	69	207	228	258	325	260	164	218	188	182	100	107	258	289	167	216	312	283	218	183	118	167
ANNETTE ALASKA	13	18	14	5	16	5	57	61	86	128	32	25	17	24	42	41	77	54	38	21	76	26	18	51	60	68	98	103	145	155	150	55
APALACHICOLA FLORIDA	337	239	355	363	169	59	184	385	347	117	311	198	164	240	234	130	181	317	22.	222	407	374	132	458	399	85	305	433	366	297	179	265
ASTORIA OREGON	8	16	132	116	165	180	166	42	39	189	196	185	19	55	66	114	85	194	196	182	58	195	208	34	178	140	156	50	192	20	11	115
ATLANTA GEORGIA	317	248	311	219	166	107	229	---	299	130	55	166	131	94	299	337	102	77	36	63	377	366	90	393	331	246	384	396	164	69	370	219
BETHEL ALASKA	29	17	53	55	63	48	62	47	9	17	19	20	15	3	9	37	13	35	16	26	3	5	3	26	34	6	34	48	108	23	15	29
BISMARCK N.DAK.	181	142	39	120	125	148	133	110	78	120	83	204	212	228	211	183	135	230	171	155	143	192	224	237	242	208	252	208	256	254	141	173
BLUE HILL MASS.	162	171	55	49	98	111	136	59	178	201	161	11	14	201	221	166	186	41	219	100	253	249	227	262	253	177	69	286	286	81	181	157
BOISE IDAHO	181	74	52	201	181	70	47	59	218	229	239	240	79	62	59	194	140	---	254	226	242	249	258	180	193	268	187	63	101	133	81	159
BOSTON MASSACHUSETTS	165	167	60	51	89	115	107	56	183	203	147	13	16	243	220	167	176	30	215	108	266	251	229	280	263	151	69	299	294	85	179	158
BROWNSVILLE TEXAS	341	350	301	251	166	329	227	394	375	391	366	73	141	132	84	154	206	184	259	314	412	346	204	168	396	339	73	53	315	261	370	257
CANTON ISLAND P.I.	507*	680*	724*	684*	705*	653*	717*	697*	689	699	715	733	711	691	698	682	600	600	715*	716	582	599	671	669	692	719	739	663	746	713	715	296
CAPE HATTERAS N.C.	314	299	261	260	275	191	49	154*	292	298	278	251	87	50	82	218	263	81	143	95	167	370	336	375	367	70	218	386	371	91	196	212
CARIBOU MAINE	75	123	145	60	83	96	105	56	159	91	184	51	36	---	118	---	196	77	154	48	160	119	69	170	223	161	37	172	237	170	273	126
CHARLESTON S.C.	350	343	346	312	225	90	343	250	362	350	298	107	160	118	203	188	260	65	33	59	359	401	295	440	395	71	352	449	234	99	292	253
CLEVELAND OHIO	133	153	71	32	66	354	351	645	139	108	4	19	138	159	181	186	153	114	90	104	210	69	72	227	219	155	161	255	205	94	261	165
COLUMBIA MISSOURI	130	52	31	35	42	32	148	263	259	29	32	206	304	190	291	277	227	206	70	314	209	115	337	335	158	150	357	340	81	155	113	177
CORVALLIS OREGON	41	39	148	---	---	---	---	9	127	208	220	215	91	83	99	54	101	162	232	221	216	194	242	166	224	201	252	27	274	88	---	151
DAVIS CALIFORNIA	152	95	167	257	270	201	178	263	212	124	306	303	286	268	278	254	268	234	306	264	283	273	226	222	82	178	75	44	52	31	30	198
DODGE CITY KANSAS	241	263	131	51	253	297	277	278	279	75	194	319	316	204	301	289	300	114	265	246	302	117	344	324	289	291	306	---	---	---	250	247
E. LANSING MICHIGAN	216	60	53	47	102	41	49	58	100	16	36	84	231	235	251	233	143	84	44	174	256	145	189	264	200	176	211	260	180	229	274	150
EL PASO TEXAS	193	247	224	353	349	258	380	360	385	377	318	165	405	403	394	399	384	281	323	426	410	424	418	433	434	436	391	381	432	433	382	361
ELY NEVADA	277	221	102	274	281	284	292	299	264	88	321	325	288	297	308	256	306	167	333	322	312	326	325	331	323*	351	281	152	86	81	65	235
FAIRBANKS ALASKA	6	2	---	17	19	14	10	10	6	3	4	3	5	10	3	5	35	4	3	10	8	12	14	8	12	18	46	37	45	11	7	13
FLAMING GORGE UTAH	267	240	135	99	240*	---	---	---	192	100	---	286*	126	186	167	163	107	148	328	265	222	241	316	314	---	331	297*	295	194	259	---	155
FORT WORTH TEXAS	225	295	156	32	45	343	339	336	324	324	263	297	367	364	357	331	225	350	87	263	371	355	395	389	140	140	350	251	69	141	165	261
FRESNO CALIFORNIA	179	65	148	203	248	245	272	266	258	172	235	293	273	263	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GAINESVILLE FLORIDA	---	302	389	359	268	8	279	279	297	264	299	100	57	74	200	75	170	228	228	185	320	326	37	387	300	55	130	257	297	310	202	223
GLASGOW MONTANA	---	---	---	---	---	---	---	---	45	100	165	190	107	116	135	101	81	198	62	91	87	183	200	167	193	232	184	216	247	253	194	154
GRAND JUNCTION COLO.	325	328	149	305	302	159	289	284	196	134	339	350	329	336	346	264	209	108	315	374	380	332	366	370	227	388	337	330	175	124	185	279
GREAT FALLS MONTANA	35	117	152	130	144	150	112	68	86	138	---	119	82	109	71	179*	89	174	45	74	62	133	140	115	146	215	116	195	158	216	168	113
GREENSBORO N.C.	321	312	297	302	178	171	141	134	310	260	218	240	124	168	311	342	257	178	38	159	357	346	141	396	374	52	380	425	388	68	310	248
GRIFFIN EXP.STA.GA.	385	315	372	282	139	90	231	256	360	170	86	268	166	83	323	427	74	66	51	73	446	438	153	470	411	291	460	455	137	74	294	253
INDIANAPOLIS INDIANA	72	133	214	---	---	---	---	95	264	114	207	72	211	263	247	278	245	232	68	202	307	167	230	347	188	133	363	368	181	178	308	211
INYOKERN CALIFORNIA	318	81	268	347	349	358	363	360	364	356	358	393	389	383	385	385	389	378	404	400	401	406	406	381	412	412	383	332	344	127	206	350
LAKE CHARLES LA.	---	196	296	66	---	159	312	336	262	165	187	49	228	209	334	354	75	78	---	65	394	88	196	395	72	116	369	273	86	86	66	197
LANDER WYOMING	221	203	130	99	188	214	246	214	181	185	237	271	251	250	264	262	218	169	262	226	279	182	315	248	296	315	310	281	231	259	261	234
LARAMIE WYOMING	221	213	150	71	251	169	226	237	198	144	207	274	198	235	236	176	210	126	289	219	260	145	287	118	176	301	256	283	175	171	159	205
LAS VEGAS NEVADA	280	81	11-	228	296	307	311	314	310	294	333	326	334	329	328	327	335	333	353	344	339	340	347	293	355	366	255	320	282	124	83	289
LEMONT ILLINOIS	51	27	25	70	101	34	85	118	81	22	19	186	248	247	161	219	149	206	62	213	262	90	285	306	121	178	317	305	177	233	269	157
LITTLE ROCK ARKANSAS	259	208	---	68	33	43	239	258	189	238	64	105	312	304	283	300	224	261	25	253	319	192	288	337	106	29	322	348	30	80	178	196
LOS ANGELES CALIF.WB	165	54	268	289	294	---	308	244	183	237	253	299	334	306	322	307	292	156	302	342	336	299	240	265	52	294	106	144	141	179	55	237
LOS ANGELES CALIF.CO	171	46	256	263	287	297	304	276	110	259	219	293	322	304	314	293	287	119	302	337	335	295	271	214	28	294	184	138	159	185	54	233
MANHATTAN KANSAS	15	121	74	7	12	284	244	255	257	2	64	260	303	173	295	212	171	172	210	270	280	68	333	282	231	165	335	316	103	212	215	191
MATANUSKA ALASKA	---	10	15	43	7	7	18	54	16	13	4	13	6	11	11	55	24	3	32	21	4	19	24	33	39	81	27	89	90	68	88	30
MAUNA LOA OB.HAWAII	---	---	555	560	560	523	433	440	531	564	559	551	576	557	555	556	---	564	516	542	448	588	599	592	607	605	597	595	555	561	603	553
MEDFORD OREGON	49	44	73	80	84	92	132	86	100	234	239	240	224	222	185	186	59	180	250	233	227	217	231	223	231	226	261	105	91	45	39	157
MIAMI FLORIDA	378	393	398	380	233	183	398	280	425	389	---	---	---	---	---	---	---	419	324	427	162	305	426	218	166	396	431	238	288	355	417	334
MIDLAND TEXAS	244	334	279	365	351	351	377	374	377	354	356	161	397	393	386	398	387	285	291	418	404	403	389	432	414	414	278	389	404	418	369	361
NASHVILLE TENNESSEE	---	---	259	160	54	38	41	270	286	46	74	36	181	306	286	310	209	117	16	41	300	306	113	364	254	35	339	354	209	29	230	181
NEWPORT RHODE ISLAND	201	200	75	60	116	122	127	97	180	202	132	28	30	245	226	176	224	52	198	89	269	257	235	278	244	182	71	290	286	75	147	164
NEW YORK N.Y.CO	225	96	138	148	97	132	81	126	138	160	43	11	20	264	235	175	236	20	25	46	288	234	121	299	287	132	144	319	272	32	310	157
NORTH OMAHA NEBRASKA	44	135	129	44	44	223	217	225	173	60	95	219	277	287	277	234	172	161	260	264	138	145	319	312	365	213	342	324	280	276	177	203
OAK RIDGE TENNESSEE	257	265	263	233	78	69	40	124	264	42	116	180	135	252	268	273	247	81	47	60	313	300	22	318	268	48	314	332	260	41	244	186

Note. -1 mgev is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JANUARY 1966

Station	Day of month																													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
OKLAHOMA CITY OKLA.	180	254	159	35	48	311	303	298	300	169	176	286	338	280	332	316	316	178	161	329	333	319	367	341	343	324	360	328	122	319	170	260
PAGE ARIZONA	253	134	117	171	177	62	88	74	91	129	316	301	296	297	295	312	324	224	309	302	299	299	299	271	305	289	294	268	192	78	100	224
PHOENIX ARIZONA	162	111	93	300	300	289	336	283	323	89	318	359	371	350	353	345	352	356	375	369	365	361	366	369	367	364	374	349	346	301	343	314
PORTLAND MAINE	88	164	109	131	97	159	95	87	178	173	86	34	65	295	122	225	141	65	155	64	334	174	139	158	360	171	71	228	227	127	251	152
RAPID CITY S.DAK.	182	---	175	170	184	179	180	130	32	100	138	220	141	190	155	230	177	150	248	147	218	134	210	219	271	266	285	229	180	272	225	185
RIVERSIDE CALIFORNIA	146	82	297	301	331	336	340	329	93	181	207	368	323	317	356	347	338	261	381	367	370	342	335	261	83	314	105	247	274	252	82	270
SAINT CLOUD MINN.	40	42	50	46	181	73	166	75	81	165	55	137	196	222	225*	232	112	236	245	211	105	218	140	252	245	137	277	198	241	272	227	150
SALT LAKE CITY UTAH	236	217	95	235	225	218	228	246	225	162	197	295	138	150	165	74	189	132	326	291	225	296	303	28	69	318	290	162	65	64	30	198
SAN ANTONIO TEXAS	321	365	274	60	359	342	311	382	368	370	374	160	382	387	---	170	64	363	101	405	415	384	418	434	234	310	249	84	137	276	237	291
SANTA MARIA CALIF.	227	1 4	---	271	291	294	293	---	189	106	313	298	329	340	319	325	317	318	302	339	344	336	325	288	265	275	201	---	108	133	63	260
SAULT STE MARIE MICH	111	118	29	76	47	74	62	36	69	179	122	104	254	179	247	224	232	178	101	130	238	---	284	200	274	287	197	269	139	315	302	169
SAYVILLE NEW YORK	160	126	98	103	177	120	139	114	130	170	73	12	15	189	198	174	196	37	56	46	209	200	172	232	231	116	93	235	227	49	248	140
SEATTLE TACOMA WASH.	25	46	102	52	45	37	48	22	61	205	221	192	54	45	14	69	40	220	186	175	---	---	---	---	---	---	---	---	---	---	---	---
SHREVEPORT LOUISIANA	199	153	179	64	143	66	299	329	233	322	233	115	327	344	344	360	197	69	58	119	378	316	224	388	67	69	285	348	29	---	56	210
SPOKANE WASHINGTON	24	66	138	45	60	44	45	34	88	190	181	161	87	61	43	87	---	210	116	141	167	173	134	116	230	107	79	193	238	97	61	114
STATE COLLEGE PENN.	260	152	115	153	117	167	66	61	208	191	27	43	147	261	232	223	244	184	142	65	256	192	39	274	299	174	173	320	263	114	305	176
STERLING VIRGINA	282	262	160	262	258	205	178	61	239	261	108	111	54	301	295	282	304	72	52	157	318	281	33	332	283	105	255	358	331	64	336	213
STILLWATER OKLAHOMA	238	159	186	33	51	285	278	279	285	101	117	297	312	228	308	294	272	256	135	301	308	263	340	325	317	307	345	318	120	285	213	244
SWAN ISLAND W.I.	465	279	330	311	431*	512	494	396	430	472	509	496	496	408	481	470	199	453	369	507	473	495	513	538	483	523	544	396	430	464	383	416
TAMPA FLORIDA	362	314	367	368	319	175	291	266	373	362	377	272	206	236	217	107	275	352	338	371	349	433	62	406	323	63	201	400	371	391	384	301
TUCSON ARIZONA	107	74	297	295	251	295	342	269	336	---	89	322	372	366	369	364	345	370	374	390	380	377	380	380	383	388	396	381	396	374	351	327

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month JANUARY 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	-10	-10	7	29	-17	-16	-47	-70	-37	-42	-102	-75	-10	3	23	26	-5	-61	-13	-29	-41	-32	-57	4	-26	-11	-9	-16	*0	2	66	-19

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

* less than +0.5

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code [illegible] defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	00350	20335	37348	33379	34339	00344	20307	34217	36414	33395	36400	20396	20374	00393	00363	33379	34364	00392	00366	34350	36338	38429	00441	02456	00429	36461	00417	00424	00485	00424	33372	386
Caribou, Maine	03441	03388	00397	36389	36371	34361	33353	37373	00367	34369	02398	34361	-----	03419	33418	00371	00425	35428	00430	-----	-----	03424	-----	-----	33491	34467	-----	38509	00468	34416	00438	411
Green Bay, Wis.	----	35390	35419	----	34380	-----	37344	37331	33352	33359	35343	-----	34451	32429	00422	00426	34413	00409	----	02529	02394	00390	-----	08473	00434	00438	00493	34430	35378	00444	00370	409
Mauna Loa, Hawaii	----	00265	00264	00258	00261	00265	00271	00288	00281	00273	00265	00263	00275	00267	00246	00250	00250	00241	00240	-	-----	00248	00245	00250	00252	00251	00250	00239	00241	00231	00235	256
Midland, Texas	04287	05299	-----	03300	00287	00290	00303	00279	00298	00344	00242	-----	-----	03307	00304	00294	00296	05299	- ---	00254	00300	03306	-----	00293	00283	03276	04279	34255	34255	00254	03256	290
Nashville, Tenn.	03377	00385	00339	00329	04364	-----	03373	03336	00317	05349	05338	05327	-----	00312	00341	00311	00329	-----	-----	-----	----	00330	-----	-----	-----	-----	-----	-----	-----	-----	-----	341
Sterling, Va.	- --	00362	05377	00388	-----	-----	37328	06377	03340	00331	07342	---	-----	00336	341	00330	00314	05319	- -	-----	00388	00356	05357	00382	03359	-----	-----	00385	03320	06333	00366	351

[illegible]

DESCRIPTION of CHARTS

CHART I., A. AVERAGE TEMPERATURE (°F.) AT SURFACE. B. DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL.-The average monthly temperature presented in Chart I-A is computed from the average daily maximum and the average daily minimum which in turn are computed from the daily maximum and minimum temperatures reported by some 870 Weather Bureau and cooperative stations. The departures from normal are presented in Chart I-B. They are based on the 30-year normals (1931-60) for the first-order Weather Bureau stations. More detailed charts, based upon data for many more stations, are included in the issues of Climatological Data for the several states and groups of states.

CHART II. TOTAL PRECIPITATION. - Chart II is based on daily precipitation records at about 870 Weather Bureau and cooperative stations. More detailed charts, based upon data for many more stations, are included in the issues of Climatological Data for the several states and groups of states.

CHART III. PERCENTAGE OF NORMAL PRECIPITATION. -In this chart the anomaly in the month's precipitation is shown as a percentage of the normal total. This anomaly shows the deviation from the 30-year normal (1931-60) for about 270 first-order Weather Bureau stations.

CHART IV. TOTAL SNOWFALL. CHART V. A. PERCENTAGE OF MEAN MONTHLY SNOWFALL. B. DEPTH OF SNOW ON GROUND.-Chart IV gives the total depth in inches of unmelted snowfall as reported during the month by Weather Bureau and cooperative stations. This is converted in Chart V-A into a percentage of the mean monthly total amount computed for each Weather Bureau station having at least 10 years of record. The depth of snow on ground is that reported by both Weather Bureau and cooperative stations as of 7:00 a. m. Eastern Standard Time on the Monday nearest the end of the month. This is reported only for the months December through March. The snowfall charts are presented each month November through April.

Isolines for Charts I, II, III, IV, and V, are drawn through points of approximately equal value. Caution should be used in interpolating on these charts, particularly in mountainous areas.

CHART VI. A. PERCENTAGE OF POSSIBLE SUNSHINE. B. PERCENTAGE OF MEAN MONTHLY SUNSHINE.-CHART VI-A shows the amount of sunshine received in terms of percentage of the total hours of sunshine possible during the month. In Chart VI-B this is shown as a percentage of the mean number of hours of sunshine received. Means are computed for Weather Bureau stations having at least 10 years of record.

CHART VII. A. AVERAGE DAILY VALUES OF SOLAR RADIATION, LANGLEYS. B. PERCENTAGE OF MEAN DAILY SOLAR RADIATION. -Shown on Chart VII-A are the monthly averages of daily total solar radiation, both direct and diffuse, in langleys (gm. cal. $cm.^{-2}$) for all Weather Bureau stations which record this element. Supplementary data for which limits of accuracy are wider than for those data shown are drawn upon in making the analysis. Chart VII-B shows the percentages of the mean based on at least 5 years of record during the period 1950-1960.

CHART VIII. -TRACKS OF CENTERS OF ANTICYCLONES AT SEA LEVEL.

CHART IX. TRACKS OF CENTERS OF CYCLONES AT SEA LEVEL. -Centers which can be identified for 24 hours or more are tracked in these charts. Semi-permanent features such as the Great Basin and Pacific Highs and Colorado and Mexico Lows are not shown. The 7:00 a. m. EST positions are shown by open circles, with the intermediate positions at 6-hour intervals shown by solid dots. The date is given above the circle and the central pressure to whole millibars below. A dashed track indicates a regeneration rather than actual movement to the next position. Solid squares indicate position of stationary center for period shown beside it.

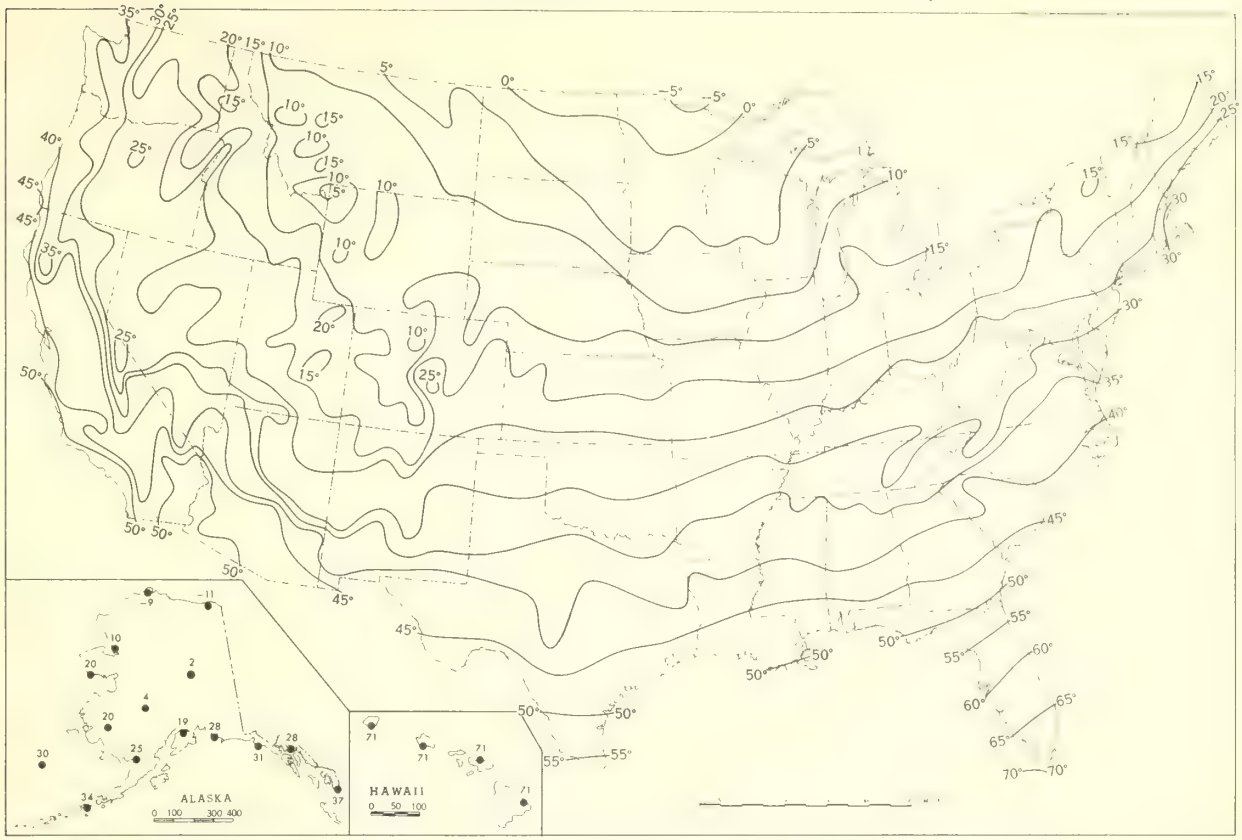
CHART X. AVERAGE SEA LEVEL PRESSURE (mb.) AND SURFACE WINDROSES. -The average monthly sea level pressure is obtained from the averages of the 7:00 a. m. and 7:00 p. m. EST pressures reported at Weather Bureau stations. Windroses are based on the hourly wind directions (to 16 points of the compass) reported by Weather Bureau stations, each circle or arc indicating 5 percent of the time. The inset shows the departure of the average pressure based on 30-year normals for first-order Weather Bureau Stations, other stations having at least 10 years of record, and, for each 10° intersection in a diamond grid over the oceans, from interpolated values read from the Historical Weather Maps for the 20 years of best coverage prior to 1940.

CHARTS XI-XVI. AVERAGE HEIGHT, TEMPERATURE, AND RESULTANT WINDS, 850, 700, 500, 300, 200, and 100 mb. -Height is given in geopotential meters and temperature in degrees Celsius. These are the averages of the 1200 GMT radiosonde reports. Wind speeds are given in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Directions are shown to 360° of the compass. Winds are based on rawins at the indicated pressure surface and at 1200 GMT.

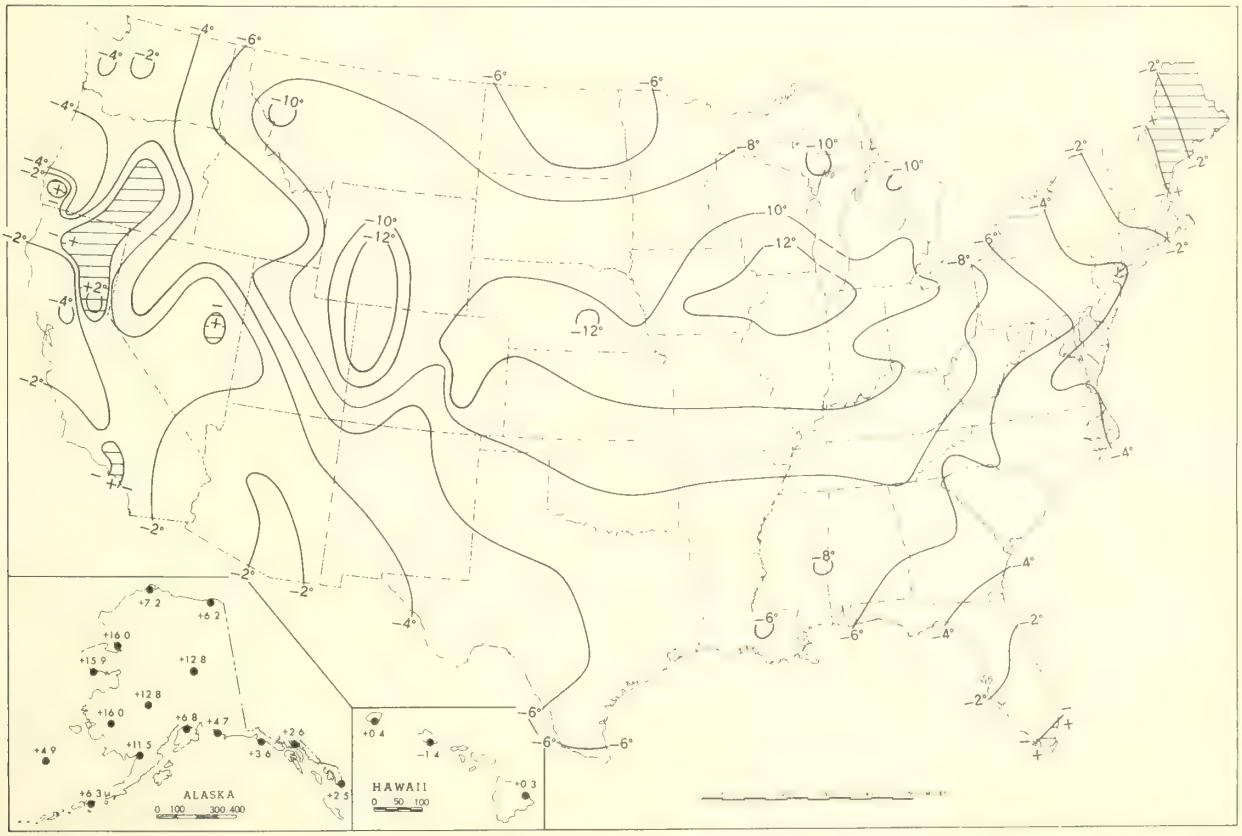
CHART XVII. A. 50-MB. RESULTANT WINDS. B. 30-MB. RESULTANT WINDS. -Wind speed (isotachs) in knots. Arrows show resultant wind direction. Winds are based on rawins at the indicated pressure surface and at 1200 GMT.

Exact values of most of these charted elements for Weather Bureau stations are printed each month in tabular form in CLIMATOLOGICAL DATA, NATIONAL SUMMARY. Extreme values of temperature and precipitation for each state are included in the tables, Condensed Climatological Summary. Annual averages are presented in the CDNS Annual Issue each year.

Chart I. A. Average Temperature (°F.) at Surface, January 1963.



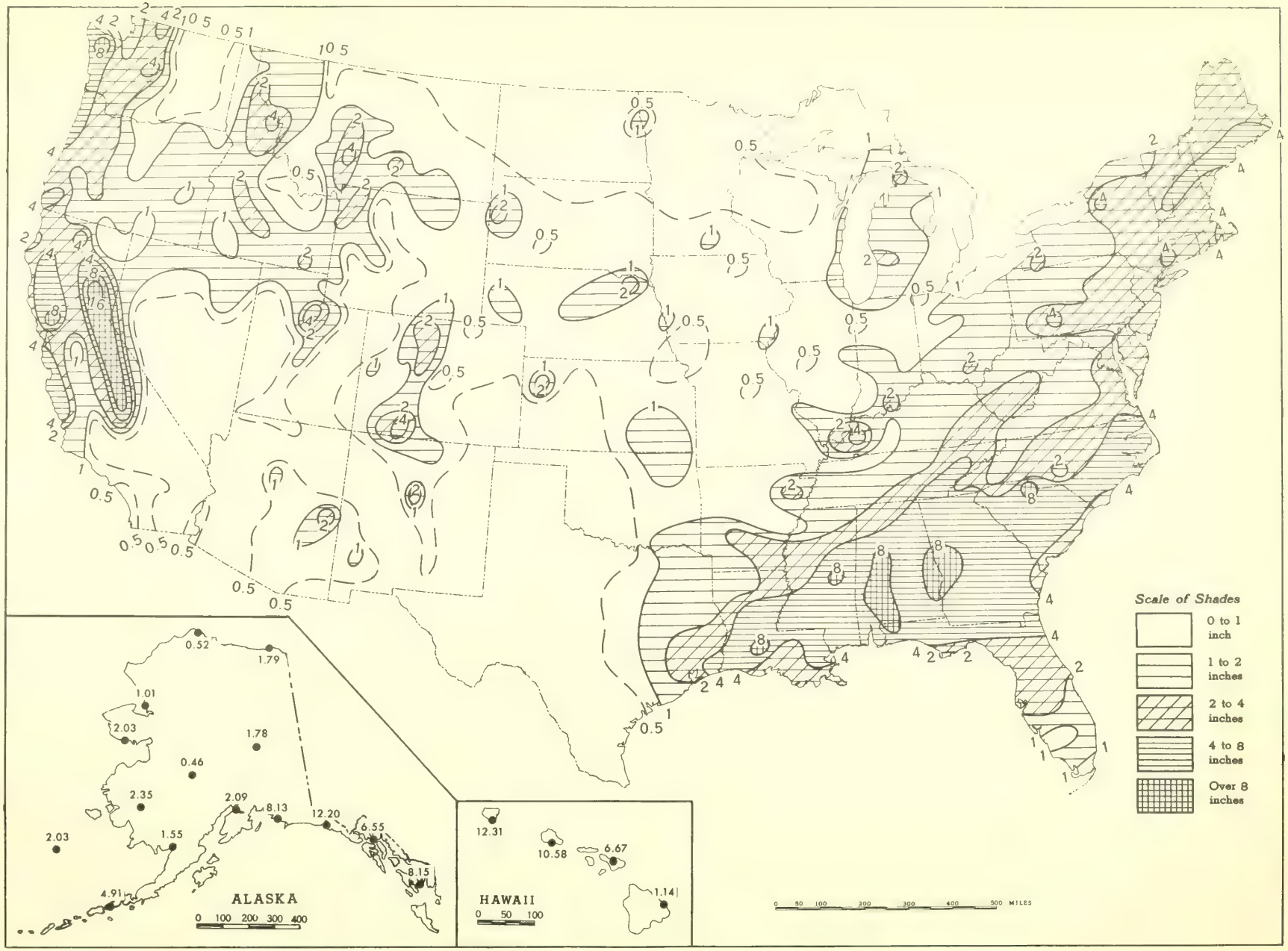
B. Departure of Average Temperature from Normal (°F.), January 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

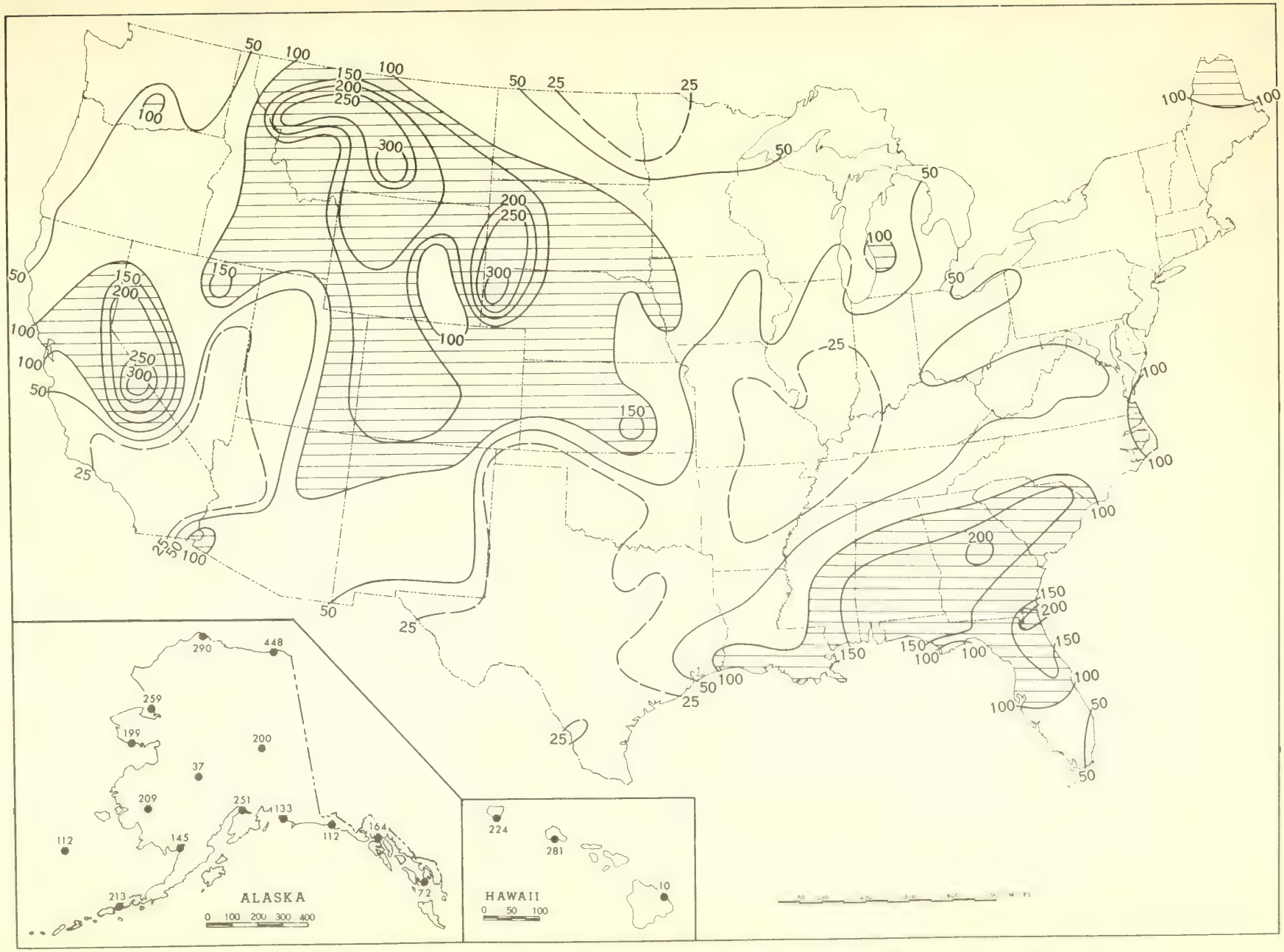
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), January 1963.



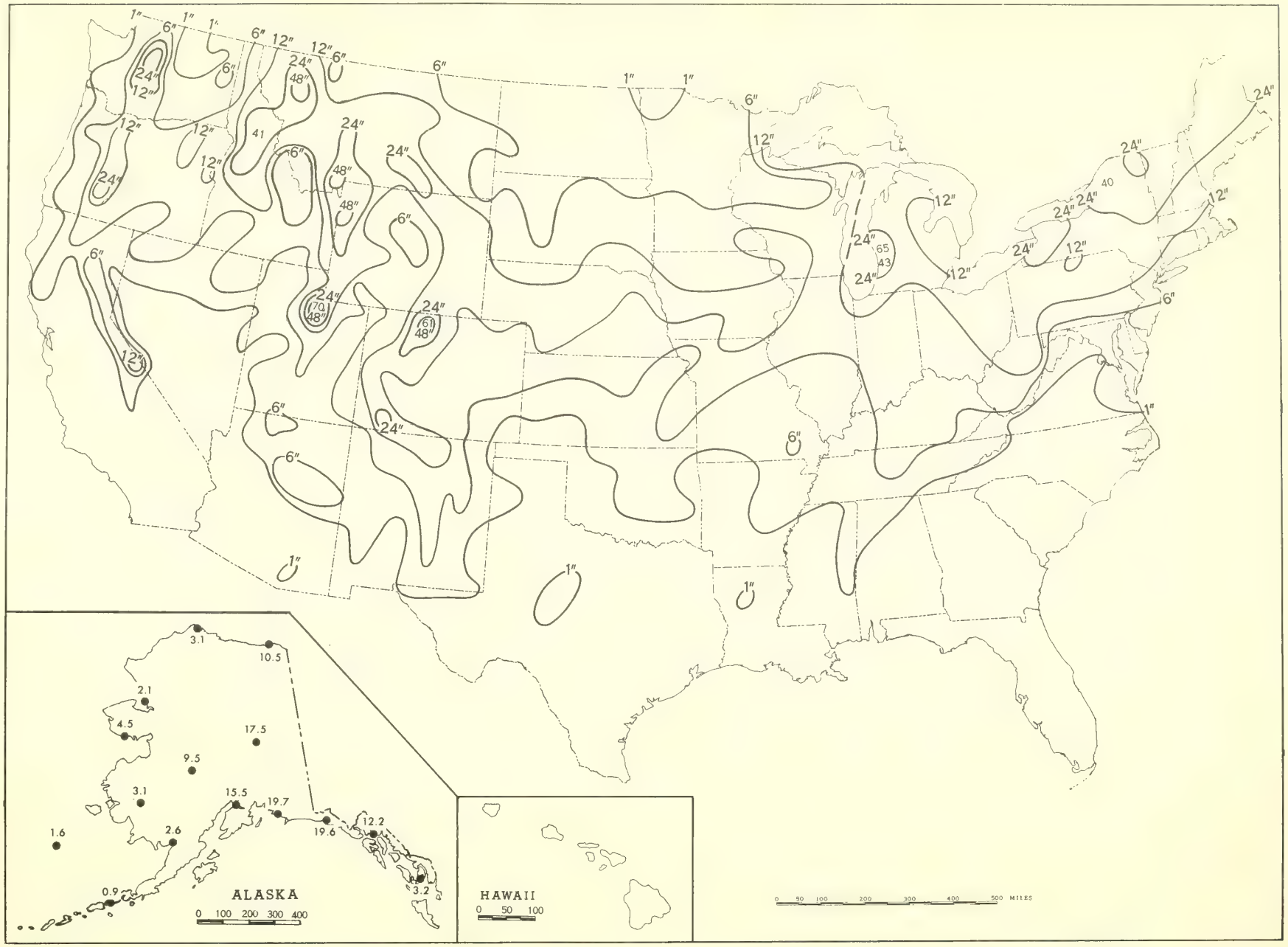
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, January 1963.



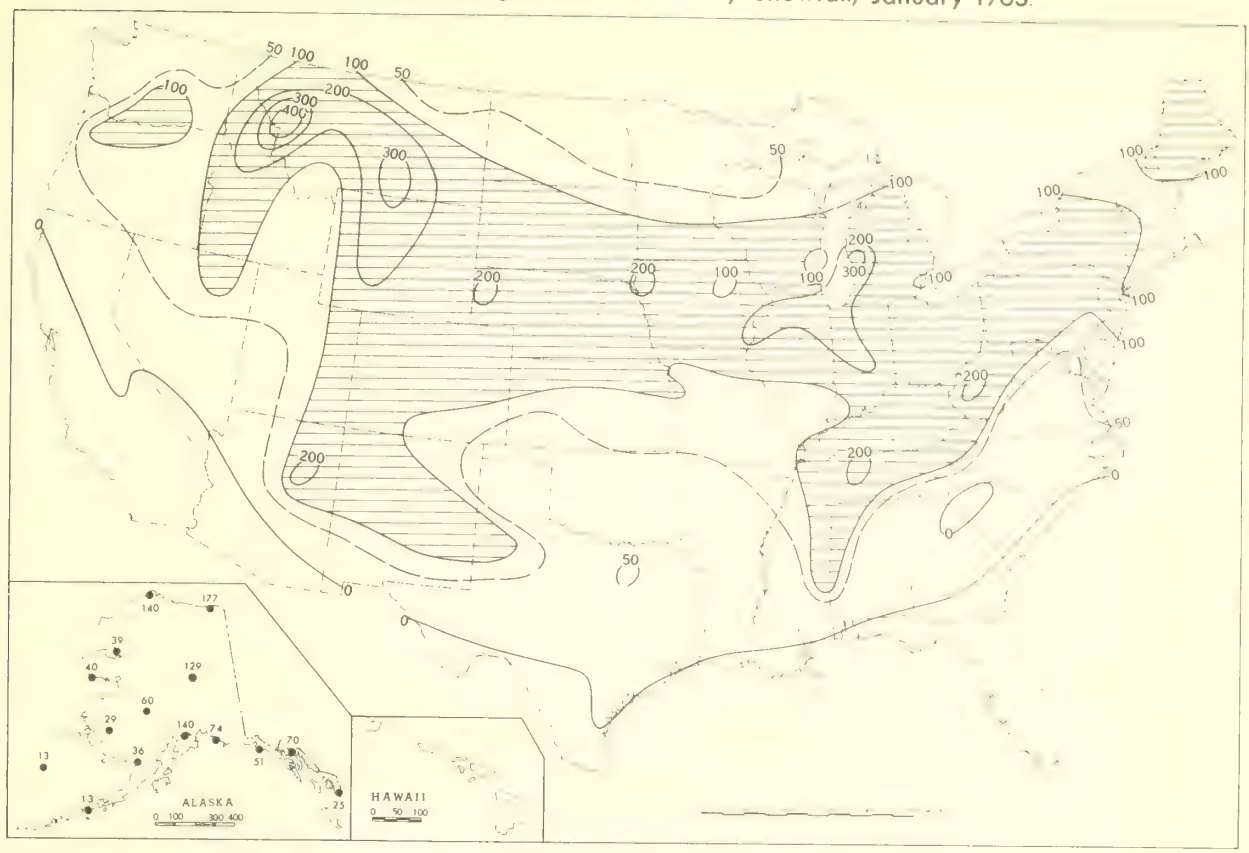
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), January 1963.

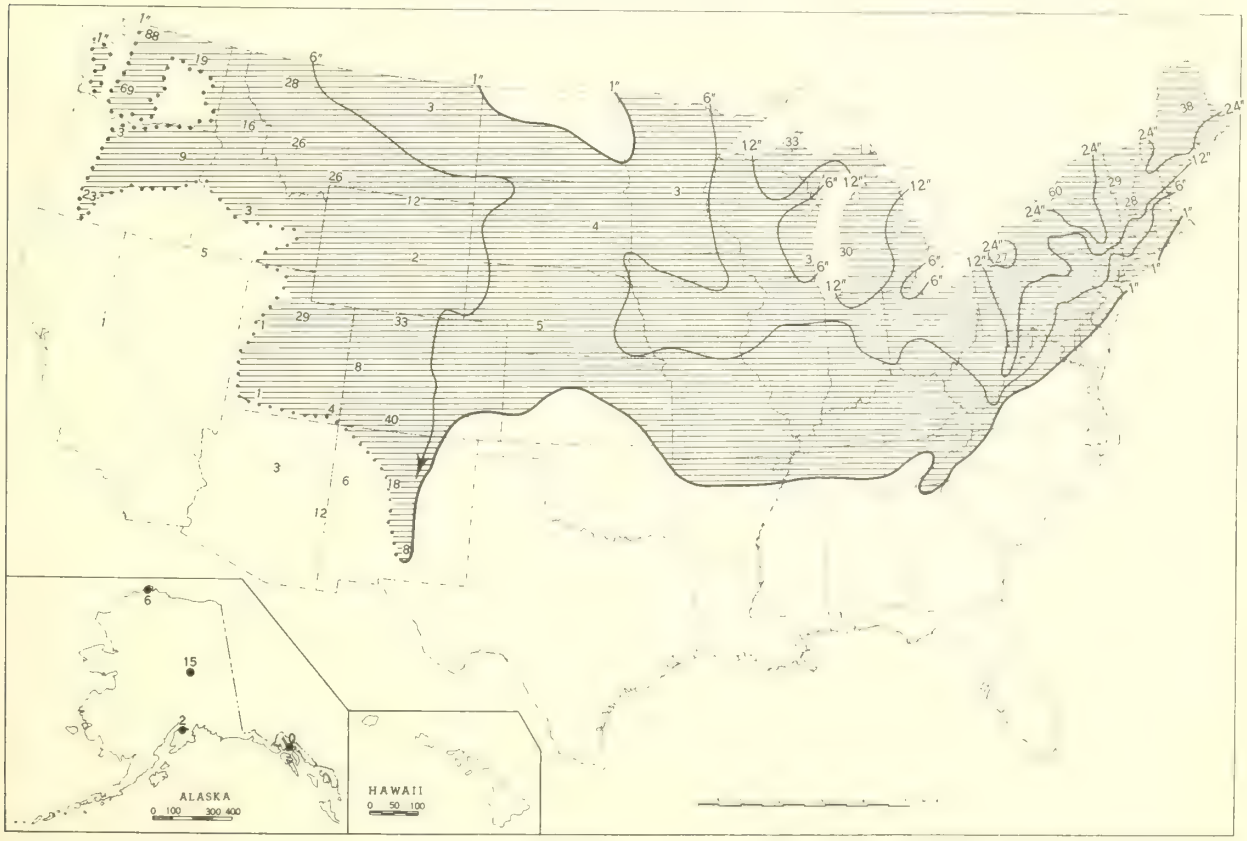


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, January 1963.

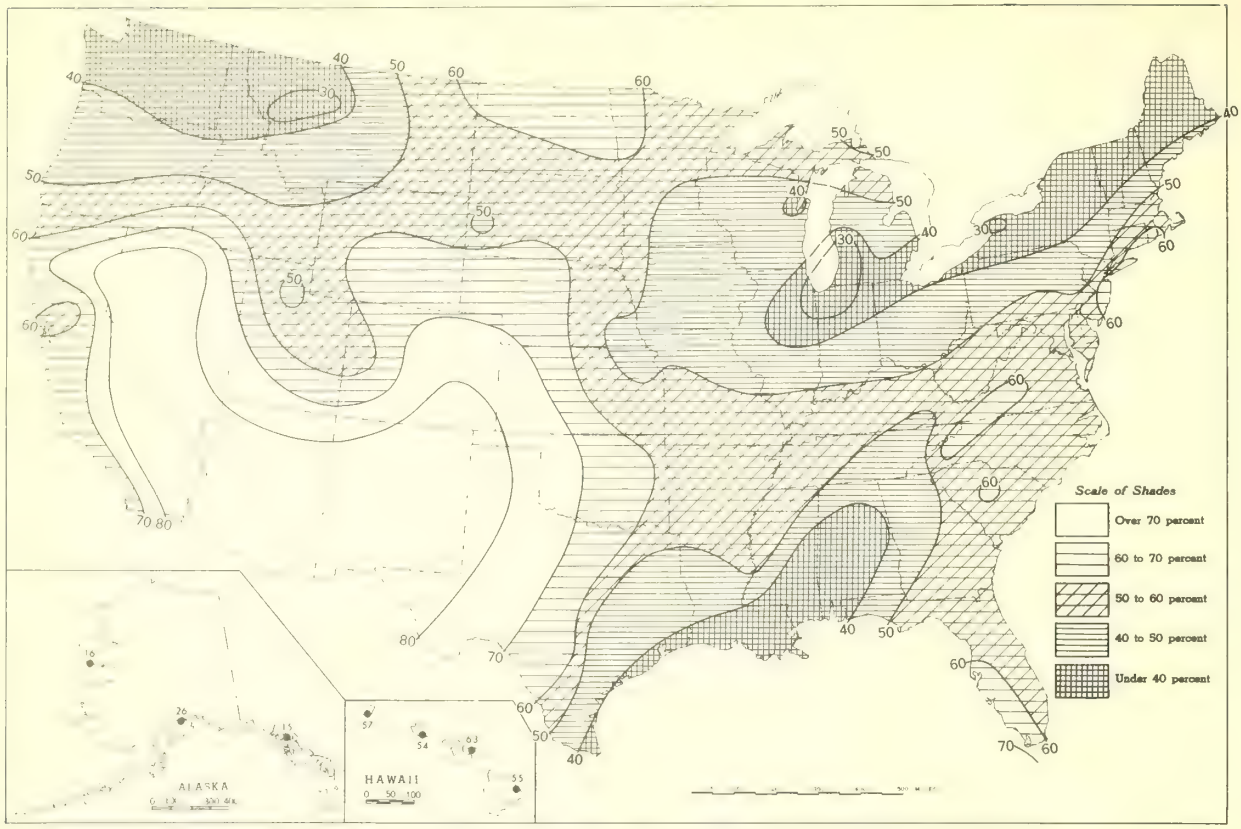


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., January 28, 1963.

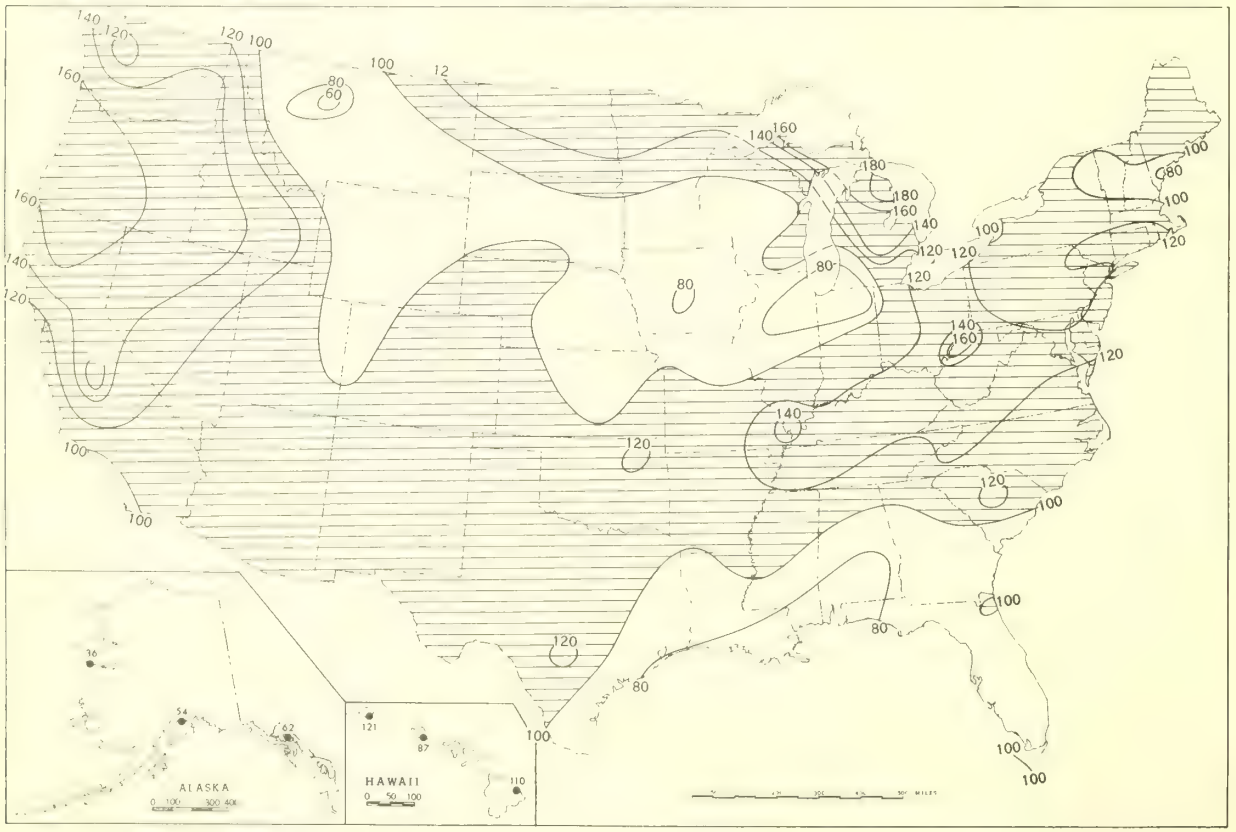


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, January 1963.

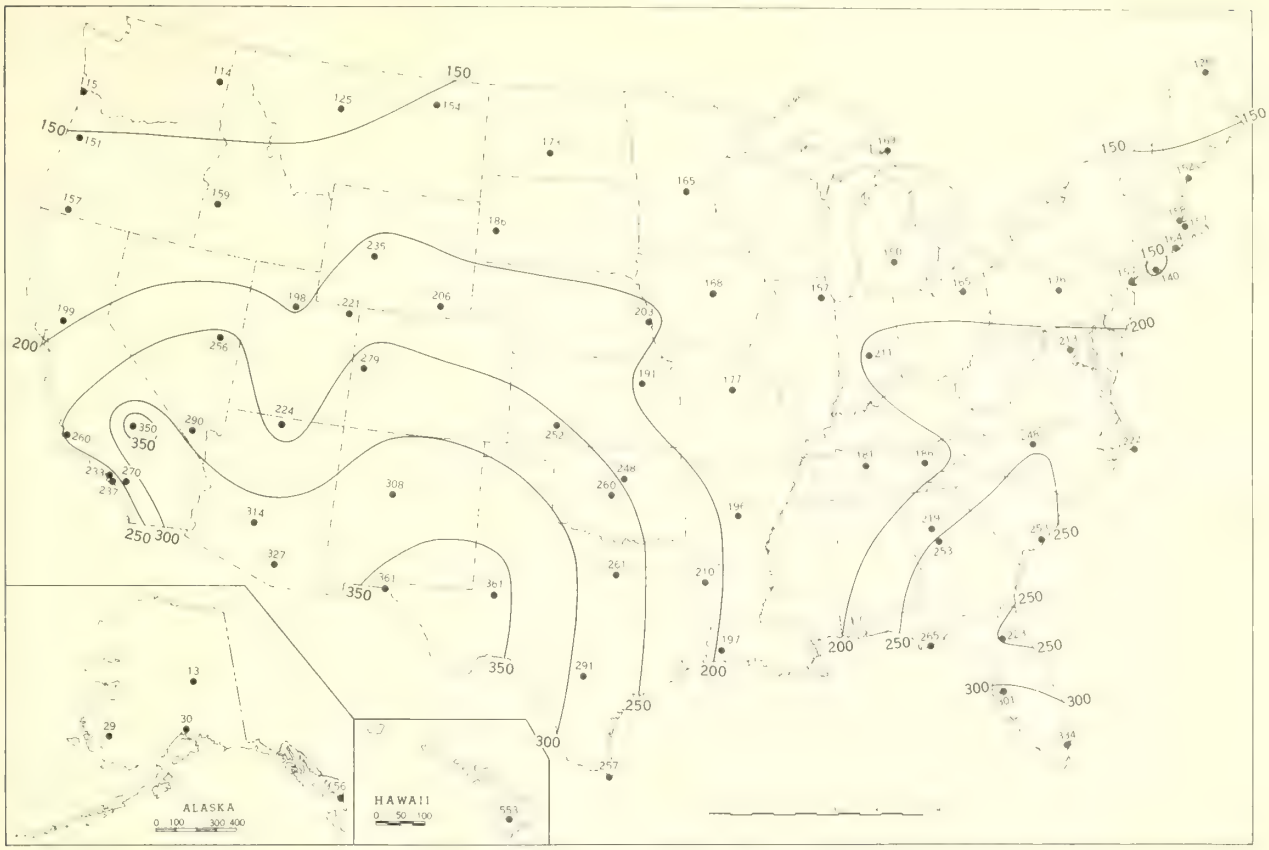


B. Percentage of Mean Monthly Sunshine, January 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, January 1963.

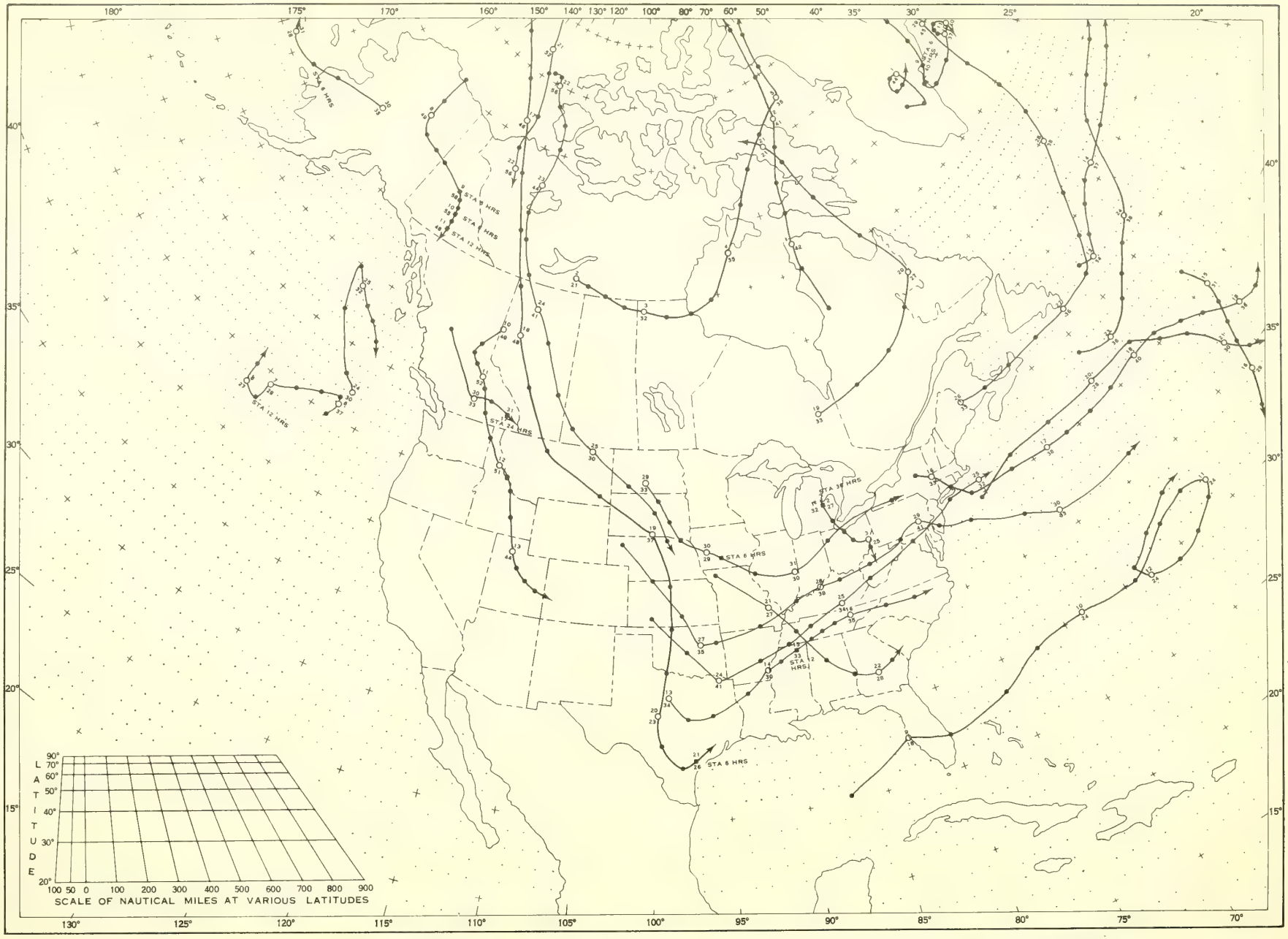


B. Percentage of Mean Daily Solar Radiation, January 1963.



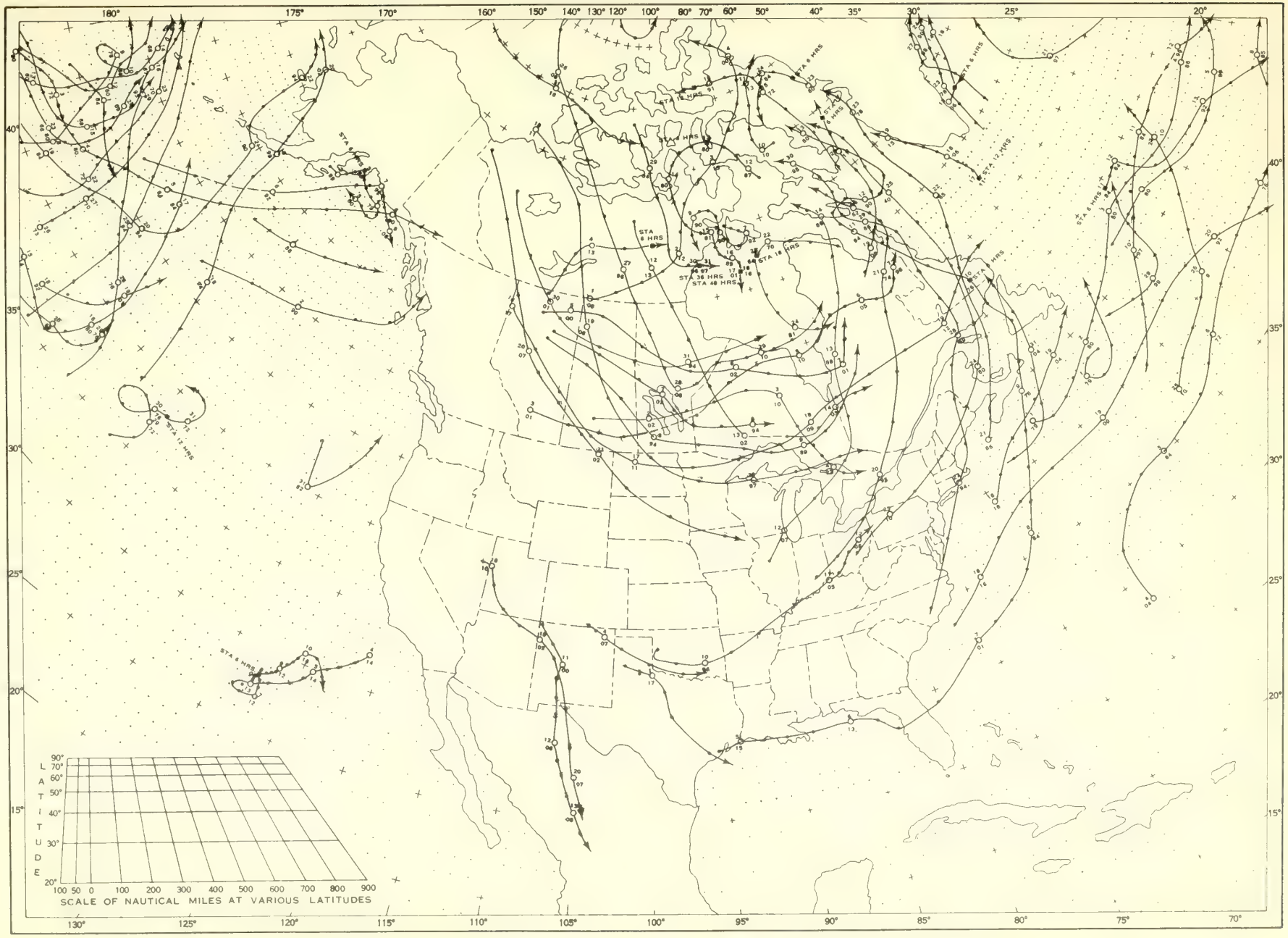
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, January 1963.



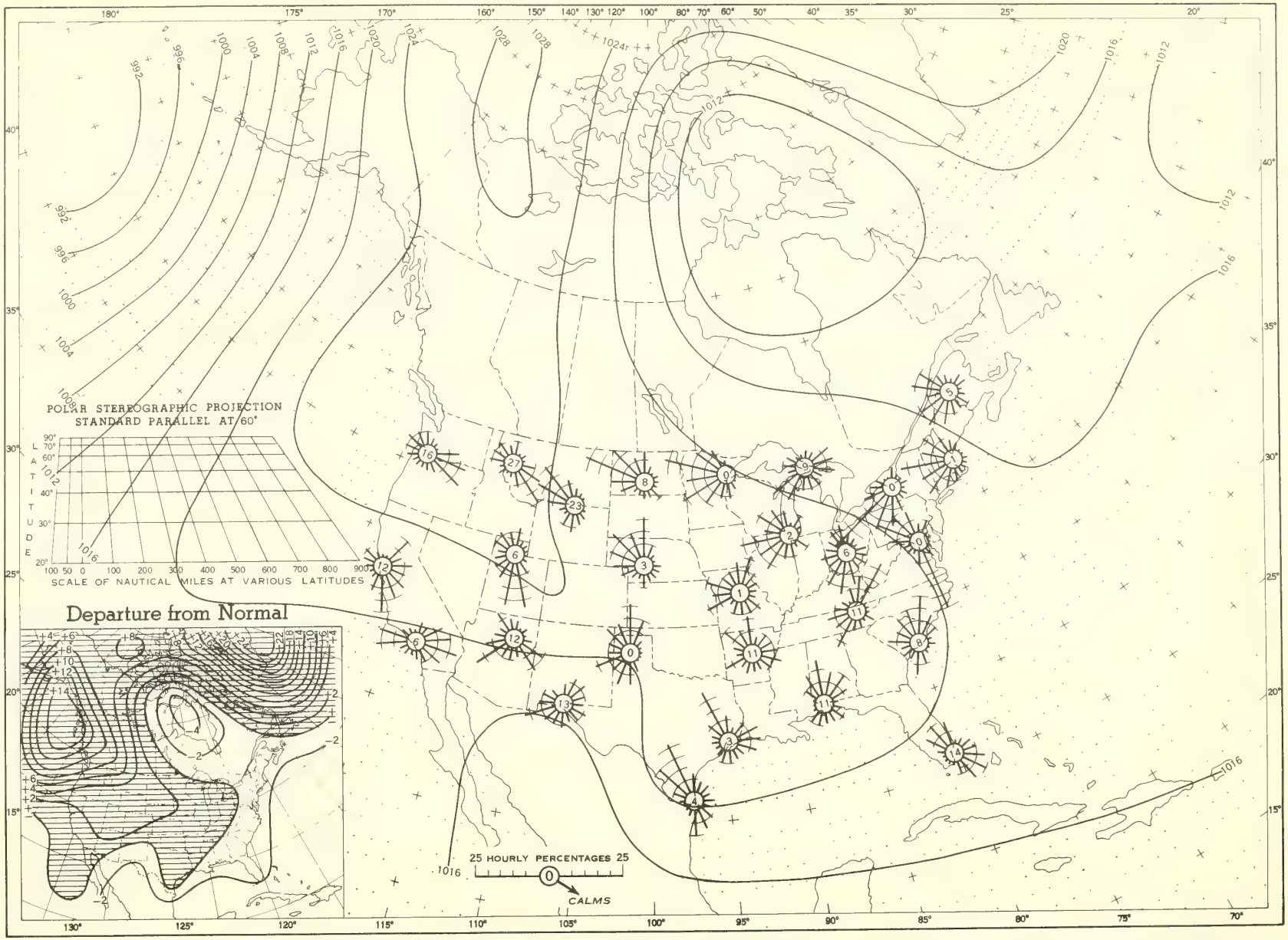
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, January 1963.



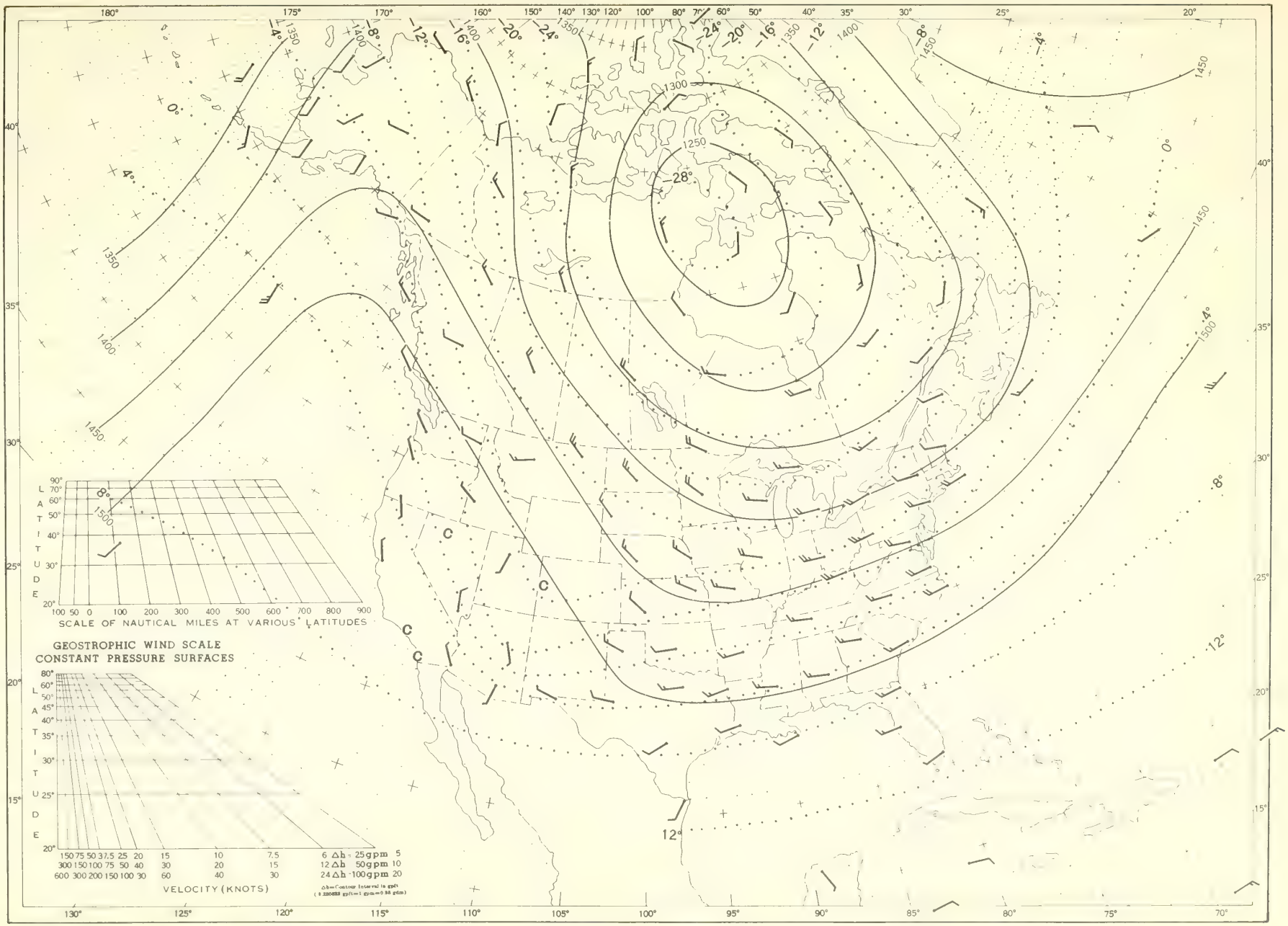
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, January 1963. Inset: Departure of Average Pressure (mb.) from Normal, January 1963.



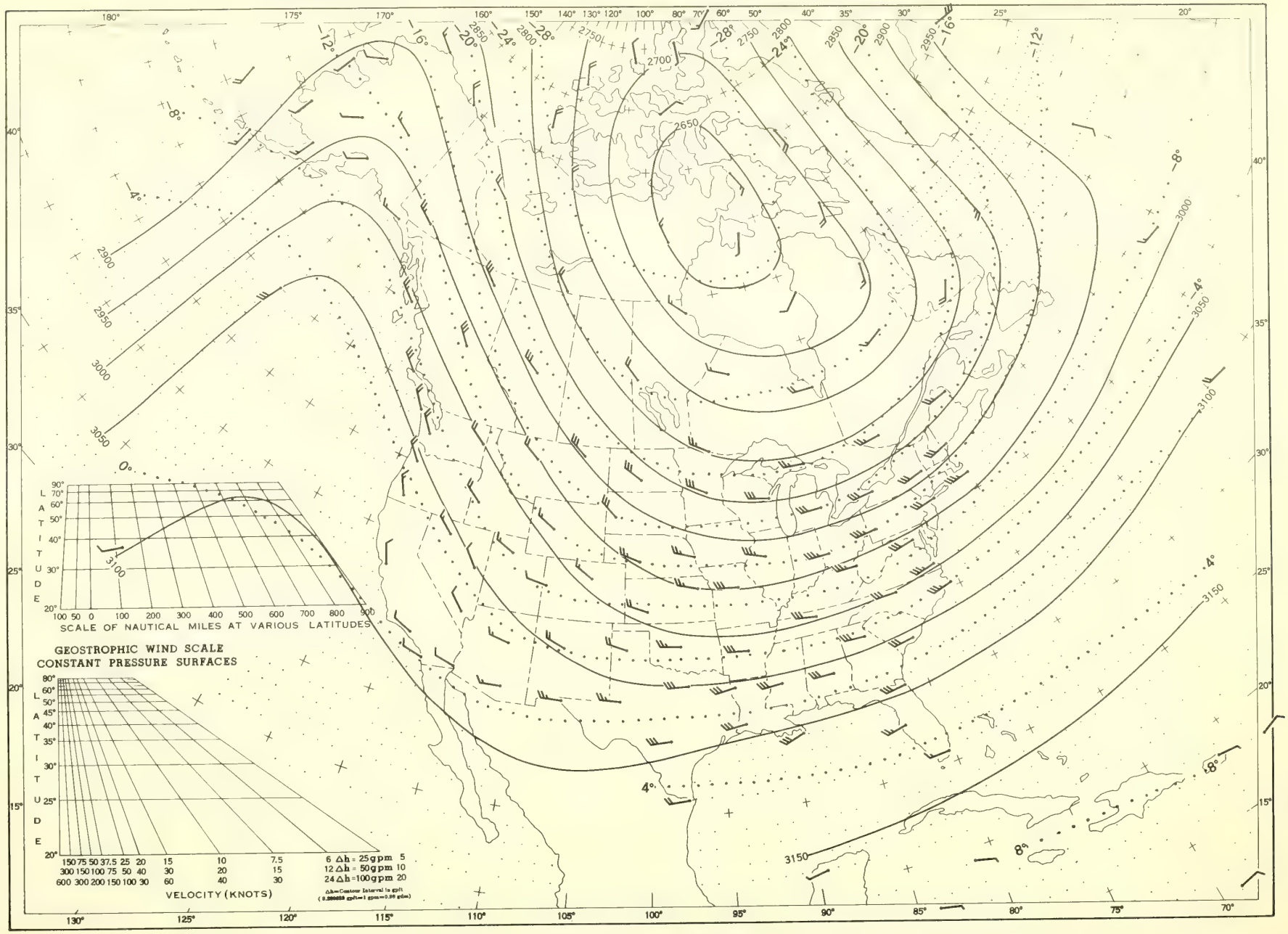
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.



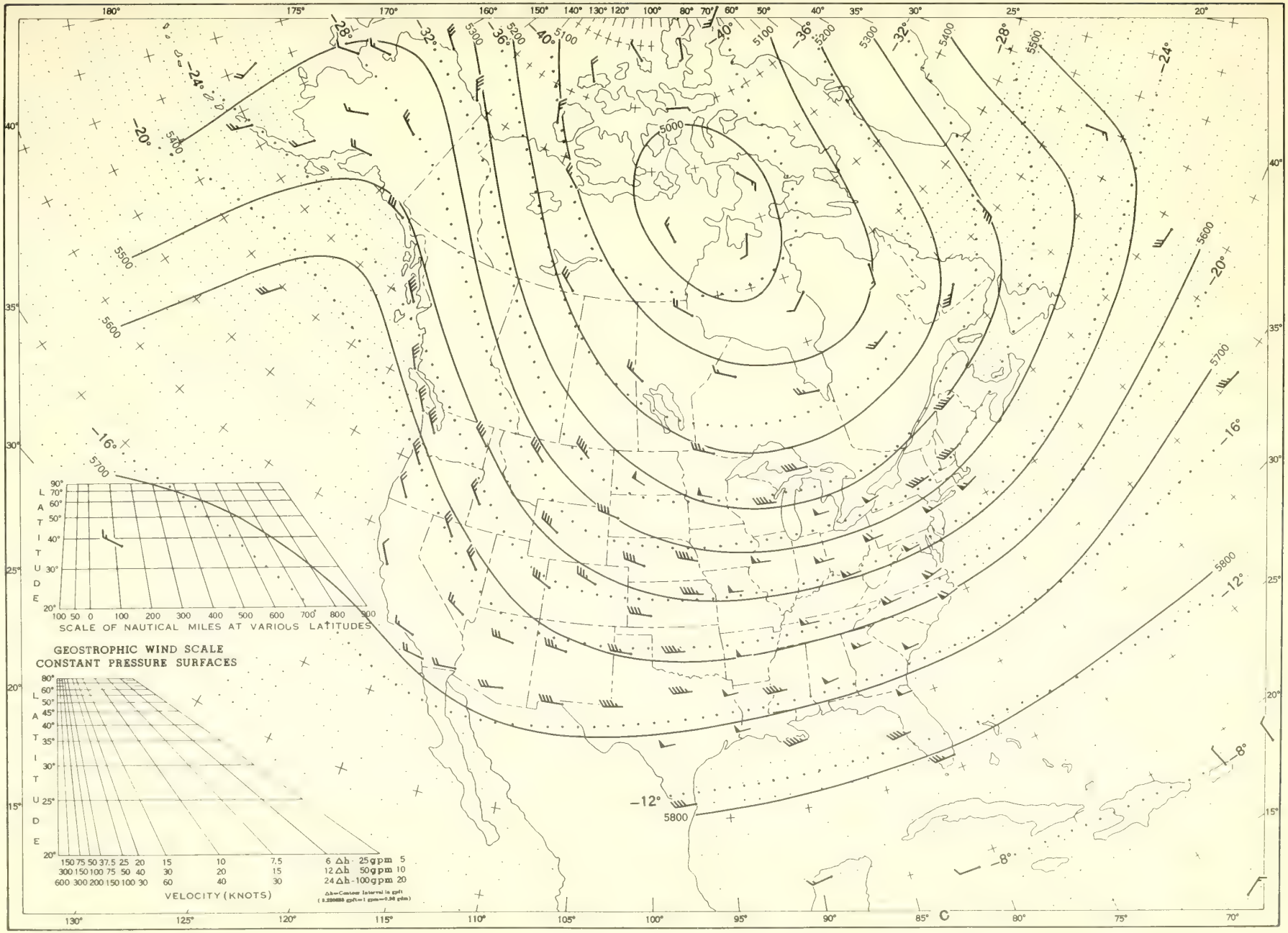
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.



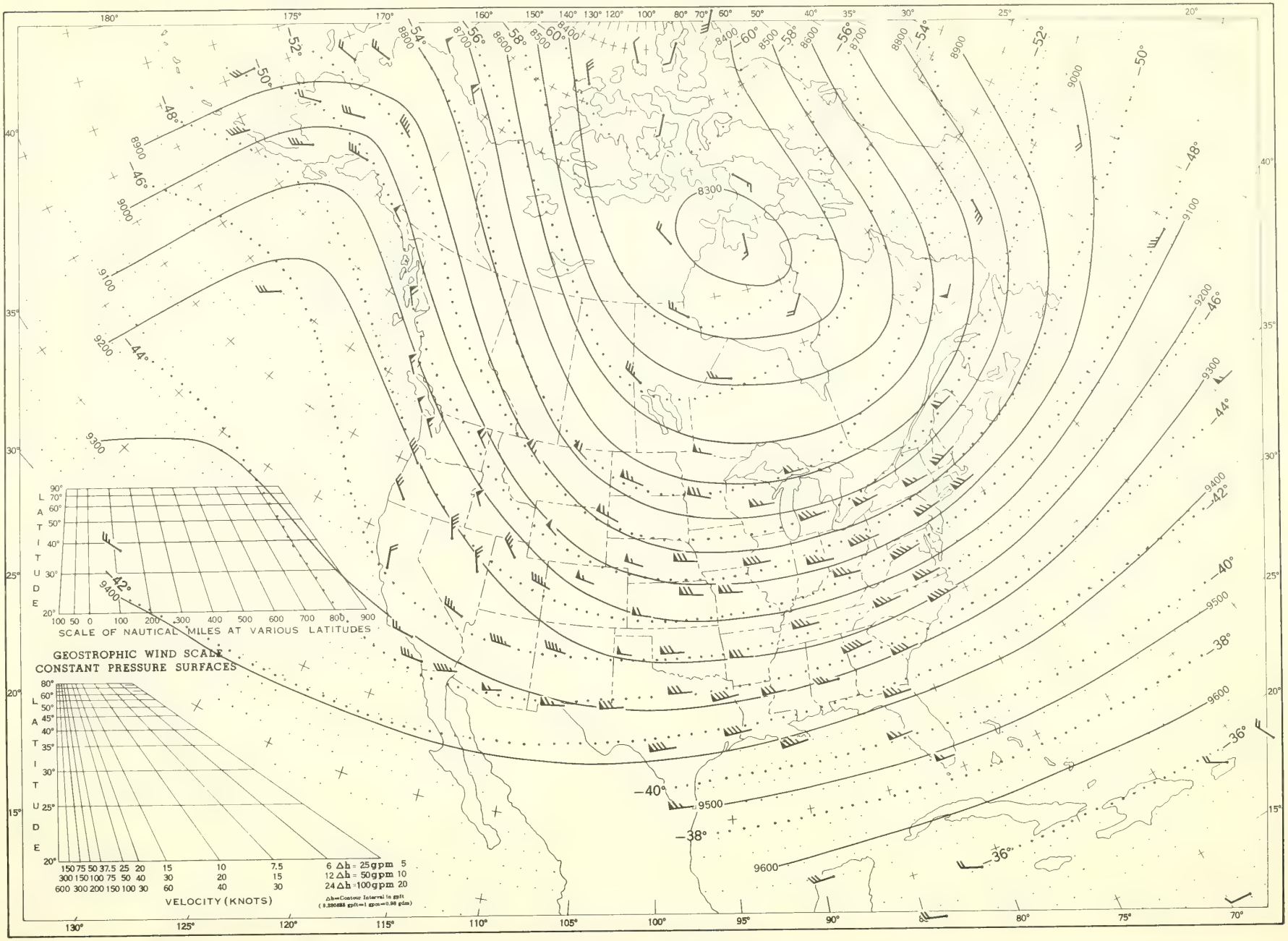
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.



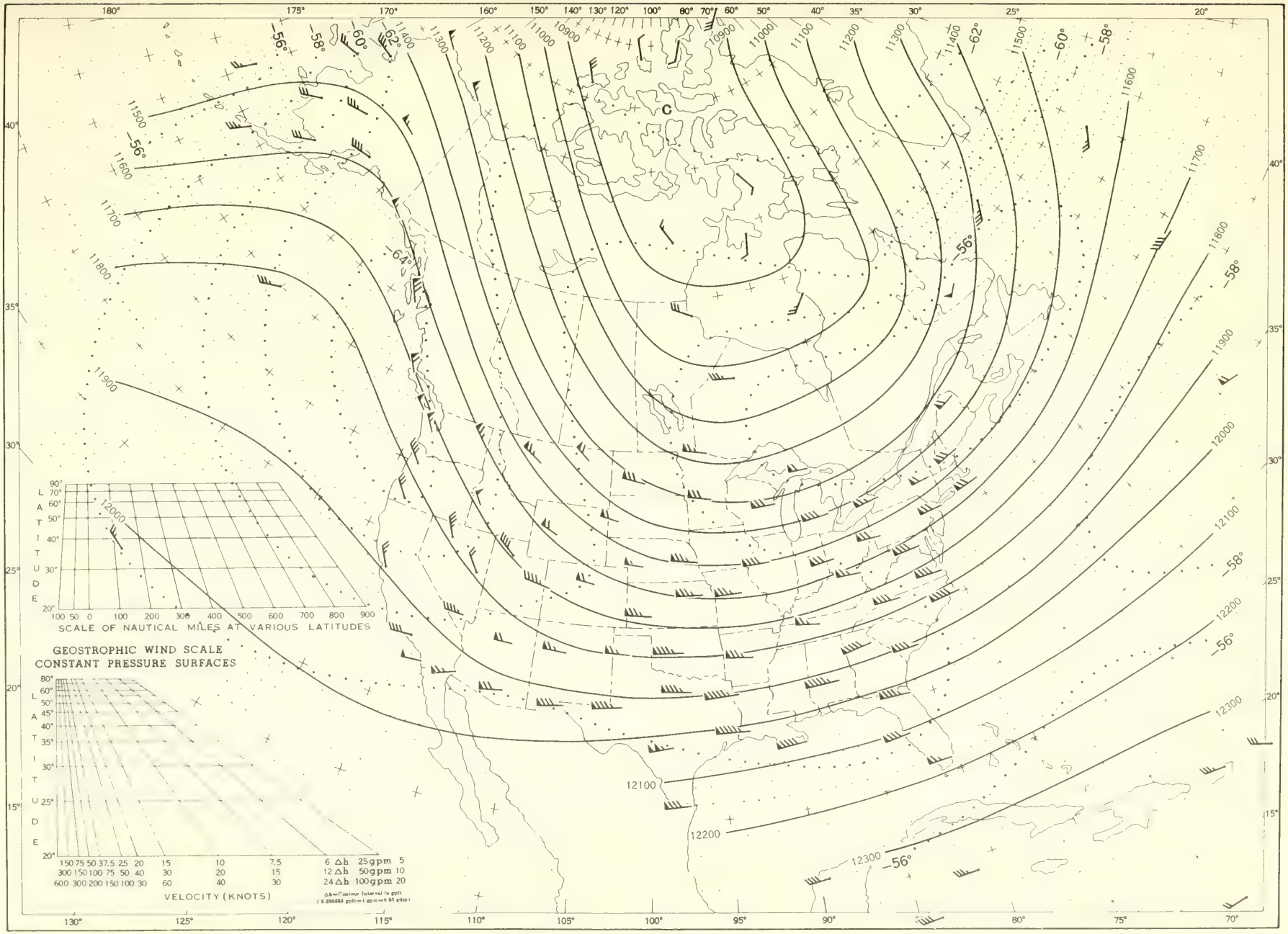
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.



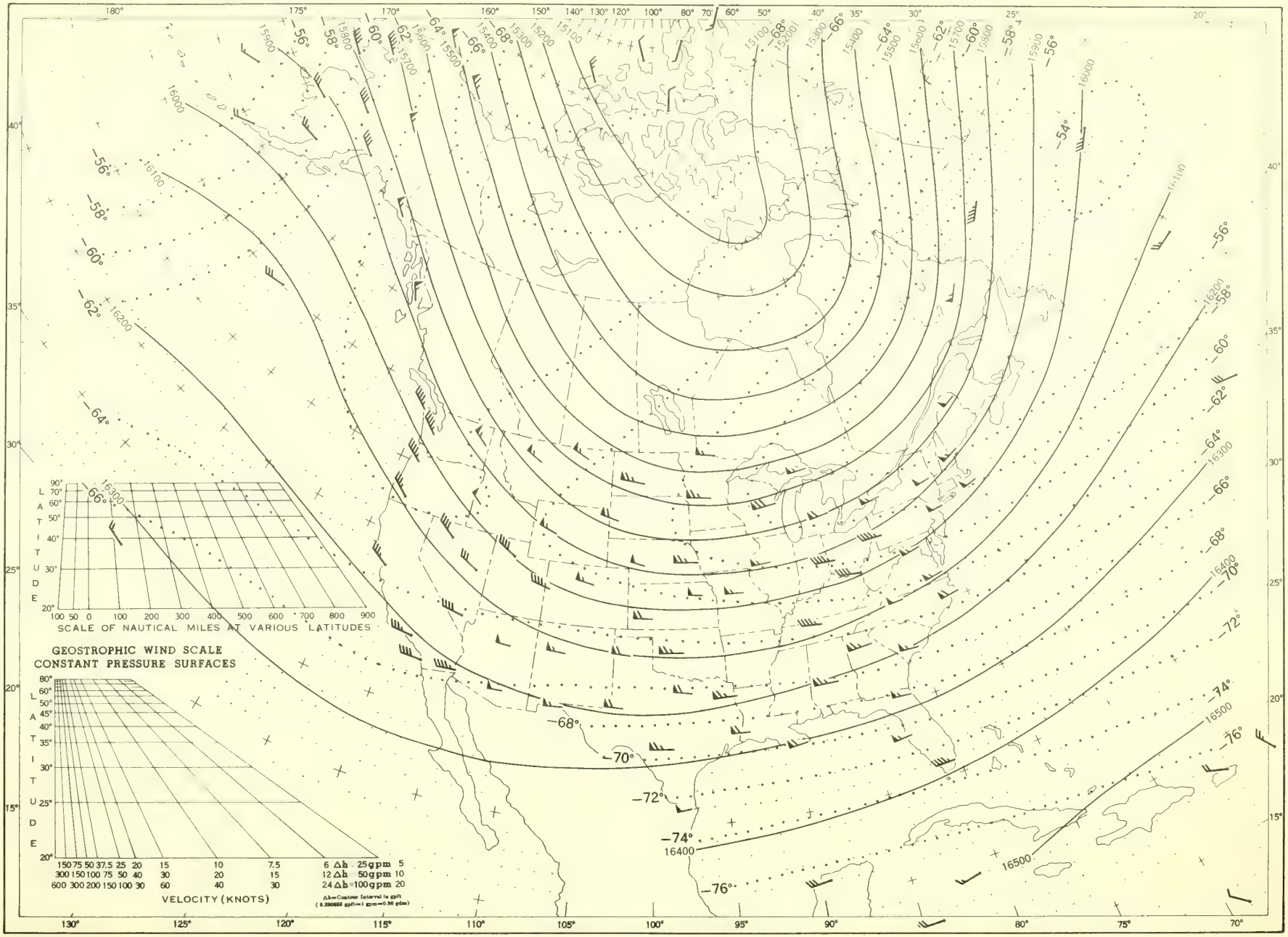
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.



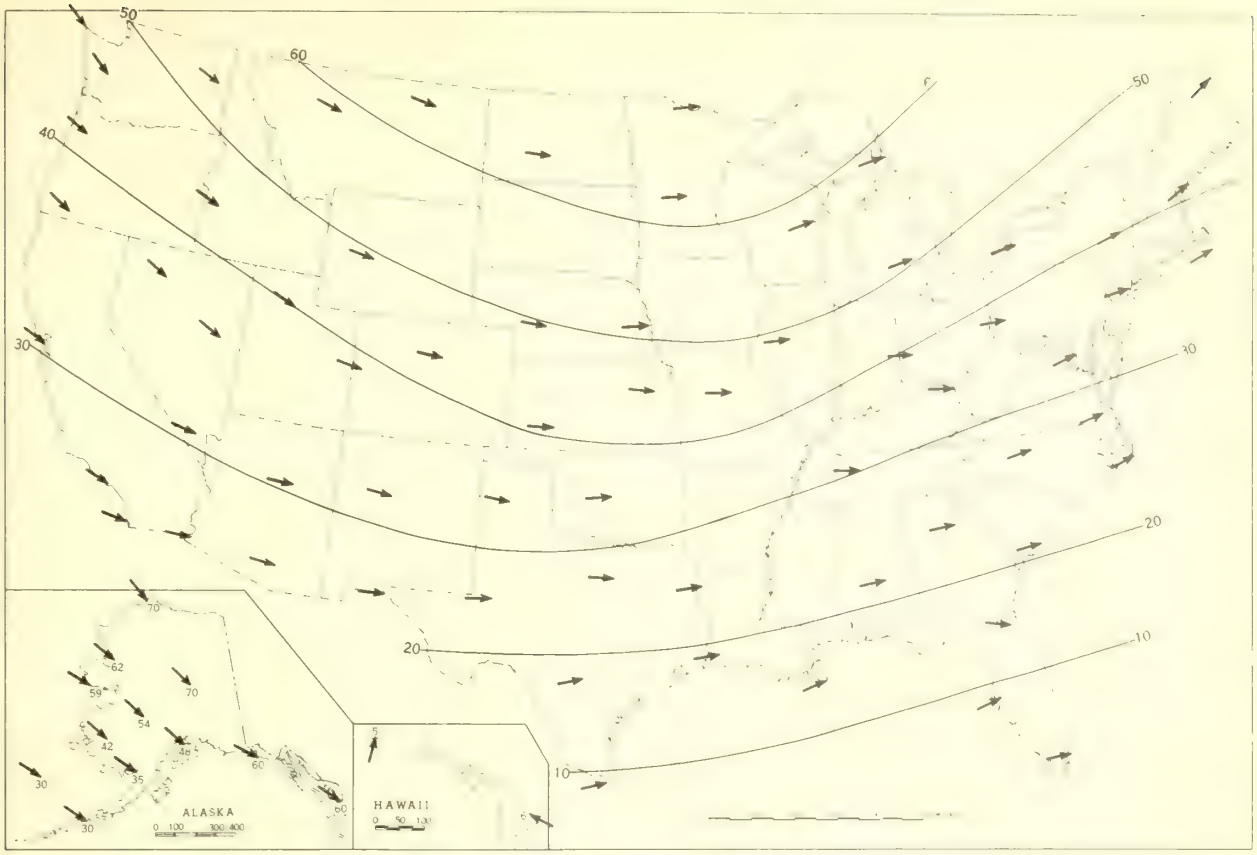
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, January 1963. Average Height and Temperature, and Resultant Winds.

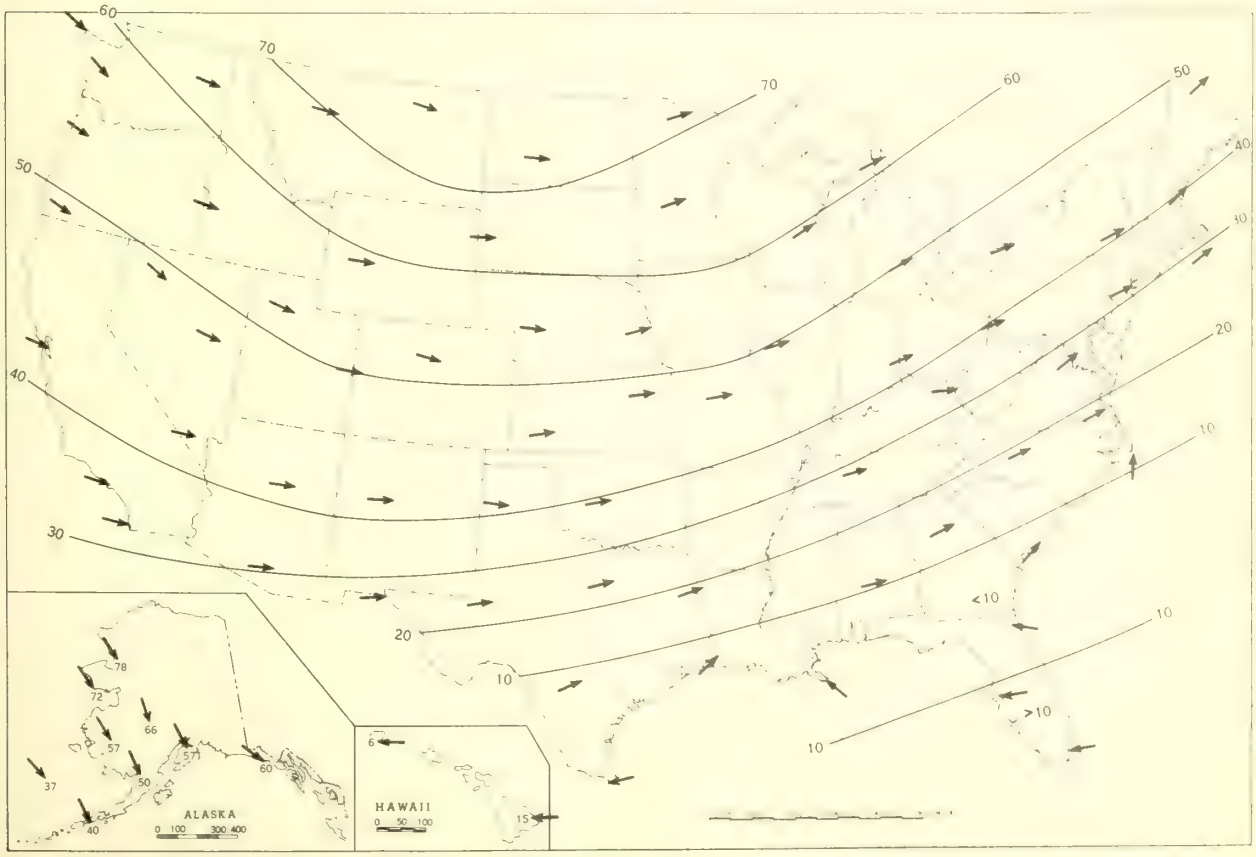


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, January 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, January 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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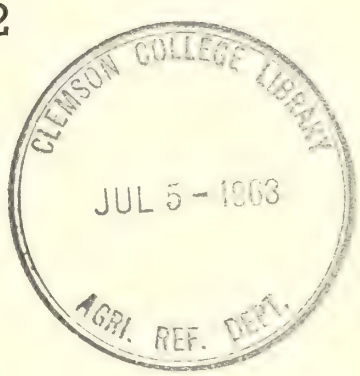
U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

FEBRUARY 1963
Volume 14 No. 2





ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

SUBSCRIPTION PRICE: Monthly 20 cents and annual 40 cents per copy; yearly subscription, including monthly and annual issues, $2.50 domestic, $3.50 foreign. Checks and money orders should be made payable to the Superintendent of Documents. Remittance and correspondence regarding subscriptions should be sent to "Superintendent of Documents, Government Printing Office, Washington 25, D. C."

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 2 FEBRUARY 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

February was unusually cold from the Mississippi River to the Atlantic coast. Some sections of the Ohio Valley, and Great Lakes region reported the coldest February in a generation. In contrast, the month was unusually warm from the western Great Plains to the Pacific coast. Precipitation was generally below normal in the interior of the country, particularly in an area extending from the central Great Plains through the middle Mississippi Valley, the Ohio Valley, and lower Great Lakes region. Precipitation was slightly below normal in virtually all the remainder of the interior sections of the country, and was above normal only in relatively small areas in the western half of the country and along the southeastern coasts including the Florida Peninsula. Snowfall was below normal in the Far West as it has been all winter, and the mountain snowpack remained generally well below normal.

TEMPERATURE.--Temperatures remained below normal levels all month in the Atlantic Coastal States and during the latter half in middle and northern areas from the Great Plains to the Appalachians. The month was coldest, relative to normal, in the Ohio Valley and Great Lakes region where monthly averages were 8° to more than 10° below normal.

At least seven cold air masses moved into the area east of the Rockies during the month, five of which reduced temperatures over the entire area. On about one-half of the days of the month freezing occurred some place along the Gulf coast, and northern stations had more than the usual number of days with subzero minima. The temperature fell to zero or below on 15 days at Green Bay, Wis., and on 14 days at Duluth, Minn.

This was the coldest February since 1936 in most of the Great Lakes region, New Jersey, eastern Pennsylvania, and Maryland, since 1934 in much of New England and New York State, and since 1958 in the Ohio and lower Mississippi Valleys and the Southeast. Pittsburgh, Pa., had its lowest average temperature for February on record. The low average monthly temperatures were due to persistent cold as few record-breaking extreme low temperatures were reported.

This month was one of the warmest Februarys in the Far West. Most long-term stations in California and many in Oregon reported their warmest February on record as did some other scattered stations in other states, among which were Yuma, Ariz., and Seattle, Wash. In the vicinity of Mount Shasta, Calif., flowers and shrubs were blooming about 6 weeks earlier than usual. Record high temperatures for February were observed for a number of stations, among which were Flagstaff, Ariz., 67° on the 5th; Portland, Oreg., 68° on the 10th; Amarillo, Tex., 88° on the 1st; Milford, Utah, 73° on the 5th; and Walla Walla, Wash., 71° on the 4th. February was also warmer than normal in Alaska and Hawaii.

PRECIPITATION.--Precipitation was less than 50 percent of normal in a large area extending from the Ohio Valley and lower Great Lakes through the central Great Plains to the Rocky Mountains. In sections of the middle Mississippi Valley and much of the central Great Plains, precipitation was less than 25 percent of normal, and even less than 10 percent in parts of the latter area where the month was among the driest Februarys on record. Wichita, Kans., measured only 0.02 inch for the month and St. Joseph, Mo., only 0.03 inch. St. Louis, Mo., recorded only 0.25 inch for its driest February.

In contrast, precipitation was unusually heavy on the Florida Peninsula where some stations reported over 200 percent of normal. This was the wettest February since 1920 at Jacksonville, since 1936 at Fort Myers, and was the second wettest February on record at Tampa.

SNOWFALL.--February snowfall was extremely light in the Far West and the mountain snowpack generally remained much below normal. Sexton Summit, Oreg., had no snowfall at all, Blue Canyon, Calif., only 0.6 inch, and Pocatello, Idaho, only 0.7 inch -- all new low February records.

Some areas east of the Rockies had above normal snowfall, particularly the Northeast, the lower Great Lakes region, and many southern localities. Snow fell in virtually all of Texas and as far east as Alabama on the 11th and 12th, and in Louisiana and Mississippi again on the 21st and 22d. From northeastern Ohio and Pennsylvania through New York State and New England heavy snow remained on the ground all month.

DESTRUCTIVE STORMS AND OTHER UNUSUAL PHENOMENA.--Very few severe local storms occurred during the month. High winds, however, on February 3 to 5 were responsible for beach erosion along the Florida coast, with damage estimated at about $1 million in the Jacksonville area. As a severe squall line crossed Florida on the 19th, airplanes were damaged at the Lakeland Airport. Property damage was reported in Casper, Wyo., on the 1st as winds gusted to 83 m.p.h., and high winds caused widespread damage just east of the mountains in Colorado on the same date. Chinook winds were blamed for snowslides in Wyoming on January 31 and February 1.

COLD WINTER OF 1962-63

The winter (Dec.-Feb.) of 1962-63 rates among the most severe in the eastern half of the Nation during the past 100 years. Frequent cold waves kept temperatures below normal much of the winter. At Montgomery, Ala., temperatures were below normal on 68 days and normal or above on only 22 days. From the Great Lakes region to the Gulf temperatures for the winter averaged from 6° to more than 8° below normal.

At Montgomery, Ala., the winter was the coldest on record. Minimum temperatures fell below freezing on 48 days (average number is 27 days) and on 4 days the maximum temperature failed to rise above 32°.

At Cleveland, Ohio, where this winter was also the coldest on record, the minimum temperature fell to zero or below on 18 days (average number is 3 days) and below

freezing on 87 days. The maximum temperature did not rise above freezing on 49 days.

A notable cold wave, probably the most severe on record for December, brought record-breaking low temperatures for December to much of the South on the 13th, and Florida crops were damaged to the extent of many millions of dollars. Snowfall was heavier and more extensive than usual, and the month ended with one of the worst blizzards ever known in northern New England where snowfall, ranging up to 35 inches, was drifted by winds up to 60 m.p.h. or more, while temperatures ranged from 0° to -20°.

During another notable cold wave the fourth week of January, temperatures dropped to alltime low levels at numerous points in the Midwest and South, and periods of subzero temperatures in the North Central Interior were among the longest on record.

With continued cold weather through February, the 1962-63 winter was the coldest on record at a number of locations in an area which included Illinois, Indiana, Ohio, and western Pennsylvania, and extended southward and southeastward almost to the Gulf. Some of these stations are listed in the following table:

	Average Temperature	Previous lowest	Year records began
Cleveland, Ohio	20.5	20.7 in 1903-04	1871
Dayton, Ohio	22.9	23.0 in 1917-18	1883
Toledo, Ohio	18.6	19.6 in 1903-04	1871
Pittsburgh, Pa.	21.5	23.4 in 1935-36	1871
Peoria, Ill.	18.3	18.4 in 1935-36	1856
Nashville, Tenn.	33.4	34.2 in 1917-18	1871
Chattanooga, Tenn.	34.8	37.2 in 1904-05	1879
Atlanta, Ga.	38.8	38.8 in 1904-05	1879
Birmingham, Ala.	40.4	40.9 in 1904-05	1895
Montgomery, Ala.	43.4	44.9 in 1904-05	1872

By the end of February ice covered 95 percent or more of Lakes Superior, Michigan, and Huron. Georgian Bay, Lake St. Clair, and Lake Erie were frozen over except for some narrow open stretches in Lake Erie. Lake Michigan was frozen over between Milwaukee, Wis., and Muckegon, Mich., from February 26 to the end of the month, the only other such known occurrence having been in February 1936.

Floating ice appeared in the Mississippi River as far south as Cape Girardeau, Mo., by the middle of January. At Harrisburg, Pa., the Susquehanna River was frozen over for 77 days, the fourth longest such period on record.

Records indicate this to be the third coldest winter in the Great Lakes region since the turn of the century, being exceeded only in 1903-04 and 1917-18. Other extremely cold winters in this region were those of 1916-17, 1919-20, and 1935-36.

The winter as a whole has been mild in the Far West, even though unusually cold weather in January caused some crop damage from the Rio Grande Valley of Texas to southern California. December and February were both mild months, particularly the latter month which has been the warmest of record at a number of stations in the Pacific States and western Arizona. The lack of snowfall has been the main weather concern in the Far West. The mountain snowpack, important as a source of irrigation water, is the lowest of record in some sections, and below normal, with few exceptions, throughout the West.

CONDENSED CLIMATOLOGICAL SUMMARY

FEBRUARY 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Brewton 3SSE	82	2	Waterloo	-1	22	Newton	7.57	Dancy 4N	1.20
Alaska	2 Stations	63	8+	3 Stations	-60	7+	Little Port Walter	32.52	Farewell FAA	.06
Arizona	Montezuma	105	3	Maverick	-18	13	Pinal Ranch	5.88	4 Stations	.00
Arkansas	2 Stations	80	6	Batesville Lock and Dam No1	0	22	Newport	3.36	Lead Hill	.00
California	Perris	99	3	White Mountain 1	1	17+	Honeydew 2WSW	16.35	El Centro 2SSW	.07
Colorado	Eversoll Ranch	88	1	Sugar Loaf Reservoir	-37	12	Wolf Creek Pass 1E	3.02	2 Stations	.00
Connecticut	Norwich Pub Util Plant	50	19	Norfolk 2SW	-17	9	Groton	4.41	Dawson Lake	2.09
Delaware	2 Stations	64	11	Wilmington Porter Reservoir	4	[illegible]	Selbyville	2.42	Milford 3WNW	1.47
Florida	Sanford Exp Station	88	3	2 Stations	18	23+	Longoat Key	12.44	Dry Tortugas	1.69
Georgia	Quitman	84	11	3 Stations	1	23+	Sapelo Island	7.52	Chatsworth	1.80
Hawaii	Haina 214, Hawaii	92	1	Mauna Loa Slope Obs.	23	14	Waikamoi 449, Maui	11.70	Puu Laau 1024, Hawaii	.24
Idaho	2 Stations	72	6	Island Park Dam	-13	12	Burke 2ENE	5.53	Mackay RS	T
Illinois	do	65	23+	2 Stations	-22	26	Mount Pulaski	1.57	Tiskilwa	.02
Indiana	Crane Naval Depot	67	7	Delphi 3NNE	-24	26	Bloomington 5SW	1.83	Indianapolis Fall Creek	.23
Iowa	Shenandoah	60	5	Atlantic 1NE	-28	26	Mason City FAA AP	1.44	Sidney 1NNW	.06
Kansas	4 Stations	88	1	Great Bend	-8	11	Geneseo	1.00	15 Stations	.00
Kentucky	Williamsburg 2	74	7	Farmers	-13	22	Mount Vernon	D 6.23	Paducah	D .12
Louisiana	Franklinton 3SSE	83	3	2 Stations	15	13+	Pearl River Lock 1	6.59	Rodessa	.92
Maine	Hiram 2S	46	19	Haynesville	-40	27	Bar Harbor	5.64	Orono	1.21
Maryland	Snow Hill	66	11	Oakland 1SE	-24	27	Crisfield Hammock Pt	2.73	Savage River Dam	.96
Massachusetts	2 Stations	53	18	West Cummington	-26	27+	Washington 2	4.76	Pittsfield WBAP	2.05
Michigan	Charlotte	50	19	3 Stations	-36	26+	Kincheloe AF Base	2.67	2 Stations	.10
Minnesota	2 Stations	61	5	Crane Lake Ranger Sta.	-40	3	Walker Ah Gwah Ching	1.23	Tyler	.06
Mississippi	do	81	[illegible]	2 Stations	5	22	McHenry 5ESE	5.66	West Point	1.39
Missouri	4 Stations	71	6+	Shelbina	-21	26	Fisk	1.40	8 Stations	T
Montana	Grassrange	71	[illegible]	Thoeny 3N	-35	2	Heron 2NW	4.99	4 Stations	T
Nebraska	Imperial FAA AP	73	5	Nenzel 20S	-17	21	Whitman 24N	1.74	3 Stations	.00
Nevada	Sunrise Manor Las Vegas	84	6	2 Stations	-2	12	Mt Rose Highway Sta	4.69	Goldfield	.00
New Hampshire	Windham	50	6	Fabyan	-34	27	3 Stations	3.50	Whitefield	1.45
New Jersey	Atlantic City WBAP	60	6	High Point Park	-18	[illegible]	Bass River St Forest	4.29	New Brunswick Exp Station	1.38
New Mexico	Potash Mine	88	1	Danley Ranch	-25	13	Gascon	3.44	Bingham	.08
New York	Alfred	58	6	Franklinville	-35	27	Liberty	4.83	Mount Morris 2W	.25
North Carolina	Greenville	77	[illegible]	3 Stations	-7	23+	Ocracoke	8.04	Swannanoa 2E	1.00
North Dakota	Dickinson FAA AP	63	6	Cooperstown	-34	21	Valley City	.99	Chaffee 5NE	.04
Ohio	Hillsboro	66	7	Charles Mill Dam	-28	26	Clarington Lock 14	1.88	Columbus Sullivant Ave.	.19
Oklahoma	2 Stations	88	1	3 Stations	5	22	Soboltower	1.08	3 Stations	.00
Oregon	Seaside	75	10	McDermitt	[illegible]	12	Valsetz	15.28	Harper	.25
Pennsylvania	New Stanton	70	6	2 Stations	-37	27+	Blairsville 6ENE	5.08	North East 2SE	.39
Puerto Rico	2 Stations	92	25+	Canovanas 2N	50	6	Rio Grande El Verde	6.67	Coamo Dam	.15
Rhode Island	Providence WBAP	50	18	Greenville	-5	[illegible]	Block Island WBAP	3.52	Greenville	3.06
South Carolina	2 Stations	75	19+	Caesars Head	-2	22	McClellanville	6.10	Caesars Head	1.94
South Dakota	Longvalley	72	5	2 Stations	-22	25+	Deadwood	4.93	3 Stations	T
Tennessee	2 Stations	72	7+	Mountain City 2	-11	27	New Tazewell	4.48	Martin U of Tenn. Branch	.91
Texas	Cotulla FAA AP	99	1	Muleshoe 1	2	13	Cleveland	5.74	9 Stations	.00
Utah	2 Stations	78	8+	Bryce Canyon FAA AP	-15	12	Deer Creek Dam	6.00	Castle Dale	T
Vermont	3 Stations	45	19	Enosburg Falls	-40	4	Searsburg Station	3.43	Enosburg Falls	.71
Virginia	Norfolk WBAP	70	11	Monterey	-14	15	Driver 4NE	D 4.43	Partlow 3WNW	.45
Washington	3 Stations	74	10+	Chewelah 2S	-10	2	Aberdeen 20NNE	16.85	Waterville	.28
West Virginia	Williamston	69	7	Birch River 6SSW	-30	15	Pickens 1	4.86	Brushy Run	1.02
Wisconsin	Janesville	48	6	Big Saint Germain Dam	-37	26	Reedsburg	1.78	Spring Valley	.02
Wyoming	3 Stations	69	6+	Bondurant 3NW	-31	12	Alpine 2S	3.85	2 Stations	.00

\+ And also on an earlier date or dates.

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of snowfall.

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation above ground	Pressure: Station	Pressure: Sea level	Temperature: Average max. for month	Average min. for month	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F. or above	No. of days: Min. 32° F. or below	Average dew point	Average relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	No. of days: 0.1 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths, sunrise to sunset	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	992.2	1019.5	54	28	40.8	- 6.9	89	6+	9	22	0	23	28	66	[illegible]	-2.03	1.52	7	3	0.5	1	11.9	N	36	N	2	8	7	16	5.2	56
HUNTSVILLE	605	995.6	1019.7	51	25	38.0	- 7.1	66	28+	5	22	0	24	24	67	1.[illegible]	-3.16	1.04	6	[illegible]	1	1	12.3	N	45*	ESE	12	9	6	16	5.2	
MOBILE	211	1016.9	1018.8	60	36	47.8	- 6.9	75	2	25	27+	0	11	32	60	4.[illegible]	-0.48	1.40	5	1	1	1	9.8	N	29*	NNW	18+	11	7	13	5.2	
MONTGOMERY	195	1010.5	1019.1	56	31	43.6	- 6.7	75	2	17	22	0	16	29	59	3.[illegible]	1.06	1.06	5	2	1	1	11.1	N	32	N	2	11	6	14	5.5	58
ALASKA												8																				
ANCHORAGE	90	998.3	1003.3	30	17	23.5	5.5	44	25	- 4	5	0	28	16	70	1.35	0.68	0.82	9	0	19.8	14	7.4	N	44*	N	1	8	5	18	6.5	44
ANNETTE	110	1006.7	1008.7	49	41	44.8	9.7	63	7	28	5	0	4	39	82	16.52	7.98	2.86	24	0	1.3	1	10.8	ESE	31*	SSE	6	3	1	24	8.9	
BARROW	22	1021.3	1021.8	- 9	-24	-16.8	1.5	12	28+	-44	6	0	28	-26	80	0.27	0.10	0.15	8	0	3.4	8	9.5	ENE	35*	WSW	2	10	6	12	5.3	
BARTER ISLAND	19	1018.6	1020.4	- 7	-20	-13.5	6.1	9	26	-35	7+	0	28	-20	68	0.22	-0.13	0.08	8	0	2.2	21	10.5	E	40*	E	25	7	4	17	6.9	
BETHEL	126	1005.8	1007.1	17	5	11.0	2.8	40	24	-16	7	0	28	6	78	0.09	-1.03	0.06	3	0	1.7	1	14.0	NNE	31*	NNE	8	10	4	14	5.7	
COLD BAY	94	997.0	1000.6	32	26	29.1	1.1	41	19+	13	8+	0	22	25	86	0.43	-2.74	0.19	10	0	1.6	1	14.9	N	37*	E	16+	2	4	22	8.8	
CORDOVA	40	1001.0	1002.7	42	29	35.4	9.2	52	24	8	4	0	15	30	82	8.46	3.82	2.43	21	0	10.1	8	7.2	ESE	29*	ESE	7	2	4	25	9.6	
FAIRBANKS	436	994.2	1012.4	9	-10	- .3	2.6	89	24	-46	5	0	28	- 7	74	0.27	-0.25	0.07	7	0	5.0	17	3.7	NNE	20*	NE	1	8	8	12	6.1	
JUNEAU	17	1007.8	1008.5	38	28	33.1	6.3	49	7	4	3	0	14	29	86	6.03	2.97	0.91	24	0	15.7	17	7.2	E	28*	ESE	22	3	0	25	9.1	15
KING SALMON	43	1000.3	1001.9	27	10	18.2	0.8	46	22	-15	7	0	27	11	74	0.51	-0.44	0.31	7	0	1.9	1	12.2	N	43*	E	17	12	4	12	5.4	
KOTZEBUE	10	1014.9	1015.5	7	- 7	.2	4.2	30	26	-29	7	0	28	- 6	74	0.25	-0.05	0.11	7	0	6.4	8	9.0	ENE	29*	ESE	25	12	3	13	5.5	
MC GRATH	334	997.3	1010.8	12	- 9	1.1	1.0	33	25	-47	6	0	28	- 6	69	0.10	-1.04	0.05	5	0	3.2	17	4.5	N	17	NNE	22	7	7	14	6.4	
NOME	13	1012.2	1012.9	19	3	11.1	5.6	37	24	-13	7	0	28	3	69	0.27	-0.67	0.09	7	0	3.0	2	9.8	N	29*	NNE	17+	14	3	11	6.8	42
ST. PAUL ISLAND	22	1005.8	1006.6	25	17	21.2	- 2.1	36	20+	2	28	0	27	18	84	0.47	-0.86	0.16	10	0	2.8	2	19.3	N	46*	N	24	4	3	21	8.0	
SHEMYA	122	1000.9	1004.3	36	30	33.3	2.5	39	13	21	26	0	17	29	84	0.80	-1.48	0.11	22	0	5.8	3	20.6	E	51*	E	28	0	1	27	9.9	
YAKUTAT	28	1003.7	1004.9	40	31	35.7	7.1	54	7	13	5	0	12	31	85	17.27	9.87	3.17	20	0	1	1	8.6	E	46*	SSE	22	1	1	26	9.1	
ARIZONA																																
FLAGSTAFF	6993	977.5	1019.9	52	21	36.7	6.1	67	5	- 1	13	0	27	21	60	1.28	-0.50	0.71	5	0	10.9	5	6.8	NNE	30*	NNE	28	10	7	11	5.6	
PHOENIX	1117	976.5	1016.1	75	45	60.2	5.7	89	7	38	13	0	0	32	40	1.16	0.31	0.85	2	1	0.0	0	5.8	ESE	17*	N	27+	12	7	9	4.6	90
PRESCOTT	5014	848.2	1018.6	62	31	46.7	7.1	77	6	19	13	0	16	25	51	0.82	-0.26	0.64	3	0	1	1	8.6	SW	31	N	27	13	6	9	4.6	86
TUCSON	2584	927.0	1015.7	71	44	57.5	5.1	86	6	33	14	0	0	30	42	0.81	-0.03	0.66	2	0	0.0	0	9.6	SSE	32	SE	3	15	7	6	3.6	90
WINSLOW	4880	853.6	1020.8	58	28	42.7	4.7	72	26	15	13	0	22	26	59	0.75	0.27	0.68	4	0	1.5	T	7.8	SW	31*	WSW	26	10	8	10	5.6	
YUMA	199	1010.5	1015.9	83	52	67.5	7.4	92	26+	43	13	7	0	32	33	0.13	-0.23	0.13	1	0	0.0	0	6.5	N	33	N	27	17	8	3	3.6	94
ARKANSAS																																
FORT SMITH	449	1002.4	1020.6	52	26	38.9	- 4.8	73	27	10	22	0	21	24	61	1.06	-2.37	0.74	5	0	T	T	8.0	ENE	33	SW	27	8	6	14	6.3	55
LITTLE ROCK	257	1006.8	1020.6	52	27	39.4	- 5.0	79	6	10	22	0	24	24	60	2.70	-1.63	1.15	8	1	0.4	T	8.9	NNE	38	S	27	12	5	11	5.5	60
TEXARKANA	361		1020.1	57	32	44.5	- 4.0	76	6	19	22+	0	16	30	63	2.29	-1.73	1.83	8	2	0.5	T		NE								76
CALIFORNIA																																
BAKERSFIELD	494	1002.6	1020.6	68	48	58.4	6.4	79	7+	41	23	0	0	50	77	1.54	0.40	1.08	5	1	0.0	0	6.2	NW	28*	NW	13	7	7	14	6.6	
BISHOP	4108	876.9		64	33	48.6	7.9	75	25	26	17+	0	14			0.63	-0.35	0.58	3	0	0.0	0						8	6	14	6.0	
BLUE CANYON	5280	841.8		52	39	45.6	9.0	64	7	30	14	0	2			5.27	-4.92	2.39	9	0	0.6	T	7.8	ENE	53	WSW	1	2	6	20	7.9	
BURBANK	699	991.7	1017.9	72	50	61.2	6.0	87	3	45	19	0	0	45	64	4.17	0.95	3.53	5	1	0.0	0	6.0	ESE	29*	SSE	9	11	5	12	5.6	
EUREKA U	43	1017.5		61	49	55.3	7.1	73	5	41	27	0	0			4.74	-0.79	1.14	18	2	0.0	0	7.1	S#	32	S	4	0	8	20	8.5	42
FRESNO	326	1007.3	1019.4	66	46	56.4	6.6	74	7+	38	24	0	0	50	84	2.01	-0.18	1.15	4	1	0.0	0	5.9	NW	23	NW	13	5	8	15	7.2	62
LONG BEACH	34	1016.8	1018.4	70	51	60.6	6.7	90	3	45	23	1	0	51	78	4.49	2.18	3.59	6	1	0.0	0	5.6	WNW	24*	W	4	7	10	11	6.1	
LOS ANGELES	97	1014.6	1018.6	69	54	61.1	6.9	92	3	49	28+	1	0	51	75	4.48	1.60	3.67	6	1	0.0	0	6.6	W	21*	W	11	9	7	12	6.0	
LOS ANGELES U	312			71	55	62.7	5.6	88	3	49	19	0	0			2.88	-0.45	2.49	5	1	0.0	0	5.7	SE#	28	SE	9	8	12	8	5.0	71
MT SHASTA R	3544	895.4		54	35	44.3	7.3	66	25	27	15	0	9			3.74	-2.17	0.88	12		T	T						4	5	19	7.6	
OAKLAND	3	1019.5	1020.0	64	50	57.1	6.4	72	22	42	28+	0	0	50	80	2.64	-0.57	1.27	7	0	0.0	0	7.1	WNW	21*	SE	12+	2	10	16	7.4	
POINT ARGUELLO	367	1004.7		65	48	56.6	5.6	81	3	40	28+	0	0			3.60	1.38	2.28	8	0	0.0	0	8.6		28*	SE	9	9	7	12	6.1	
RED BLUFF	341	1006.8	1019.7	65	47	55.8	6.1	75	23	40	17+	0	0	46	76	2.28	-1.03	0.89	11	0	0.0	0	7.9	SSE	34	SE	1	5	5	18	7.4	64
SACRAMENTO	17	1019.0	1020.0	65	47	55.9	5.7	73	6	39	28+	0	0	51	86	2.09	-0.90	1.30	8	0	0.0	0	4.2	SE	26	NW	22+	3	8	17	7.6	56
SACRAMENTO U	23			66	49	57.6	6.6	73	6	43	28+	0	0			1.75	-1.72	1.04	7		0.0	0										
SANDBERG R	4517	865.2		58	44	50.7	9.3	71	7	35	17	0	0			2.25	-0.33	1.84	5	0	0.0	0	13.4	N	45*	N	26+	10	7	11	5.4	
SAN DIEGO	13	1014.6	1017.8	70	53	61.2	4.5	85	3	47	23	0	0	49	71	1.22	-0.93	0.94	5	0	0.0	0	6.6	NW	30	S	9	9	8	11	5.3	68
SAN FRANCISCO	8	1019.7	1020.5	63	49	55.9	5.0	70	23	41	24	0	0	50	83	2.03	-1.45	0.85	7	0	0.0	0	8.2	W	37	W	26	4	7	17	7.5	
SAN FRANCISCO U	52			64	53	58.4	5.4	72	7	47	24	0	0			1.92	-1.74	0.84	7	0	0.0	0										62
SANTA MARIA	238	1010.5	1019.4	70	47	58.3	6.5	84	3	37	24	0	0	49	78	3.30	0.80	1.80	6	0	0.0	0	6.4	WNW	29*	NW	26	9	7	12	5.4	
COLORADO																																
ALAMOSA	7536	770.0		40	3	21.9	- 1.6	61	6	-30	13	0	28			1.42	1.25	1.15	6	0	16.0	12						10	8	10	5.3	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover (tenths sunrise to sunset)	Possible sunshine
		Station	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90° F. or above	No. of days: Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
COLORADO	Ft.	Mb.	Mb	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO SPRINGS	6173	811.3	1019.5	52	25	38.7	7.1	76	5	3	12	0	23	15	43	0.25	-0.13	0.13	4	0	2.1	1	9.6	NNE	40*	W	1	9	10	9	5.6	
DENVER	5283	847.7	1017.8	52	23	37.3	4.8	76	5	0	12	0	23	17	48	0.21	-0.48	0.11	4	0	2.1	1	11.1	S	43	W	1	5	14	9	6.1	72
GRAND JUNCTION	4849	861.9	1020.8	49	28	38.6	6.0	61	6	16	13	0	22	21	55	0.47	-0.22	0.29	4	0	0.2	4	4.3	ESE	30	NE	10	8	9	11	5.9	73
PUEBLO	4639	856.8	1018.6	55	23	38.7	4.8	77	5	-3	12	0	24	19	53	0.28	-0.20	0.17	5	0	1.8	1	8.3	WNW	56	NW	1	11	5	12	5.4	79
CONNECTICUT																																
BRIDGEPORT	7	1015.9	1017.1	33	17	25.1	-5.4	63	6	-5	8	0	28	14	64	2.17	+0.79	0.78	8	0	6.8	4	14.6	W	56*	NNW	15	7	10	11	5.9	
HARTFORD	169	1009.3	1015.7	31	12	21.6	-6.2	46	18	-7	8	0	28	11	69	3.33	0.39	1.45	10	0	14.5	12	9.2	NW	32	NW	15	7	8	13	6.0	69
NEW HAVEN	6	1016.3		33	17	25.2	-4.4	45	18+	-4	8	0	28			3.13	-0.06	1.26	7		8.5	4	9.3		32	NW	16	8	10	10	5.8	67
DELAWARE																																
WILMINGTON	78			36	19	27.5	-6.3	53	6	6	8	0	27			2.09	-0.86	0.83	8	0	4.6	3	11.4	WNW	35*	NW	21	10	6	12	5.7	
DIST. OF COLUMBIA																		1														
WASHINGTON U	72			41	25	33.0	-4.1	59	6	9	22	0	25			1.96	-0.68	0.81	6													
WASH NATL AP	14	1013.5	1018.1	39	23	31.0	-6.8	55	20	9	22	0	26	14	52	1.94	-0.53	0.77	6	0	2.0	2	9.0	S	37	NW	1	9	5	16	5.9	56
FLORIDA																																
APALACHICOLA U	13	1015.9		59	43	50.6	-6.2	69	14	30	27	0	3			4.91	1.00	2.56	8	3	0.0	0	8.2	E	35	N	3	6	8	14	6.3	62
DAYTONA BEACH	31	1015.9	1017.8	64	46	54.7	-5.9	82	2	34	27+	0	0	46	75	5.83	1.08	1.98	10	4	0.0	0	10.3	NNW	36*	N	6	5	8	15	6.4	
FORT MYERS	13	1016.9		72	52	62.4	-2.8	81	11	43	28	0	0			4.65	2.44	1.60	11	2	0.0	0	8.6		28*	WNW	26	8	10	13	5.3	
JACKSONVILLE	24	1016.8	1018.4	62	41	51.5	-6.0	81	11	29	27	0	4	42	73	4.93	4.02	3.46	9	2	0.0	0	10.8	NW	52	NE	3	6	9	13	6.2	61
KEY WEST	5	1016.1	1017.4	76	64	68.9	-1.6	81	26+	58	27	0	0	60	74	1.77	-0.71	1.19	9	3	0.0	0	12.7	ENE	32	NE	16	10	11	7	5.2	78
LAKELAND U	214			67	48	57.3	-5.8	81	29	36	27+	0	0			4.59	4.08	2.78	10	3	0.0	0	8.6					9	6	14	5.9	52
MIAMI BEACH	9			75	61	67.5	-2.1	82	19	46	27	0	0			3.25	1.65	1.05	8	0	0.0	0	13.7		37	SW	26	9	10	9	5.5	54
MIAMI	7	1016.6	1017.4	74	58	66.8	-2.1	85	19	47	27	0	0	57	76	3.45	1.58	1.52	7	3	0.0	0	9.8	N	32*	WSW	26	8	9	11	5.9	
ORLANDO	106	1012.9	1017.7	67	47	57.2	-4.2	85	2	35	27+	0	0	48	76	4.76	2.34	1.58	9	4	0.0	0	10.2	NNE	46*	WSW	19	8	8	12	5.9	
PENSACOLA U	13			58	39	48.6	-7.3	72	6	27	27	0	5			5.53	1.26	2.24	10	2	0.0	0	10.6	N	35	SE	18					60
TALLAHASSEE	58	1015.8	1018.7	62	37	49.3	-6.3	76	2	23	23	0	9	38	68	5.81	1.63	1.72	10	2	0.0	0	10.9	N	39*	W	19	5	9	14	6.5	
TAMPA	19	1016.4	1018.2	66	48	56.8	-5.9	79	11	37	27	0	0	49	77	4.95	2.11	3.25	10	2	0.9	0	13.1	N	37*	SW	19	8	6	14	6.1	59
WEST PALM BEACH	15	1016.4	1017.6	74	54	63.8	-3.8	85	19	45	27+	0	0	55	76	3.01	0.66	1.14	8	3	0.0	0	10.8	WSW	35*	WNW	26	7	8	15	6.1	
GEORGIA																																
ATHENS	803	986.1	1018.7	52	28	39.9	-6.2	68	1	11	22	0	21	26	61	3.76	-0.94	1.26	7	1	0.0	0	10.0	WNW	29*	W	14	9	8	11	5.5	
ATLANTA	1005	975.1	1018.4	50	28	38.9	-7.6	68	6	8	22	0	18	22	55	3.24	-1.27	1.24	9	1	1	1	10.3	WNW	30*	NW	26	10	8	10	5.4	64
AUGUSTA	144	1011.2	1018.1	56	31	43.5	-5.8	73	1	20	18	0	17	30	64	3.48	-0.04	0.94	10	1	1	1	8.5	ENE	25*	NW	21+	7	8	13	6.1	
COLUMBUS	385	1001.9		57	31	43.9	-5.8	76	2	15	22	0	17			3.25	-1.38	1.70	7	2	0.9	0	10.3		29*	NW	26	12	6	13	5.6	
MACON	356	1006.4	1018.4	57	33	44.7	-6.4	72	7	17	22	0	15	28	58	3.62	-0.64	1.58	7	1	0.0	0	9.9	NW	31	W	14	7	10	13	5.6	64
ROME	637	995.3		51	23	36.9	-7.5	71	6	6	22	0	26			2.86	-2.44	1.38	7		1	1						9	11	8	5.2	
SAVANNAH	48	1015.6	1018.4	58	36	47.1	-6.0	74	19+	24	23	0	10	35	67	5.06	1.38	1.80	9	2	0.9	0	11.6	NE	34	W	19	7	6	15	6.1	56
THOMASVILLE U	283			61	38	49.5	-5.8	76	2	24	27	0	8			4.03	0.04	0.80	12	2	0.5	0						10	6	12	5.9	
HAWAII																																
HILO	31	1013.2	1015.1	82	64	72.9	2.3	87	22+	59	14	0	0	63	74	1.79	-1.24	0.79	9	5	0.0	0	9.6	SW	46	ENE	1	13	7	8	4.7	66
HONOLULU	7	1015.0	1015.3	80	65	72.2	-0.2	84	10	58	11	0	0	63	75	1.11	-2.19	0.73	6	1	0.0	0	8.4	NE	26	W	1	11	13	6	4.5	71
KAHULUI	44	1012.2	1015.2	82	65	73.9		85	28+	58	15	0	0	65	76	1.37		0.44	8		0.0	0	14.8	S	32*	NNE	17+	14	10	4	4.1	76
LIHUE	115	1009.9	1015.6	81	63	71.6	0.9	84	22+	59	12	0	0	62	73	1.43	-1.89	0.72	9		0.0	0	9.8	W	31	SW		11	12	5	4.5	72
IDAHO																																
BOISE	2838	923.5	1021.4	53	34	43.3	2.3	64	6	25	12	0	11	32	70	1.70	0.37	0.59	8	1	1	1	7.7	SE	31	SW	26	6	5	17	6.9	57
IDAHO FALLS 42NW P	4799			46	19	32.3	13.4	59	5	9	13	0	27			0.65	-0.11	0.40	3	0			4.8	NE	36A	S	1					
IDAHO FALLS 46W P	4933	850.3		46	22	34.2	13.8	57	6+	4	13+	0	27			0.84	0.07	0.61	5	0	2.0	2	7.4	SW	35A	SW	1					
LEWISTON	1413	967.8		49	32	40.7	4.8	59	26	20	24	0	14			0.90	0.01	0.17	12	1	1.3	5						1	7	20	8.2	
POCATELLO	4444	866.6	1022.2	48	29	38.6	11.4	62	6	13	12	0	20	27	67	1.60	0.08	0.27	8	1	0.7	1	10.2	WSW	37	W	1	6	5	17	7.0	51
ILLINOIS																																
CAIRO U	314	1006.1		44	24	32.8	-7.9	63	6	7	22	0	25			1.44	-2.23	0.51	6	6	2.6	1	9.2	NW	36	N	29	7	7	14	6.2	68
CHICAGO O HARE	658	992.2	1018.6	27	6	16.9		48	18	9	15+	0	28	8	64	0.36		0.12	3	0	8.6	6	11.0	SSW	26*	N	7	6	11	11	6.0	
CHICAGO MIDWAY	610	995.1	1019.3	28	16	19.2	-8.7	50	18	-7	22	0	28	9	66	0.54	1.06	0.18	9	0	11.2	8	12.0	NW	28	NW	2	7	8	13	6.1	62
MOLINE	582	996.3	1019.7	28	8	17.9	-8.3	49	18	-16	3	0	27	9	65	0.37	-0.98	0.09	7	0	5.8	6	10.7	NW	30	NW	26	9	8	11	6.3	55

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F or above	Min. 32 F or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
ILLINOIS	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
PEORIA	652	996.8	1020.3	29	9	18.6	- 9.8	53	18	-13	26	0	28	11	71	0.68	-1.23	0.26	6	0	6.2	5	10.7	S	31	NW	2	4	12	12	6.8	56
ROCKFORD	728	990.3	1019.1	26	6	16.3	- 8.1	45	18	-10	21+	0	28	10	73	0.56	-1.06	0.11	7	0	8.4	6	10.1	S	27*	WNW	19	9	9	10	6.1	
SPRINGFIELD	588	995.6	1019.9	33	11	22.0	- 9.1	54	18	-22	26	0	27	12	64	0.83	-0.93	0.59	6	0	11.9	9	12.3	NW	30	NW	20+	5	6	17	7.1	52
INDIANA																																
EVANSVILLE	381	1003.5	1020.2	40	17	28.7	- 7.9	64	6	- 6	22	0	27	17	62	0.62	-0.86	0.32	6	0	0.8	2	7.8	NW	32	N	20	5	11	12	6.5	57
FORT WAYNE	791	985.9	1018.8	29	8	18.6	- 9.2	51	19	-18	27	0	28	12	72	1.09	-1.15	0.51	9	0	12.4	9	10.4	WNW	30	NW	14	6	7	15	6.7	45
INDIANAPOLIS	793	987.8	1019.3	32	11	21.1	-10.0	53	6	- 9	22	0	28	13	70	0.58	-1.75	0.13	8	0	6.8	5	8.5	NW	34*	WSW	20	5	5	18	7.4	68
SOUTH BEND	768	988.7	1018.2	27	9	18.0	- 8.8	44	19+	-11	22	0	28	12	75	1.11	-0.77	0.24	17	0	21.7	16	10.9	SW	29*	NNW	2	5	8	15	7.0	
IOWA																																
BURLINGTON	694	993.2	1020.0	31	12	21.5	- 6.3	54	18	- 8	3	0	26	13	70	0.38	-1.01	0.14	9	0	6.1	6	11.4	NW	40	NW	2	3	9	16	7.0	59
DES MOINES	948	987.5	1020.2	28	10	18.9	- 6.0	47	18	-14	26	0	28	14	79	0.72	-0.38	0.28	12	0	6.5	8	9.3	NNW	34	N	20	8	4	16	6.5	50
DUBUQUE	1065	992.5		26	7	16.1	- 5.9	45	6	-13	21	0	28			0.44	-0.96	0.09	6	0	6.2	9			28*	NNW	4+	8	7	13	6.0	
SIOUX CITY	1095	976.6	1019.9	33	12	22.7	0.0	56	5	-11	26	0	28	15	75	0.55	-0.34	0.21	12	0	5.6	7	10.6	NNW	36	N	1	6	9	13	6.5	56
WATERLOO	868	986.0	1019.9	26	5	15.2	- 6.7	45	5	-18	15	0	28	9	75	0.57	-0.35	0.20	11	0	6.3	3	9.8	NW	35*	NNW	2	7	5	16	6.5	
KANSAS																																
CONCORDIA	1470	967.7	1019.4	47	21	33.6	1.5	71	5	5	21	0	26	20	63	0.03	-0.88	0.03	1	0	0.3	1	12.6	NNW	36	NW	20	7	11	10	5.8	67
DODGE CITY	2594	928.8	1019.1	54	24	39.0	4.0	86	1	8	11	0	25	22	57	0.10	-0.60	0.10	1	0	0.3	T	12.0	NNW	42*	NE	20	9	10	9	5.5	75
GOODLAND	3645	888.6	1018.7	52	23	37.2	6.3	74	5	5	11	0	25	23	64	0.09	-0.42	0.07	3	0	0.2	T	12.2	WSW	40	NNW	1	7	8	13	6.2	
TOPEKA	877	983.2	1020.2	45	20	32.5	- 0.6	68	5	7	21	0	27	20	64	0.14	-0.91	0.14	1	0	2.2	2	12.6	N	42	N	2	6	8	14	7.7	60
WICHITA	1321	968.8	1019.6	50	24	36.9	0.6	69	5	10	11	0	26	21	59	0.02	-0.90	0.02	1	0	0.2	T	13.4	S	44	NE	20	5	12	11	6.1	65
KENTUCKY																																
COVINGTON	869	985.4	1018.7	35	14	24.4	- 9.7	57	6	-10	22	0	28	16	70	1.09	-1.82	0.42	9	0	6.4	5	7.8	SSW	27*	WSW	20	4	8	16	7.5	
LEXINGTON	979	982.2	1019.4	38	19	28.6	- 7.2	60	6	- 7	22	0	26	19	70	1.81	-1.61	0.56	13	0	8.2	3	9.5	S	27*	W	20	7	9	12	6.4	
LOUISVILLE	474	1001.0	1019.5	41	19	30.2	- 5.6	63	6	- 2	22	0	24	18	64	1.11	-2.18	0.41	4	0	3.4	1	8.6	SSE	31	NW	20	4	11	13	6.5	49
LOUISIANA																																
ALEXANDRIA	92	1015.7	1020.7	59	33	45.7		76	6+	21	14	0	17	34	69	3.01		1.49	8	2	T	T	7.4	NNE				12	3	13	5.3	
BATON ROUGE	64	1016.3	1019.7	62	36	49.0	- 5.9	81	2	25	4	0	13	34	63	3.87	-0.55	1.34	5	2	T	T	9.8	N				12	6	10	5.0	
LAKE CHARLES	14	1018.3	1019.8	60	39	49.4	- 6.4	73	10+	25	12	0	9	39	74	4.13	-0.38	3.28	4	1	T	T	10.7	ENE	32*	N	3+	12	6	10	5.3	
NEW ORLEANS	3	1017.3	1019.5	60	37	48.2	- 7.9	79	2+	28	22+	0	9	38	72	5.90	1.91	2.11	7	2	T	T	9.5	NNE	29*	NNE	11	11	6	11	5.1	
NEW ORLEANS AUDUBON	6	1012.2		60	41	50.4		77	1	30	22	0	1			5.50		2.56	6	3	T	T	6.3		26	NE	11	12	5	11	5.0	60
SHREVEPORT	252	1010.8	1020.5	59	34	46.4	- 3.9	78	6+	22	22+	0	13	31	61	2.42	-1.67	0.92	7	1	2.0	1	10.7	S				11	6	11	5.5	63
MAINE																																
CARIBOU	624	985.9	1010.6	17	- 5	6.0	- 6.5	31	18	-25	4	0	28	0	74	2.28	0.26	0.83	13	0	30.6	38	12.2	WSW	37*	WSW	21	8	6	14	6.2	
PORTLAND	61	1009.3	1013.5	30	5	17.4	- 5.4	44	19	-12	17	0	28	8	66	2.95	-0.85	1.01	8	0	22.6	20	9.7	WSW	38	N	20	8	10	10	5.7	58
MARYLAND																																
BALTIMORE	146	1013.3	1018.4	37	18	27.8	- 7.9	54	18	5	23	0	28	14	59	2.07	-0.82	0.88	7	0	2.1	1	9.5	WNW	33	NW	21	12	4	12	5.5	50
BALTIMORE U	14			38	22	30.4	- 7.4	55	6	9	22	0	24			2.03	-0.95	0.88	7	0												
FREDERICK	294			35	17	26.0	- 7.7	50	18	0	17	0	27			1.64	-0.91	0.60	6	0	9.2	5										
MASSACHUSETTS																																
BLUE HILL OBS R	629	988.8	1013.2	32	14	22.6	- 4.8	46	18	- 7	8	0	28			3.22	-0.51	1.27	8		8.4	6	16.4	WNW	45	NW	16					58
BOSTON	15	1009.2	1014.3	34	17	25.9	- 4.4	49	18	- 3	8	0	28	12	58	2.60	-0.72	1.03	8	0	4.6	3	16.0	W	37	NW	16	10	7	11	5.3	64
NANTUCKET	43	1014.1	1014.9	35	22	28.5	- 2.9	51	12	5	8	0	27	18	69	4.46	0.70	2.04	12	0	2.1	2	15.1	WNW	41	E	19	6	8	14	6.4	51
PITTSFIELD	1170			29	5	17.3	- 5.0	48	6	-18	8	0	28			2.05	-0.46	0.60	12		32.5	23										
WORCESTER	986	975.6	1013.9	29	10	19.9	- 5.0	45	6	-10	8	0	28	10	65	3.03	0.11	1.15	10	0	22.2	18	10.3	W	28*	NNE	20	9	10	9	5.3	
MICHIGAN																																
ALPENA	689	989.7		22	- 4	8.8	-11.3	35	17	-25	16	0	28			0.67	-0.94	0.21	12	0	11.4	16	6.7	W	30	SE	1	7	5	16	7.0	62
DETROIT	619	989.6	1017.9	26	11	18.8	- 8.4	45	19+	- 1	26+	0	27	11	68	0.70	-1.38	0.21	12	0	7.6	4	11.2	W	35	NW	20	4	8	16	7.1	48
DETROIT M WAYNE CO	633	1002.4	1018.1	27	9	17.6	- 9.0	43	19+	- 6	26	0	28	9	66	0.67	-1.28	0.21	12	0	8.3	6	9.0	SSW				6	9	13	6.6	
DETROIT WILLOW RUN	711	988.0	1017.9	26	10	17.9	- 9.5	44	19	- 6	26	0	28	12	74	0.58	-1.37	0.22	9	0	7.4	5	12.1	SW	31*	NW	2	6	8	14	6.6	
ESCANABA U	594	993.5		20	1	10.6	- 8.1	35	6	-14	26+	0	28			0.84	-0.37	0.27	10	0	8.4	11	10.0		40	NW	2	7	10	11	6.4	60
FLINT	766	988.9	1018.3	24	6	15.0	- 8.7	47	19	-13	16	0	28	9	74	0.27	-1.49	0.11	9	0	8.5	6	10.0	SW	28*	SSE	1	4	7	17	7.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
GRAND RAPIDS	689	991.6	1018.2	26	8	16.9	- 7.6	45	6	- 9	26	0	28	11	76	0.46	-1.29	0.12	13	0	8.4	14	10.5	WSW	27	NW	20	5	7	16	7.3	32
LANSING	852	983.8	1017.6	25	6	15.7	- 8.5	43	18	-12	26	0	28	8	66	0.39	-1.56	0.11	11	0	5.0	11	13.6	SSW	42	NW	20	4	10	14	6.8	65
MARQUETTE U	677	988.5		20	4	11.7	- 8.0	35	17	-12	3	0	28			0.89	-0.76	0.20	14	0	12.2	20	8.4	W#	34	NW	2	2	7	19	8.0	51
MUSKEGON	627	993.6	1018.0	25	9	16.8	- 7.9	42	6	-12	26	0	28	9	68	0.71	-1.09	0.21	11	0	17.9	27	10.5	WNW	31*	NNW	2	3	6	19	7.9	
SAULT STE MARIE	721	992.2	1016.4	16	- 4	6.1	- 9.1	30	2	-21	22	0	28	0	75	1.74	0.24	0.86	16	0	25.2	32	8.6	WNW	35*	WNW	2	6	3	19	7.3	45
MINNESOTA																																
DULUTH	1426	974.8	1018.6	17	- 3	7.1	- 4.2	37	5	-27	21	0	28	- 2	65	0.87	-0.09	0.28	12	0	14.4	15	12.0	WNW	45	W	20	8	2	18	7.0	51
INTERNATIONAL FALLS	1179	975.7	1019.7	14	-10	2.3	- 4.8	42	5	-33	3	0	28	- 6	66	1.04	0.33	0.27	15	0	11.1	13	8.7	NW	32*	WNW	1	7	4	17	6.9	
MINNEAPOLIS	822	984.2	1019.8	23	2	12.1	- 3.8	43	5	-19	21	0	28	4	68	0.41	-0.37	0.10	10	0	5.4	4	11.2	NW	35	NW	20	6	7	15	7.0	52
ROCHESTER	1297	968.8	1019.4	22	4	13.1	- 4.1	40	5	-17	21	0	28	7	77	0.39	-0.41	0.20	7	0	5.7	7	14.2	NW				9	3	16	6.4	
ST CLOUD	1034	979.2		22	0	10.9	- 2.5	42	6+	-22	21	0	28			0.40	-0.40	0.10	10	0	3.8	3						5	5	18	7.3	
MISSISSIPPI																																
JACKSON	305	1007.3	1019.9	56	31	43.5	- 7.2	76	1	18	22	0	17	31	65	2.82	-2.06	1.33	8	1	1.0	1	9.4	N	36	N	2	12	3	13	5.3	60
MERIDIAN	292	1005.7	1020.1	57	28	42.5	- 8.1	75	2	15	22	0	21	30	66	2.42	-2.67	1.00	6	2	1.0	1	9.1	S	35*	NNE	18	14	4	10	4.9	
VICKSBURG U	234	1010.1		55	34	44.2	- 7.6	73	6+	18	22	0	13			2.74	-2.57	1.28	9	1	3.0	2	9.7		34	E	18	10	7	11	5.4	67
MISSOURI																																
COLUMBIA	778	989.3	1019.1	40	19	29.2	- 4.6	62	5	0	26	0	25	18	64	0.18	-1.63	0.09	3	0	2.0	2	11.7	NW	37	N	2	3	11	14	6.8	48
KANSAS CITY	742	983.5	1019.7	43	22	32.3	- 2.5	67	5	7	26+	0	23	18	58	0.41	-0.83	0.39	3	0	3.3	3	7.3	S	42	NW	20	5	9	14	6.8	62
ST JOSEPH	809	980.9		41	19	29.8	- 1.3	63	5	3	26	0	28			0.03	-1.06	0.03	1	0	0.2	2	12.5	NNW	32*	NNW	20	7	8	13	6.3	
ST LOUIS	535	998.6	1020.1	39	18	28.5	- 6.7	62	20	1	3	0	28	15	59	0.25	-1.79	0.16	4	0	1.8	1	10.7	NW	32	N	20	5	7	16	6.9	49
ST LOUIS RFC	465			40	20	30.2	- 6.2	62	5	3	21	0	24			0.22	-1.99	0.13	3		1.7	1										
SPRINGFIELD	1265	1004.4	1019.7	47	22	34.3	- 2.8	71	5	5	22+	0	26	18	58	0.57	-1.55	0.33	7	0	4.2	4	11.2	SSE	40	W	20	8	6	14	6.4	58
MONTANA																																
BILLINGS	3567	891.5	1018.4	48	26	36.8	11.1	65	5	- 2	2	0	19	21	57	0.31	-0.29	0.14	6	0	2.3	10	13.5	WSW	72	W	1	5	7	16	6.9	58
GLASGOW	2277	941.9		32	14	23.3	9.7	50	5	-20	2	0	27			0.47	0.06	0.16	10	0	3.9	4						4	3	21	8.1	
GREAT FALLS	3662	888.6	1019.4	48	25	36.8	12.5	64	6	-13	2	0	23	21	57	0.32	-0.42	0.25	2	0	3.2	6	14.1	SW	41	SW	3	5	2	21	7.4	58
HAVRE	2582	927.1		39	19	28.7	12.4	58	6+	-25	2	0	26			0.78	0.36	0.25	7	0	6.1	7	9.0	SW#	58	SW	5	3	6	19	7.9	40
HELENA	3893	874.4	1020.5	46	24	34.8	11.6	61	4	- 6	2+	0	21	22	62	0.25	-0.18	0.23	3	0	2.0	7	8.3	WNW	42	N	1	3	7	18	7.4	55
KALISPELL	2965	913.8		41	23	31.6	9.6	52	7	-16	2	0	25			1.00	0.00	0.39	12	0	6.5	18	4.7					4	4	20	7.8	
MILES CITY	2629			38	19	28.6	8.3	56	5	-15	21	0	45			0.66	0.29	0.26	10	0	6.0	5	8.5	W	46	W	1	3	5	20	8.0	
MISSOULA	3190	904.5	1022.6	39	23	31.2	6.2	53	4	7	13	0	25	25	81	0.80	-0.07	0.19	10	0	3.5	18	5.0	NW	47	NW	4	4	5	19	7.6	40
NEBRASKA																																
GRAND ISLAND	1841	950.7	1019.7	41	15	28.1	0.5	60	5	- 4	21	0	28	18	71	0.21	-0.53	0.08	4	0	1.5	3	11.1	NNW				6	8	14	6.7	
LINCOLN U	1150			41	19	30.1	1.4	65	5	- 1	21	0	27			0.27	-0.82	0.18	5		2.2	2	10.5	NW#	35	NE	20	7	6	15	6.4	57
NORFOLK	1544	961.1		38	15	26.5	3.6	58	5	- 6	21	0	28			0.23	-0.55	0.09	5	0	2.9	6						5	10	13	6.8	
NORTH PLATTE	2779	916.1	1018.3	46	19	32.3	4.4	63	7	- 4	21	0	28	23	72	0.15	-0.37	0.13	3	0	0.9	3	10.5	N	35	NW	13	4	8	16	7.1	60
OMAHA	978	978.0	1019.7	37	17	27.1	0.6	56	4	- 3	21	0	28	17	70	0.36	-0.59	0.13	8	0	3.2	7	12.5	NNW	42	NW	2	8	5	15	6.4	56
OMAHA N OMAHA AP	1323	969.2		35	16	25.4	1.1	55	5	- 5	21	0	27			0.38	-0.62	0.10	10	0	3.1	8						6	7	15	6.6	
SCOTTSBLUFF	3950	879.0	1018.6	49	22	35.5	7.0	63	26+	2	11	0	27	22	65	0.14	-0.26	0.10	3	0	1.8	2	12.8	WNW	54*	W	1	2	13	13	6.9	
VALENTINE	2587	924.7		44	16	29.7	6.7	68	5	-13	21	0	27			0.09	-0.47	0.05	5	0	1.3	4	10.6	N#	60	NW	1	3	9	16	7.2	60
NEVADA																																
ELKO	5075	848.0	1021.6	51	26	38.9	10.9	64	6	10	12	0	22	27	65	0.65	-0.24	0.22	8	0	1.0	T	6.6	NE	39*	W	1	6	5	17	6.9	
ELY	6257	810.7	1020.9	51	22	36.8	10.2	66	6	2	12	0	27	23	64	0.49	-0.21	0.18	5	2	2.1	2	7.6	SSW	36	NW	26	5	6	17	6.9	67
LAS VEGAS	2162	951.9	1018.7	68	44	55.8	7.5	78	6	34	17+	0	0	29	40	0.33	-0.11	0.21	3	1	0.0	0	6.6	SW	30*	SW	1	11	7	10	5.2	84
RENO	4404	865.5	1021.3	59	30	44.4	8.3	73	25	22	28	0	22	32	67	1.09	0.07	0.51	4	0	0.0	0	4.1	S	40	S	1	5	4	19	7.5	64
WINNEMUCCA	4299	871.0		56	29	42.8	10.5	67	8+	12	12	0	19			0.76	-0.18	0.35	6	0	T	T	7.4	S	40	SW	1	5	4	19	7.6	55
NEW HAMPSHIRE																																
CONCORD	339	1002.9	1014.2	31	7	18.8	- 3.9	46	18	-16	27+	0	28	8	64	2.37	-0.11	1.03	6	0	14.8	21	9.0	NW	34	NW	16	9	9	10	5.2	61
MT WASHINGTON OBS	6262	788.6		9	-12	- 1.5	- 7.1	27	6	-35	4	0	28			5.60	0.39	1.10	18	0	46.0	17	48.9		105Y	NW	3	4	5	19	7.6	29
NEW JERSEY																																
ATLANTIC CITY	58	1015.4	1017.8	40	19	29.5	- 5.2	60	6	5	8	0	25	17	64	2.50	-0.63	1.28	9	0	0.3	1	10.8	NW	32*	ENE	19	11	5	12	5.6	64
ATLANTIC CITY U	10			38	23	30.7	- 5.0	53	7	8	8	0	24			2.35	-1.03	1.23	7	0			13.1		32*	NNE	19+					

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
NEW JERSEY	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEWARK	11	1015.9	1017.3	36	19	27.6	- 5.1	51	6	- 2	8	0	26	13	57	2.16	-0.64	0.78	10	0	3.6	5	11.9	WNW	32*	NNW	8+	7	9	12	5.9	
TRENTON U	56	1010.0		36	19	27.2	- 6.2	53	6	- 2	8	0	26			2.17	-0.42	0.83	9	0	3.3	2	10.2	NW#	35	NW	3	11	6	11	5.2	56
NEW MEXICO																																
ALBUQUERQUE	5310	849.7	1018.8	54	27	40.5	0.6	72	7	10	13	0	21	24	57	0.24	-0.14	0.11	4	1	0.8	1	7.6	N	40	NW	19+	13	4	11	4.9	77
CLAYTON	4969	845.2		52	24	37.8	1.8	81	1	4	12	0	22			0.50	0.13	0.46	3		5.5	4						10	7	11	5.5	
RATON	6379	805.1		50	19	34.3	1.6	70	5+	1	13	0	26			0.39	-0.03	0.35	4	0	3.9	2						10	7	11	5.6	
ROSWELL	3619	882.2		61	25	43.0	2.4	83	1	- 1	13	0	24			0.77	0.35	0.50	5	0	4.8	2	8.9	W	37	W	1	16	4	8	4.0	77
SILVER CITY	5373	836.7		59	28	43.7		74	7+	5	13	0	18			0.42		0.32	3	0	3.8	4						18	5	5	3.1	
NEW YORK																																
ALBANY	277	1012.6	1016.4	28	7	17.2	- 6.5	44	18	-16	23	0	28	7	64	1.84	-0.36	0.62	10	0	15.5	14	8.6	WNW	34	W	15+	9	3	16	6.4	53
BINGHAMTON	1590	953.6	1015.3	25	8	16.6	- 6.6	41	18	-14	8	0	28	8	71	1.69	-0.49	0.54	15	0	22.6	10	11.7	WSW	27	NW	3	3	5	20	7.8	41
BUFFALO	705	987.5	1017.1	27	11	18.8	- 4.3	42	19+	- 5	26	0	27	10	66	1.03	-1.69	0.33	20	0	15.5	19	14.1	WSW	34	W	20+	1	6	21	8.4	34
NEW YORK U	132	1006.8	1016.4	36	21	28.3	- 5.1	51	18	- 2	8	0	25	14	56	2.55	-0.29	0.98	7	0	3.7	4	10.7	W#	30	W	3	10	9	9	5.2	63
NEW YORK LA GUARDIA	19	1014.9	1016.9	35	21	28.0	- 5.6	50	6	- 2	8	0	24	14	57	2.46	-0.63	1.02	8	0	3.0	3	14.3	WNW	34	NW	8+	8	10	10	5.8	
ROCHESTER	543	996.7	1017.1	26	9	17.9	- 7.0	42	19+	- 6	1	0	27	12	76	1.43	-1.10	0.48	20	0	22.9	8	13.0	WSW	38	W	20	1	9	18	7.8	47
SCHENECTADY	217			29	8	18.5	- 5.2	46	18	-13	8	0	28			1.85	-0.44	0.71	10		16.0	19						12	8	8	5.0	
SYRACUSE	417	993.0	1016.3	27	10	18.4	- 5.9	43	19+	-13	8	0	27	11	72	2.05	-1.08	0.65	20	0	28.3	21	14.4	W	45	W	3	4	7	17	7.3	47
NORTH CAROLINA																																
ASHEVILLE U	2203	936.1		46	22	34.2	- 6.4	66	6	2	22	0	25			1.76	-1.28	0.63	7	0	4.5	3	9.5	NW#	33	SE	19	10	9	9	5.1	58
CAPE HATTERAS R	7	1015.9	1016.7	50	33	41.3	- 5.2	65	12+	15	23	0	15	35	77	7.48	3.55	2.76	15	3	1.3	T	13.7	NNE				8	4	16	6.5	44
CHARLOTTE	735	988.8	1017.9	49	26	37.5	- 7.2	64	25	7	27	0	24	23	60	3.15	-0.40	0.96	8	0	2.5	3	8.9	NNE	27	NE	26	10	7	11	5.5	65
GREENSBORO	891	982.1	1018.2	45	23	33.9	- 7.1	61	6	3	27	0	26	20	61	2.96	-0.34	0.98	8	0	4.9	3	8.8	NNE	30	NW	14	9	9	10	5.7	61
RALEIGH	433	1003.4	1017.8	48	25	36.1	- 6.9	63	7	9	27	0	23	24	65	3.45	0.22	0.97	8	0	6.9	7	10.8	NNE	29*	NE	8	9	8	11	5.9	61
WILMINGTON	30	1014.5	1017.4	53	31	42.2	- 6.5	71	11	17	27	0	16	33	72	4.20	0.78	1.36	12	2	1.4	1	11.4	N	30	N	26+	7	6	15	6.4	51
WINSTON SALEM	967	981.7	1018.0	45	24	34.6	- 7.1	62	6	9	22	0	24	17	52	2.77	-0.71	1.01	8	0	8.0	3	9.6	NE	32*	NE	26	9	8	11	5.8	
NORTH DAKOTA																																
BISMARCK	1647	956.8	1020.3	29	5	16.5	4.0	61	7	-20	25	0	28	8	68	0.48	0.05	0.16	8	0	4.5	3	9.0	WNW	52	NW	1	1	5	22	8.3	32
DEVILS LAKE U	1471	963.8		20	- 2	9.0	0.4	54	5	-23	21	0	28			0.60	0.23	0.29	8		6.8	5	8.8	NW#	27	NW	1	4	7	17	7.4	52
FARGO	900	984.0	1020.6	21	- 1	10.1	- 0.6	51	5	-22	21	0	28	2	67	0.33	-0.18	0.14	8	0	3.9	2	12.4	N	40	NW	2+	6	3	19	7.6	55
WILLISTON U	1899	948.4		29	8	18.8	5.4	55	5	-22	2	0	28			0.53	0.05	0.13	11	0	4.1	3	9.2	N#	47	N	1	2	6	20	8.1	37
OHIO																																
AKRON	1209	978.4	1018.2	29	9	19.0	- 8.7	51	6	-10	26	0	28	12	72	1.08	-1.22	0.31	14	0	18.6	8	10.0	SW	23*	NW	20	5	8	15	7.1	
CINCINNATI OBS	761			37	17	27.2	- 7.9	60	6	- 4	22	0	27			0.91	-1.89	0.42	7	0	2.3	8	6.9	S#	30	SW	20					43
CINCINNATI U	553	994.9		39	19	29.2	- 6.8	64	6	- 1	22	0	25			0.85	-1.70	0.34	9		3.3											
CLEVELAND	777	988.9	1018.2	27	8	17.5	-10.6	45	6	-15	26	0	27	12	75	0.73	-1.60	0.15	13	0	13.4	9	11.4	S	31	SW	20	5	4	19	7.4	44
COLUMBUS	812	986.2	1019.1	32	13	22.4	- 9.7	51	6	-11	27	0	28	13	66	1.01	-1.30	0.26	10	0	8.7	7	10.2	S	27	W	14	4	7	17	7.3	53
COLUMBUS U	724			33	15	23.9	- 9.0	53	6	- 5	22	0	25			0.56	-1.63	0.25	7	0	5.5	3										
DAYTON	997	984.7	1018.8	33	12	22.4	- 8.5	54	6	-10	22	0	27	14	69	0.48	-1.84	0.13	11	0	7.5	6	11.7	S	32	SW	20	4	8	16	7.1	44
MANSFIELD	1296			28	9	18.7	- 9.1	49	6	-10	22	0	28			0.68	-1.92	0.27	11	0	11.6	5						6	5	17	7.0	
SANDUSKY U	606	995.0		30	12	20.8	- 8.8	50	6	- 7	22	0	26			0.94	-1.15	0.23	9	0	11.1	11	9.9	SW#	38	W		8	9	11	5.8	67
TOLEDO	676	991.6	1018.2	28	8	18.1	- 9.2	47	19+	-10	27	0	27	12	70	0.81	-1.07	0.30	13	0	9.4	5	10.2	SW	28	NW	2	6	8	14	6.8	50
YOUNGSTOWN	1178	973.3	1018.0	27	8	17.4	-11.2	47	6	-11	27	0	28	11	71	0.80	-1.70	0.16	15	0	16.5	7	11.2	SSW	25*	WSW	20+	6	5	17	7.2	
OKLAHOMA																																
OKLAHOMA CITY	1280	975.2	1020.1	54	26	40.0	- 0.8	74	5	11	22	0	23	23	58	0.22	-1.15	0.13	3	0	1.6	T	13.8	SSW	42	SW	24	9	10	9	5.8	61
TULSA	676	994.3	1020.4	52	25	38.5	- 2.6	77	27	11	22	0	24	21	57	0.42	-1.35	0.23	3	0	1.5	1	12.0	S	34	N	20	8	7	13	6.1	56
OREGON																																
ASTORIA	8	1016.7	1017.5	57	42	49.7	6.9	68	10	34	12	0	0	45	85	6.44	-3.45	1.59	17	0	0.0	0	9.0	SE	46*	SSW	4	3	1	24	8.6	
BURNS U	4151	875.7		52	29	40.3	10.6	63	24	18	27	0	21			1.15	-0.12	0.40	11	0	0.9	5						6	3	19	7.4	
EUGENE	361	1005.4		57	41	49.3	6.7	66	6	32	27+	0	2			5.27	0.30	1.40	15	0	0.0	0	6.4		31*	SSW	4	2	2	24	8.8	
MEACHAM	4050			46	32	39.1	10.1	58	25	24	27	0	20			3.38	-0.62	1.01	15	0	11.5	6						5	3	20	7.8	
MEDFORD	1298	971.9	1020.3	57	35	46.1	4.5	70	5	27	27	0	8	41	85	2.47	0.07	0.59	14	1	0.0	0	3.9	N	29*	SSE	12	2	5	21	8.2	
PENDLETON	1482	966.1	1020.8	50	35	42.8	5.9	66	4	17	1	0	7	37	84	1.67	0.49	0.45	12	1	0.3	5	7.1	NW	38*	W	26	0	7	21	8.6	
PORTLAND	21	1013.2	1019.0	55	40	47.8	5.8	65	10	32	11	0	1	40	76	3.48	-0.74	1.11	13	0	0.0	1	9.3	ESE	34	S	4	2	3	23	8.6	26

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation					Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile						
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
PORTLAND U	30			42	31	36.3	- 3.9	55	2	13	11	0	17			4.42	-0.48	1.06	14		0.0	1										
ROSEBURG	505	1000.3		60	41	50.4	7.1	72	8	33	27+	0	0			3.94	-0.27	1.22	19	0	0.0	0	3.4	S	25	SW	8	0	6	22	8.8	29
SALEM	195	1011.5	1019.0	57	39	47.7	5.3	66	10+	29	12+	0	4	44	86	3.34	-1.97	1.38	17	0	0.0	1	6.8	S	29*	S	2	3	2	23	8.4	
SEXTON SUMMIT R	3836	885.2		50	39	44.6	9.0	59	23+	30	27	0	3			6.73	2.61	1.69	18	1	0.0	0	14.5	S				3	4	21	8.1	
PACIFIC AREA																																
CANTON ISLAND	11	1010.2	1010.5	88	77	82.8	- 0.2	90	25+	75	4	5	0	71	71	0.41	-1.72	0.19	4	0	0.0	0	13.9	NE	30*	NE	18	10	15	3	4.6	
ENIWETOK	13	1011.2		86	78	82.1	1.2	88	15	75	12	0	0			0.19	-1.65	0.08	5		0.0	0	15.6									
TAGUAC GUAM R	361			82	73	77.4	- 0.9	85	26+	68	26	0	0			9.47	5.98	3.17	20	0	0.0	0	9.7	NE#	26	NE	8					48
JOHNSTON	7	1013.9		81	74	77.6	0.6	85	5	71	9+	0	0			0.37	-1.16	0.15	8	0	0.0	0	10.6		33	E	18	14	12	2	3.8	83
KOROR R	94	1007.5	1010.1	87	75	80.8	0.5	91	23	72	11	1	0	75	87	8.79	1.66	1.68	21	2	0.0	0	7.6	NE	26	NE	11	0	0	28	10.0	60
MAJURO	10	1010.8	1011.1	84	77	80.5	0.1	86	20+	72	5	0	0	73	77	9.57	1.02	3.14	21	3	0.0	0	12.9	E	34	E	24	1	8	19	8.2	46
PONAPE R	123	1005.4	1010.0	86	75	80.3	- 0.2	87	27+	69	21	0	0	74	82	16.37	6.63	4.09	22	4	0.0	0	7.8	NE	25	E	2	0	2	26	9.2	48
TRUK MOEN ISLAND	5	1010.5	1010.6	86	75	80.5	- 0.2	87	27+	70	24	0	0	74	78	7.35	1.06	1.43	19	0	0.0	0	7.3	NE	22	S	11	0	3	25	9.3	48
WAKE	11	1014.9		83	73	78.2	1.1	86	22+	69	16	0	0			0.32	-1.03	0.16	5	0	0.0	0	11.2		24*	WNW	3	11	12	5	4.4	
YAP R	53	1009.1	1010.0	85	75	80.0	- 0.4	88	25+	72	19	0	0	75	87	12.20	7.56	3.11	22	2	0.0	0	10.7	NE	29	NE	28+	0	1	27	9.8	48
PENNSYLVANIA																																
ALLENTOWN	376	1002.8	1017.8	31	13	22.0	- 7.2	45	6	- 3	8	0	28	12	67	2.55	-0.09	0.84	7	0	12.6	5	10.9	W	41*	WNW	15	12	5	11	5.5	
ERIE	732	990.2	1017.8	27	9	18.2	- 8.2	49	6	-11	26	0	26	12	73	0.95	-1.37	0.34	15	0	12.3	9	14.4	S	43*	SSE	2	5	6	17	7.3	
HARRISBURG	335	1003.5	1018.1	34	17	25.2	- 7.4	49	6	3	17	0	27	13	62	1.83	-0.48	0.57	9	0	14.2	7	9.0	NW	28	W	21+	12	1	15	5.7	57
PHILADELPHIA	5	1012.9	1017.7	35	18	26.5	- 6.7	53	6	3	8	0	28	15	64	2.19	-0.61	0.93	9	0	4.7	2	10.8	WSW	31	NW	15	10	4	14	6.0	55
PHILADELPHIA U	35			39	22	30.3	- 4.8	62	6	3	8	0	24			2.04		0.91	7	0												
PITTSBURGH	1137	987.1	1018.9	28	10	19.3	- 9.9	50	6	- 9	27	0	28	13	74	2.09	-0.10	0.44	15	0	20.4	6	8.8	SW	35*	NW	20	5	7	16	7.1	53
PITTSBURGH U	749			34	17	25.1	- 8.3	56	6	2	27+	0	25			2.07	-0.24	0.65	14		11.4											45
READING U	266	1005.1		35	18	26.2	- 7.2	52	6	1	8	0	26			2.23	-0.41	0.69	7	0	8.4	5	11.3	NW#	42	NW	3	12	5	11	5.5	53
SCRANTON	940	981.6	1017.4	28	10	19.3	- 8.0	44	6	- 9	8	0	28	9	66	1.95	-0.04	0.60	9	0	18.0	7	8.7	SW	36	S	20	6	8	14	6.5	51
WILLIAMSPORT	527	998.1	1018.1	31	10	20.7	- 9.2	48	18	- 5	27	0	28	9	63	1.73	-0.78	0.53	13	0	13.6	8	9.5	W	26*	WNW	14	10	3	15	6.3	
RHODE ISLAND																																
BLOCK ISLAND	110	1010.2	1014.6	33	20	26.6	- 4.8	45	2	1	8	0	26			3.52	0.23	1.53	7	0	2.5	1						11	5	12	5.6	
PROVIDENCE	55	1008.9	1015.3	35	17	26.3	- 3.4	50	18	0	8	0	27	13	60	3.15	0.05	1.44	9	0	5.2	4	12.6	WNW	31*	SSW	21+	9	10	9	5.6	64
SOUTH CAROLINA																																
CHARLESTON	41	1015.3	1017.4	56	34	45.3	- 6.2	75	19	23	27+	0	12	32	64	4.90	1.61	2.25	11	1	0.3	T	11.2	NNE	62Y	SW	19	6	7	15	6.5	54
CHARLESTON U	9			54	38	45.9	- 6.4	70	19	25	27	0	8			5.05	1.98	1.97	10	0	T	T	12.1		36	N	26					
COLUMBIA	217	1005.0	1018.2	54	30	42.0	- 6.4	68	7	17	18	0	15	27	61	3.94	0.20	1.13	11	1	T	T	9.0	NNE	29*	WSW	14	9	8	11	5.8	57
FLORENCE	146	1011.5	1017.6	53	31	41.6	- 7.2	70	11	16	27	0	16	28	61	2.27	-0.90	0.86	9	1	1.0	1	10.2	NE	26*	WSW	19	8	6	14	6.0	
GNVLE SPARTANBURG	957	979.7	1017.8	51	27	39.1	- 6.4	70	7	10	22	0	19	23	57	3.25	-0.82	1.28	8	0	2.7	2	8.5	NE	33	W	14	11	6	11	5.2	66
SOUTH DAKOTA																																
HURON	1282	970.2	1019.8	32	8	20.1	3.0	59	5	-13	21	0	28	14	77	0.35	-0.25	0.08	11	0	3.4	5	12.2	NW	42	NW	1	3	7	18	8.0	42
RAPID CITY	3165	901.3	1019.0	43	17	30.2	6.1	63	5+	-10	21	0	25	20	70	0.92	0.44	0.21	12	0	12.0	4	11.7	NNW	50	NW	1	3	6	19	7.6	44
SIOUX FALLS	1420	965.3	1019.4	31	9	19.8	0.7	59	5	-13	21	0	28	12	73	0.53	-0.40	0.26	7	0	6.8	7	10.0	NNW	27*	NNW	1	5	8	15	7.0	
TENNESSEE																																
BRISTOL	1507	961.8	1018.2	42	22	31.9	- 7.6	63	6	2	27	0	24	20	65	2.27	-1.29	0.83	11	0	8.0	3	6.6	SW	26*	W	14	5	8	15	6.8	
CHATTANOOGA	670	990.8	1019.5	47	22	34.8	- 9.1	67	6	3	22	0	24	21	63	2.22	-3.15	0.96	7	0	3.0	1	9.3	N	27	SW	24	9	8	11	5.8	63
KNOXVILLE	950	982.5	1019.2	46	24	35.0	- 7.6	67	6	5	22	0	24	23	64	3.54	-1.27	1.66	8	0	7.2	3	8.6	N	29	SW	25+	9	4	15	6.4	46
MEMPHIS	263	1005.1	1020.5	49	27	37.6	- 7.0	70	6	10	22	0	20	26	65	2.91	-1.78	1.50	8	1	0.8	1	10.1	N	35	N	2	11	6	11	5.1	66
MEMPHIS U	271			48	28	38.0	- 6.7	67	6	12	22	0	19			2.50	-2.05	1.30	11		1.5	1										
NASHVILLE	577	988.8	1019.5	46	22	34.2	- 7.8	66	6	2	22	0	25	23	68	2.83	-1.68	1.16	9	0	8.7	3	9.5	NNW	25	NW	2	7	10	11	6.0	63
OAK RIDGE	905	984.4		44	21	32.5	- 9.1	66	6	2	22	0	26			2.86	-2.94	1.22	9	0	7.7	4	4.6		29Y		14	10	6	12	5.9	
TEXAS																																
ABILENE	1759	956.2	1018.7	62	32	47.1	- 1.3	85	1	15	12	0	14	26	52	0.34	-0.75	0.23	4	0	2.5	2	11.2	SSW	35	N	25	10	5	13	5.7	59
AMARILLO	3607	889.3	1017.5	56	27	41.7	1.9	88	1	11	11	0	21	23	56	0.67	0.05	0.33	6	0	4.8	2	14.1	N	38	NE	27	9	11	8	5.2	69
AUSTIN	597	997.0	1019.5	64	39	51.6	- 2.2	83	1	23	12	0	6	33	55	2.83	0.25	2.44	3	1	1.0	T	10.6	S	45	N	2	10	6	12	5.3	53
BROWNSVILLE	16	1015.7	1018.5	72	48	60.1	- 3.9	90	10	30	14	1	2	48	72	0.65	-0.83	0.38	6	1	T	T	13.2	SSE	34	NW	18	16	2	10	4.6	59
CORPUS CHRISTI	43	1018.0	1019.1	69	44	56.3	- 4.1	92	2	28	14+	1	4	44	69	1.36	-0.34	1.02	5	1	0.0	0	13.9	NNE	42	SE	2	13	4	11	4.9	60

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TEXAS																																
DALLAS	481	1000.9	1020.1	61	33	47.0	- 2.5	87	1	19	22+	0	10	27	52	0.30	-2.25	0.20	4	1	T	T	11.8	S	38	N	2	9	5	14	5.7	64
DEL RIO U	957			68	41	54.4	- 2.3	91	1	25	13	1	4			1.95	1.07	1.88	3	0	T	T										
EL PASO	3918	887.6	1017.0	63	35	49.2	- 0.4	77	6+	11	13	0	8	24	41	0.53	0.12	0.48	3	0	5.3	4	8.5	NNE	54	NE	25	19	6	3	3.0	89
FORT WORTH	544	998.6	1020.1	60	32	46.4	- 2.8	87	1	19	22	0	14	28	56	0.15	-2.09	0.09	4	0	T	T	13.6	NNE	48*	NNE	25	9	6	13	5.9	
GALVESTON U	7			58	45	51.7	- 5.1	73	2	29	12	0	2			2.62	-0.26	1.48	6	0	T	T	13.6		38	NE	18					62
GALVESTON	5	1017.3	1019.7	58	44	50.9	- 5.7	75	2	29	12	0	3	42	74	2.24	-1.11	0.87	7	2	T	T	12.1	N				12	3	13	5.4	
HOUSTON U	41			64	45	54.6	- 2.5	77	2	28	12	0	3			2.79	-0.42	1.77	6		0.0	0										
HOUSTON	50	1016.6	1019.3	64	41	52.6	- 4.7	82	2	25	12	0	4	41	73	2.60	-0.84	1.71	6	2	T	T	11.7	N				9	7	12	5.8	63
LAREDO	500	1003.4	1018.7	72	45	58.5	- 3.2	93	9+	28	12	5	3	37	53	2.04	1.15	0.95	4	1	0.0	0	11.1	SSE	31*	N	2	14	5	9	4.2	
LUBBOCK	3243	904.4	1018.3	58	27	42.5	- 0.6	83	1	7	13	0	22	25	59	0.54	-0.03	0.22	7	0	8.0	4	14.8	W	40*	W	1	12	7	9	4.5	
MIDLAND	2854	916.9	1017.0	63	32	47.4	- 0.9	80	27+	14	13+	0	11	26	50	0.75	0.15	0.36	6	0	2.7	2	11.7	NNE	32*	NE	2	12	5	11	4.8	
PORT ARTHUR	16	1017.6	1019.2	63	39	51.1	- 4.4	80	2	25	12	0	8	40	74	3.97	-0.48	2.82	7	3	T	T	11.0	N	59	N	2	12	5	11	5.2	57
SAN ANGELO	1903	950.1	1018.6	64	33	48.8	- 1.2	85	1	18	13	0	11	28	51	0.82	-0.08	0.61	4	0	3.0	2	8.8	SSE	28*	N	2	11	6	11	5.0	
SAN ANTONIO	792	993.4	1019.0	66	39	52.6	- 2.8	85	1	25	12+	0	6	35	57	3.59	1.94	2.14	5	3	T	T	9.9	NNW	40	NE	2	11	7	10	5.0	65
VICTORIA	104	1014.6		66	41	53.8	- 4.2	83	2	25	12	0	5			1.50	-0.84	0.76	4	1	T	T	12.8		51Y		2	12	3	13	5.5	
WACO	500	998.0	1019.8	62	35	48.7	- 2.8	85	1	21	12	0	11	32	57	0.51	-1.91	0.41	3	0	1.0	T	13.8	S	46*	NNW	2	10	5	13	5.6	
WICHITA FALLS	994	981.5	1019.4	59	30	44.6	- 1.2	84	1	19	3	0	18	24	52	0.52	-0.86	0.26	4	0	4.1	3	10.4	NNE	35*	NNE	20	9	6	13	5.9	
UTAH																																
MILFORD	5028	846.7		53	21	37.2	7.5	73	5	- 6	12	0	24			0.77	0.07	0.41	9	0	8.6	5						7	7	14	6.4	
SALT LAKE CITY	4220	871.3	1022.5	50	27	38.6	5.6	62	6+	13	13+	0	22	25	62	0.67	-0.51	0.29	5	0	0.5	T	8.2	SSE	47	NW	1	7	9	12	6.1	63
WENDOVER	4237	874.0		51	31	41.0	8.2	63	24	15	13	0	15			0.27	-0.03	0.15	4	1	T	T						8	7	13	6.2	
VERMONT																																
BURLINGTON	331	999.4	1015.0	23	- 1	10.7	- 8.7	37	19+	-26	4	0	28	1	62	1.22	-0.57	0.38	12	0	15.8	15	9.5	S	27	N	3	7	4	17	6.9	54
VIRGINIA																																
LYNCHBURG	947	982.4		41	22	31.6	- 7.3	58	6	5	22	0	26			1.86	-0.79	0.72	7	0	9.3	3	7.2		23	NE	8	9	6	13	6.0	52
NORFOLK	26	1016.9	1018.2	44	27	35.7	- 5.9	70	11	15	23	0	20	24	67	3.75	0.54	1.23	11	0	7.5	5	13.1	NNE	40	W	14	9	5	14	6.0	56
RICHMOND	162	1011.9	1018.5	44	23	33.3	- 6.6	64	11	9	27	0	26	21	63	2.98	0.08	1.41	8	0	6.3	5	8.3	N	29	N	8	10	6	12	5.8	52
ROANOKE	1174	974.6	1018.1	43	21	32.0	- 7.2	63	6	2	22	0	26	17	56	1.97	-0.89	0.60	8	0	12.2	4	9.9	WNW	30*	WSW	14	8	8	12	6.0	
WASHINGTON																																
OLYMPIA	190	1010.8	1018.7	56	37	46.2	5.3	69	8	24	12	0	6	41	86	6.42	-0.20	2.46	16	0	T	1	6.2	SW	35*	SSW	4	2	4	22	8.5	
SEATTLE TACOMA	400	1004.1	1018.2	55	41	48.2	7.4	68	8	32	1	0	1	40	76	4.36	0.12	1.62	15	0	0.5	1	8.4	SE	32*	SW	4	3	5	20	8.1	
SEATTLE U	14			56	45	50.3	6.7	69	12+	34	1	0	0			3.97	-0.07	1.78	13		T	T			56	SW	4					43
SPOKANE	2356	950.2	1020.2	45	30	37.4	7.4	55	10	1	1	0	17	31	81	2.21	0.35	1.11	13	0	2.7	8	8.1	NE	34	SW	26	4	5	19	7.6	39
STAMPEDE PASS R	3958	880.5		41	31	36.1	9.5	48	24+	20	2+	0	18			9.06	-1.09	3.66	17	0	27.5	54						3	1	24	8.6	
TATOOSH ISLAND	101	1013.5	1016.7	53	43	48.1	5.0	63	9	34	1	0	0	43	83	8.97	0.27	2.35	17	0	0.0	0	21.4	ENE	61	S	4	4	1	23	8.4	29
WALLA WALLA U	949	983.4		48	35	41.5	3.1	71	4	19	1	0	11			1.60	0.08	0.36	12	1	T	4	4.1	E#	32	W	26	1	3	24	9.0	22
YAKIMA	1061	981.0	1021.0	48	28	37.8	3.8	62	28	- 2	1	0	22	31	82	0.52	-0.35	0.38	8	0	0.6	14	5.2	W	32*	W	26	5	3	20	7.6	
WEST INDIES																																
SAN JUAN P.R.	15	1014.2	1017.3	84	69	76.2	1.8	87	22	66	25+	0	0	68	78	1.39	-1.51	0.25	14	0	0.0	0	7.9	ENE	25	E	23	4	19	5	5.3	57
SWAN ISLAND	28	1012.9		83	74	78.0	- 0.4	85	19	70	9	0	0			2.18	0.53	1.06	8	0	0.0	0						5	14	9	5.8	
WEST VIRGINIA																																
CHARLESTON	939		1018.8	39	19	29.0	- 8.5	62	6	- 4	16	0	26	20	72	2.70	-0.83	0.93	13	0	19.0	4	6.6	SW	21*	NW	24+	7	7	14	6.8	
ELKINS	1970	946.2	1017.9	36	11	23.6		59	6	-21	27	0	27	15	72	2.72		0.68	17	0	22.4	8	7.9	NW	29*	SSW	20	5	6	17	7.0	
HUNTINGTON U	827	987.8	1019.2	38	18	28.1		63	6	- 4	22	0	28	17	65	1.61	-1.49	0.51	13	0	7.9	3	6.6	S	29	SW	20	6	7	15	7.0	
PARKERSBURG U	615			37	17	26.6	- 8.9	60	6	- 3	22	0	27			1.51	-1.32	0.38	12	0	8.3	5	7.4		28	NW	20					47
WISCONSIN																																
GREEN BAY	682	994.3	1018.2	21	1	11.1	- 6.5	39	6	-15	26	0	28	4	73	0.59	-0.49	0.31	9	0	6.2	7	9.0	SW	36	NW	2	6	6	16	6.6	43
LA CROSSE	652	993.2	1019.5	25	5	14.8	- 4.6	40	17+	-15	21	0	28	7	69	0.49	-0.56	0.22	6	0	5.3	8	10.9	S	37*	NNW	20	9	8	11	6.0	
MADISON	858	981.2	1018.7	24	4	14.1	- 5.9	40	6	-14	3	0	28	6	69	0.39	-0.74	0.28	3	0	4.1	7	9.1	S	32	W	20	9	5	14	6.0	52
MILWAUKEE	672	992.2	1018.6	24	7	15.9	- 6.5	42	6	-12	21	0	28	6	65	0.42	-0.98	0.12	9	0	6.4	4	11.7	W	34	NW	2	8	7	13	6.3	53
WYOMING																																
CASPER	5319	836.9	1018.8	45	20	32.4	6.1	63	6	- 5	11	0	26	20	63	0.49	-0.10	0.20	9	0	5.6	2	13.4	WSW	48*	SW	1	2	9	17	7.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
CHEYENNE	6126	812.1	1018.4	45	22	33.0	5.2	63	6	- 5	11	0	23	18	57	0.17	-0.39	0.08	6	0	3.1	2	16.1	WNW	57	W	1	6	12	10	6.1	71
LANDER	5563	835.1	1018.5	47	22	34.2	10.1	61	5	- 6	11	0	25	19	58	0.31	-0.38	0.13	3	0	4.2	3	6.2	W	45	SW	1	8	8	12	5.9	76
SHERIDAN	3942	884.9	1019.6	45	21	33.0	9.2	60	5	- 8	11	0	25	22	67	0.83	0.09	0.34	9	0	13.1	9	9.3	NW	59	NW	1	1	11	16	7.6	48

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic wind recording instrument.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max 32.2 °C or above	Temperature: No. of days Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .25 mm. or more	Precipitation: No. of days With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers) Speed	Wind: Fastest mile (1.6 kilometers) Direction	Wind: Fastest mile (1.6 kilometers) Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	993.2	1019.5	12.2	- 2.2	4.9	-3.8	20.6	6+	-12.8	22	0	22	- 2.2	66	43	- 52	39	7	0	13	T	5.1	N	16.1	N	2	8	7	13	5.9	56
HUNTSVILLE	184	995.6	1019.7	10.6	- 3.9	3.3	-3.9	18.9	25+	-15.0	22	0	22	- 4.4	62	48	- 85	26	6	0	T	T	5.5	N	20.1*	ESE	19	9	6	13	5.9	
MOBILE	64	1016.4	1018.8	15.6	2.2	8.8	-3.8	23.9	2	- 3.9	27+	0	11	0.0	60	134	- 12	36	5	1	T	T	4.4	N	13.0*	NNW	18+	11	7	10	5.2	
MONTGOMERY	59	1010.5	1019.1	13.3	- 0.6	6.4	-3.7	23.9	2	- 8.3	22	0	16	- 1.7	59	84	- 27	27	5	2	T	T	5.0	N	14.3	N	2	11	6	11	5.5	58
ALASKA												B																				
ANCHORAGE	27	998.3	1003.3	- 1.1	- 8.3	- 4.7	3.1	6.7	25	-20.0	5	0	28	- 8.9	70	34	16	16	9	0	503	356	3.3	N	19.7*	N	1	8	5	15	6.5	44
ANNETTE	34	1004.7	1008.7	9.4	5.0	7.1	5.4	17.2	7	- 2.2	5	0	4	3.9	82	420	203	72	24	0	33	25	4.8	ESE	13.9*	SSE	6	3	1	24	8.9	
BARROW	7	1021.3	1021.8	-22.8	-31.1	-27.1	0.8	-11.1	28+	-42.2	6	0	28	-32.2	60	7	3	4	8	0	86	203	4.2	ENE	15.6*	WSW	2	10	6	12	5.3	
BARTER ISLAND	12	1018.6	1020.4	-21.7	-28.9	-25.3	3.4	-12.8	26	-37.2	7+	0	28	-28.9	68	6	- 3	2	8	0	56	533	4.7	E	17.9*	E	25	7	4	17	6.4	
BETHEL	38	1005.8	1007.1	- 8.3	-15.0	-11.7	1.6	4.4	24	-26.7	7	0	28	-14.4	78	2	- 26	2	3	0	43	25	6.3	NNE	13.9*	NNE	8	10	4	14	5.7	
COLD BAY	29	997.0	1000.6	0.0	- 3.3	- 1.6	0.6	5.0	19+	-10.6	8+	0	22	- 3.9	86	11	- 70	5	10	0	41	25	6.7	N	16.5*	E	16+	2	4	22	8.8	
CORDOVA	12	1001.0	1002.7	5.6	- 1.7	1.9	5.1	11.1	24	-13.3	4	0	15	- 1.1	82	215	97	62	21	0	257	203	3.2	ESE	13.0*	ESE	7	2	4	22	8.6	
FAIRBANKS	133	994.2	1012.4	-12.8	-23.3	-17.9	1.4	3.9	24	-43.3	5	0	28	-21.7	74	7	- 6	2	7	0	127	432	1.7	NNE	8.9*	NE	1	8	8	12	6.1	
JUNEAU	5	1007.8	1008.5	3.3	- 2.2	0.6	3.5	9.4	7	-15.6	3	0	14	- 1.7	86	153	75	23	24	0	399	432	3.2	E	12.5*	ESE	22	3	0	25	9.1	15
KING SALMON	13	1000.3	1001.9	- 2.8	-12.2	- 7.7	0.4	7.8	22	-26.1	7	0	27	-11.7	74	13	- 11	8	7	0	48	25	5.5	N	19.2*	E	17	12	4	12	5.4	
KOTZEBUE	3	1014.9	1015.5	-13.9	-21.7	-17.7	2.3	- 1.1	26	-33.9	7	0	28	-21.1	74	6	- 1	3	7	0	163	203	4.0	ENE	13.0*	ESE	25	12	3	13	5.5	
MC GRATH	102	997.3	1010.8	-11.1	-22.8	-17.2	0.6	0.6	25	-43.9	6	0	28	-21.1	69	3	- 26	1	5	0	81	432	1.6	N	7.6	NNE	22	7	7	14	6.4	
NOME	4	1012.2	1012.9	- 7.2	-16.1	-11.6	3.1	2.8	24	-25.0	7	0	28	-16.1	69	7	- 17	2	7	0	76	51	4.4	N	13.0*	NNE	17+	14	3	11	4.8	42
ST. PAUL ISLAND	7	1005.8	1006.6	- 3.9	- 8.3	- 6.0	-1.2	2.2	20+	-16.7	28	0	27	- 7.8	84	9	- 22	4	10	0	71	51	8.6	N	20.6*	N	24	4	3	21	8.0	
SHEMYA	37	1000.9	1004.3	2.2	- 1.1	0.7	1.4	3.9	13	- 6.1	26	0	17	- 1.7	84	20	- 38	3	22	0	147	76	9.2	E	22.8*	E	28	0	1	27	9.4	
YAKUTAT	9	1003.7	1004.9	4.4	- 0.6	2.1	3.9	12.2	7	-10.6	5	0	12	- 0.6	85	439	230	81	20	0	T	T	3.8	E	20.6*	SSE	22	1	1	26	9.1	
ARIZONA																																
FLAGSTAFF	2131	977.5	1019.9	11.1	- 6.1	2.6	3.4	19.4	5	-18.3	13	0	27	- 6.1	60	33	- 13	18	5	0	277	127	3.0	NNE	13.4*	NNE	28	10	7	11	5.6	
PHOENIX	340	976.5	1016.1	23.9	7.2	15.7	3.2	31.7	7	3.3	13	0	0	0.0	40	29	8	22	2	1	0	0	2.6	ESE	7.6*	N	27+	12	7	9	4.6	90
PRESCOTT	1528	848.2	1018.6	16.7	- 0.6	8.2	3.9	25.0	6	- 1.2	13	0	16	- 3.9	51	21	- 7	16	3	0	T	T	3.8	SW	13.9	N	27	13	6	9	4.6	86
TUCSON	788	927.0	1015.7	21.7	6.7	14.2	2.8	30.0	6	0.6	14	0	0	- 1.1	42	21	- 1	17	2	0	0	0	4.3	SSE	14.3	SE	3	15	7	6	3.6	90
WINSLOW	1487	853.6	1020.8	14.4	- 2.2	5.9	2.6	22.2	26	- 9.4	13	0	22	- 3.3	59	19	7	17	4	0	38	T	3.5	SW	13.9*	WSW	26	10	8	10	5.6	
YUMA	61	1010.5	1015.9	28.3	11.1	19.7	4.1	33.3	26+	6.1	13	7	0	0.0	33	3	- 6	3	1	0	0	0	2.9	N	14.8	N	27	17	8	3	3.6	94
ARKANSAS																																
FORT SMITH	137	1002.4	1020.6	11.1	- 3.3	3.8	-2.7	22.8	27	-12.2	22	0	21	- 4.4	61	27	- 60	19	5	0	T	T	3.6	ENE	14.8	SW	27	8	6	14	6.3	55
LITTLE ROCK	78	1006.8	1020.6	11.1	- 2.8	4.1	-2.8	26.1	6	-12.2	22	0	24	- 4.4	60	69	- 41	29	8	1	10	T	4.0	NNE	17.0	S	27	12	5	11	5.5	60
TEXARKANA	110		1020.1	13.9	0.0	6.9	-2.2	24.4	6	- 7.2	22+	0	16	- 1.1	63	58	- 44	46	8	2	13	T		NE								76
CALIFORNIA																																
BAKERSFIELD	151	1002.6	1020.6	20.0	8.9	14.7	3.6	26.1	7+	5.0	23	0	0	10.0	77	39	10	27	5	1	0	0	2.8	NW	12.5*	NW	13	7	7	14	6.6	
BISHOP	1252	876.9		17.8	0.6	9.2	4.4	23.9	25	- 3.3	17+	0	14			16	- 9	15	3	0	0	0						8	6	14	6.0	
BLUE CANYON	1609	841.8		11.1	3.9	7.6	5.0	17.8	7	- 1.1	14	0	2			134	-125	61	9	0	15	T	3.5	ENE	23.7	WSW	1	2	6	20	7.9	
BURBANK	213	991.7	1017.9	22.2	10.0	16.2	3.3	30.6	3	7.2	19	0	0	7.2	64	106	24	90	5	1	0	0	2.7	ESE	13.0*	SSE	9	11	5	12	5.6	
EUREKA U	13	1017.5		16.1	9.4	12.9	3.9	22.8	5	5.0	27	0	0			120	- 20	29	18	2	0	0	3.2	S#	14.3	S	4	0	8	20	8.5	42
FRESNO	99	1007.3	1019.4	18.9	7.8	13.6	3.7	23.3	7+	3.3	24	0	0	10.0	84	51	- 5	29	4	1	0	0	2.6	NW	10.3	NW	13	5	8	15	7.2	62
LONG BEACH	10	1016.8	1018.4	21.1	10.6	15.9	3.7	32.2	3	7.2	23	1	0	10.6	78	114	55	91	6	1	0	0	2.5	WNW	10.7*	W	4	7	10	11	6.1	
LOS ANGELES	30	1014.6	1018.6	20.6	12.2	16.2	3.8	33.3	3	9.4	28+	1	0	10.6	75	114	41	93	6	1	0	0	3.0	W	9.4*	W	11	9	7	12	6.0	
LOS ANGELES U	95			21.7	12.8	17.1	3.1	31.1	3	9.4	19	0	0			73	- 11	63	5	1	0	0	2.5	SE#	12.5	SE	9	8	12	8	5.0	71
MT SHASTA R	1080	895.4		12.2	1.7	6.8	4.1	18.9	25	- 2.8	15	0	9			95	- 55	22	12		T	T						4	5	19	7.6	
OAKLAND	1	1019.5	1020.0	17.8	10.0	13.9	3.6	22.2	22	5.6	28+	0	0	10.0	80	67	- 14	32	7	0	0	0	3.2	WNW	9.4*	SE	12+	2	10	16	7.4	
POINT ARGUELLO	112	1004.7		18.3	8.9	13.7	3.1	27.2	3	4.4	28+	0	0			91	35	58	8	0	0	0	3.8		12.5*	SE	9	9	7	12	6.1	
RED BLUFF	104	1006.8	1019.7	18.3	8.3	13.2	3.4	23.9	23	4.4	17+	0	0	7.8	76	58	- 26	23	11	0	0	0	3.5	SSE	15.2	SE	1	5	5	18	7.4	64
SACRAMENTO	5	1019.0	1020.0	18.3	8.3	13.3	3.2	22.8	6	3.9	28+	0	0	10.6	86	53	- 23	33	8	0	0	0	1.9	SE	11.6	NW	22+	3	8	17	7.6	56
SACRAMENTO U	7			18.9	9.4	14.2	3.7	22.8	6	6.1	28+	0	0			44	- 44	26	7		0	0										
SANDBERG R	1377	865.2		14.4	6.7	10.4	5.2	21.7	7	1.7	17	0	0			57	- 8	47	5	0	0	0	6.0	N	20.1*	N	26+	10	7	11	5.4	
SAN DIEGO	4	1014.6	1017.8	21.1	11.7	16.2	2.5	29.4	3	8.3	23	0	0	9.4	71	31	- 24	24	5	0	0	0	3.0	NW	13.4	S	9	9	8	11	5.3	68
SAN FRANCISCO	2	1019.7	1020.5	17.2	9.4	13.3	2.8	21.1	23	5.0	24	0	0	10.0	83	52	- 37	22	7	0	0	0	3.7	W	16.5	W	26	4	7	17	7.5	
SAN FRANCISCO U	16			17.8	11.7	14.7	3.0	22.2	7	8.3	24	0	0			49	- 44	21	7	0	0	0										62
SANTA MARIA	73	1010.5	1019.4	21.1	8.3	14.6	3.6	28.9	3	2.8	24	0	0	9.4	78	84	20	46	6	0	0	0	2.9	WNW	13.0*	NW	26	9	7	12	5.4	
COLORADO																																
ALAMOSA	2297	770.0		4.4	-16.1	- 5.6	-0.9	16.1	6	-34.4	13	0	28			36	32	29	6	0	406	305						10	8	10	5.3	
COLORADO SPRINGS	1882	811.3	1019.5	11.1	- 3.9	3.7	4.3	24.4	5	-16.1	12	0	23	- 9.4	43	5	- 3	3	4	0	53	25	4.3	NNE	17.9*	W	1	9	10	9	5.6	
DENVER	1610	837.7	1017.8	11.1	- 5.0	2.9	2.7	24.4	5	-17.8	12	0	23	- 8.3	48	5	- 12	3	4	0	53	25	5.0	S	19.2	W	1	5	14	9	6.1	72
GRAND JUNCTION	1478	861.9	1020.8	9.4	- 2.2	3.7	3.3	16.1	6	- 8.9	13	0	22	- 6.1	55	12	- 6	7	4	0	5	102	1.9	ESE	13.4	NE	10	8	9	11	5.9	73

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
PUEBLO	1414	856.8	1018.6	12.8	- 5.0	3.7	2.7	25.0	5	-19.4	12	0	24	- 7.2	53	7	- 5	4	5	0	46	25	3.7	WNW	25.0	NW	1	11	5	12	5.4	79
CONNECTICUT																																
BRIDGEPORT	2	1015.9	1017.1	0.6	- 8.3	- 3.8	-3.0	6.1	6	-20.6	8	0	28	-10.0	64	55	- 20	20	8	0	173	102	6.5	W	16.1*	NNW	15	7	10	11	5.9	
HARTFORD	52	1009.3	1015.7	- 0.6	-11.1	- 5.8	-3.4	7.8	18	-21.7	8	0	28	-11.7	65	85	10	37	10	0	368	305	4.1	NW	14.3	NW	15	7	8	13	6.0	60
NEW HAVEN	2	1016.3		0.6	- 8.3	- 3.8	-2.4	6.1	18+	-20.0	8	0	28			80	- 2	32	7		216	102	4.2		14.3	NW	16	8	10	10	5.8	67
DELAWARE																																
WILMINGTON	24			2.2	- 7.2	- 2.5	-3.5	11.7	6	-14.4	8	0	27			53	- 22	21	8	0	117	76	5.1	WNW	15.6*	NW	21	10	6	12	5.7	
DIST.OF COLUMBIA																																
WASHINGTON U	22			5.0	- 3.9	0.6	-2.3	15.0	6	-12.8	22	0	25			50	- 17	21	6													
WASH NATL AP	4	1013.5	1018.1	3.9	- 5.0	- 0.6	-3.8	12.8	20	-12.8	22	0	26	-10.0	52	49	- 13	20	6	0	51	51	4.0	S	16.5	NW	3	9	5	14	5.9	54
FLORIDA																																
APALACHICOLA U	4	1015.9		15.0	6.1	10.3	-3.4	20.6	7+	- 1.1	27	0	3			125	25	65	8	3	0	0	3.7	E	15.6	N	3	6	8	14	6.3	62
DAYTONA BEACH	9	1015.9	1017.8	17.8	7.8	12.6	-3.3	27.8	2	1.1	27+	0	0	7.8	75	148	78	50	10	4	0	0	4.6	NNW	16.1*	N	4	5	8	15	6.4	
FORT MYERS	4	1016.9		22.2	11.1	16.9	-1.6	27.2	11	6.1	28	0	0			118	62	41	11	2	0	0	3.8		10.7*	WNW	26	8	10	10	5.3	
JACKSONVILLE	7	1016.8	1018.4	16.7	5.0	10.8	-3.3	27.2	11	- 1.7	27	0	4	5.6	73	176	102	88	9	2	0	0	4.8	NW	23.2	NE	3	6	9	13	6.2	61
KEY WEST	2	1016.1	1017.4	23.3	17.8	20.5	-0.8	27.2	26+	14.4	27	0	0	15.6	74	45	- 5	30	9	3	0	0	5.7	ENE	14.3	NE	16	10	11	7	5.2	78
LAKELAND U	65			19.4	8.9	14.1	-3.2	27.2	2+	2.2	27+	0	0			167	104	71	10	3	0	0	3.8					9	6	13	5.9	52
MIAMI BEACH	3			23.9	16.1	19.7	-1.2	27.8	19	7.8	27	0	0			83	41	27	8	0	0	0	6.1		16.5	SW	26	9	10	9	5.5	54
MIAMI	2	1016.0	1017.4	23.3	14.4	18.8	-1.2	29.4	19	8.3	27	0	0	13.9	76	88	40	39	7	3	0	0	4.4	N	14.3*	WSW	26	8	9	11	5.9	
ORLANDO	32	1012.9	1017.7	19.4	8.3	14.0	-2.3	29.4	2	1.7	27+	0	0	8.9	76	121	59	40	9	4	0	0	4.6	NNE	20.6*	WSW	19	8	8	12	5.9	
PENSACOLA U	4			14.4	3.9	9.2	-4.1	22.2	6	- 2.8	27	0	5			140	32	57	10	2	0	0	4.7	N	15.6	SE	18					60
TALLAHASSEE	18	1015.8	1018.7	16.7	2.8	9.6	-3.5	24.4	2	- 5.0	23	0	9	3.3	68	148	41	44	10	2	0	0	4.9	N	17.4*	W	19	5	9	14	6.5	
TAMPA	6	1016.4	1018.2	18.9	8.9	13.8	-3.3	26.1	11	2.8	27	0	0	9.4	77	202	130	83	10	2	0	0	5.9	N	16.5*	SW	19	8	6	14	6.1	59
WEST PALM BEACH	5	1016.4	1017.6	23.3	12.2	17.7	-2.1	29.4	19	7.2	27+	0	0	12.8	76	76	17	29	8	3	0	0	4.8	WSW	15.6*	WNW	26	7	8	13	6.1	
GEORGIA																																
ATHENS	245	986.1	1018.7	11.1	- 2.2	4.4	-3.4	20.0	7	-11.7	22	0	21	- 3.3	61	96	- 24	32	7	1	0	0	4.5	WNW	13.0*	W	14	9	8	11	5.5	
ATLANTA	306	975.1	1018.4	10.0	- 2.2	3.8	-4.2	20.0	6	-13.3	22	0	18	- 5.6	55	82	- 32	31	9	1	T	T	4.6	WNW	13.4*	NW	26	10	8	10	5.4	64
AUGUSTA	44	1011.2	1018.1	13.3	- 0.6	6.4	-3.2	22.8	7	- 6.7	18	0	17	- 1.1	63	88	- 1	24	10	1	T	T	3.8	ENE	11.2*	NW	21+	7	8	13	6.1	
COLUMBUS	117	1003.9		13.9	- 0.6	6.6	-3.2	24.4	2	- 9.4	22	0	17			83	- 35	43	7	2	0	0	4.6		13.0*	NW	26	12	6	10	5.4	
MACON	109	1004.4	1018.4	13.9	0.6	7.1	-3.6	22.2	7	- 8.3	22	0	15	- 2.2	58	92	- 16	40	7	1	0	0	4.4	NW	13.9	W	14	7	10	11	5.6	64
ROME	194	995.3		10.6	- 5.0	2.7	-4.2	21.7	6	-14.4	22	0	26			73	- 62	35	7		T	T						9	11	8	5.2	
SAVANNAH	15	1015.6	1018.4	14.4	2.2	8.4	-3.3	23.3	19+	- 4.4	23	0	10	1.7	67	129	35	46	9	2	0	0	5.1	NE	15.2	W	19	7	6	15	6.7	56
THOMASVILLE U	86			16.1	3.3	9.7	-3.2	24.4	2	- 4.4	27	0	8			102	1	20	12	2	0	0						10	6	12	5.9	
HAWAII																																
HILO	9	1013.2	1015.1	27.8	17.8	22.7	1.3	30.6	22+	15.0	14	0	0	17.2	74	43	-285	20	9	0	0	0	4.3	SW	20.6	ENE	1	13	7	8	4.7	60
HONOLULU	2	1015.0	1015.3	26.7	18.3	22.3	-0.1	28.9	10	14.4	11	0	0	17.2	75	28	- 56	19	6	1	0	0	3.8	NE	11.6	W	1	11	13	4	4.5	71
KAHULUI	13	1012.2	1015.2	27.8	18.3	22.8		29.4	28+	14.4	15	0	0	18.3	76	35		11	8		0	0	6.6	S	14.3*	NNE	17+	14	10	4	4.1	76
LIHUE	35	1009.9	1015.6	27.2	17.2	22.0	0.5	28.9	22+	12.8	12	0	0	16.7	73	36	- 99	18	9		0	0	4.4	W	13.9	SW		11	12	5	4.5	72
IDAHO																																
BOISE	865	923.5	1021.4	11.7	1.1	6.3	5.2	17.8	6	- 3.9	12	0	11	0.0	70	43	9	15	8	1	T	T	3.4	SE	13.9	NW	26	6	5	17	6.9	57
IDAHO FALLS 42NW R	1460			7.8	- 7.2	0.2	7.4	15.0	5	-17.8	13	0	27			15	3	10	3	0			2.1	NE	16.1A	S	1					
IDAHO FALLS 46W R	1504	850.3		7.8	- 5.6	1.2	7.7	13.9	6+	-15.6	13+	0	27			21	2	11	5	0	51	51	3.3	SW	15.6A	SSW	1					
LEWISTON	431	967.8		9.4	0.0	4.8	2.7	15.0	26	- 6.7	2+	0	14			23	- 2	4	12	1	33	127						1	7	20	8.2	
POCATELLO	1355	866.6	1022.2	8.9	- 1.7	3.7	6.3	16.7	4	-10.6	12	0	20	- 2.8	67	25	2	7	8	1	18	T	4.6	WSW	25.5	W	1	6	5	17	7.0	51
ILLINOIS																																
CAIRO U	96	1006.1		6.1	- 5.0	0.4	-4.4	17.2	6	-13.9	22	0	25			37	- 57	13	6	0	61	25	4.1	NW	16.1	N	20	7	7	14	6.2	68
CHICAGO O HARE	201	992.2	1018.6	- 2.8	-14.4	- 8.4		8.9	18	-22.8	15+	0	28	-13.3	64	9		3	8	0	213	152	4.9	SSW	11.6*	N	7	6	11	11	6.0	
CHICAGO MIDWAY	186	995.1	1019.3	- 2.2	-12.2	- 7.1	-4.8	10.0	18	-21.7	22	0	28	-12.8	65	14	- 27	5	9	0	284	203	5.4	NW	12.5	NW	2	7	8	13	6.1	48
MOLINE	177	996.3	1019.7	- 2.2	-13.3	- 7.8	-4.6	9.4	18	-26.7	3	0	27	-12.8	65	9	- 25	2	7	0	147	152	4.8	NW	13.4	NW	20	9	8	11	6.3	55
PEORIA	199	996.8	1020.3	- 1.7	-12.8	- 7.4	-5.4	11.7	18	-25.0	26	0	28	-11.7	71	12	- 31	7	6	0	157	127	4.8	S	13.9	NW	2	4	12	12	6.8	56
ROCKFORD	222	990.3	1019.1	- 3.3	-14.4	- 8.7	-4.5	7.2	18	-23.3	21+	0	28	-12.2	73	10	- 27	3	7	0	213	152	4.5	S	12.1*	WNW	19	9	9	10	6.1	
SPRINGFIELD	179	995.6	1019.9	0.6	-11.7	- 5.6	-5.1	12.2	18	-30.0	26	0	27	-11.1	64	23	- 24	15	6	0	302	229	5.5	NW	13.4	NW	20+	5	6	17	7.1	52
INDIANA																																
EVANSVILLE	116	1003.5	1020.2	4.4	- 8.3	- 1.8	-4.4	17.8	6	-21.1	22	0	27	- 8.3	62	16	- 65	8	6	0	20	51	3.5	NW	14.3	N	20	5	11	12	6.5	57

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	°C.	C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
FORT WAYNE	241	985.9	1018.8	- 1.7	-13.3	- 7.4	-5.1	10.6	19	-27.8	27	0	28	-11.1	72	28	- 29	13	9	0	315	229	4.6	WNW	13.4	NW	14	6	7	15	6.7	45
INDIANAPOLIS	242	987.8	1019.3	0.0	-11.7	- 6.1	-5.6	11.7	6	-22.8	22	0	28	-10.6	70	15	- 43	3	8	0	173	127	3.8	NW	15.2*	WSW	20	5	5	18	7.4	68
SOUTH BEND	234	988.7	1018.2	- 2.8	-12.8	- 7.8	-4.9	6.7	19+	-23.9	22	0	28	-11.1	75	28	- 20	6	17	0	551	406	4.9	SW	13.0*	NNW	2	5	8	15	7.0	
IOWA																																
BURLINGTON	212	993.2	1020.0	- 0.6	-11.1	- 5.8	-3.5	12.2	18	-22.2	3	0	26	-10.6	70	10	- 26	4	9	0	155	152	5.1	NW	17.9	NW	2	3	9	16	7.0	59
DES MOINES	289	987.5	1020.2	- 2.2	-12.2	- 7.3	-3.3	8.3	18	-25.6	26	0	28	-10.0	79	18	- 10	7	12	0	165	203	4.2	NNW	15.2	N	20	8	4	16	6.5	50
DUBUQUE	325	992.5		- 3.3	-13.9	- 8.8	-3.3	7.2	6	-25.0	21	0	28			11	- 24	2	6	0	157	229			12.5*	NNW	4+	8	7	13	6.0	
SIOUX CITY	334	976.6	1019.9	0.6	-11.1	- 5.2	0.0	13.3	5	-23.9	26	0	28	- 9.4	75	14	- 9	5	12	0	142	178	4.7	NNW	16.1	N	1	6	9	13	6.5	56
WATERLOO	265	986.0	1019.9	- 3.3	-15.0	- 9.3	-3.7	7.2	5	-27.8	15	0	28	-12.8	75	14	- 9	5	11	0	160	76	4.4	NW	15.6*	NNW	2	7	5	16	6.5	
KANSAS																																
CONCORDIA	448	967.7	1019.4	8.3	- 6.1	0.9	0.8	21.7	5	-15.0	21	0	26	- 6.7	63	1	- 22	1	1	0	8	25	5.6	NNW	16.1	NW	20	7	11	10	5.8	67
DODGE CITY	791	928.8	1019.1	12.2	- 4.4	3.9	2.2	30.0	1	-13.3	11	0	25	- 5.6	57	3	- 15	3	1	0	8	T	5.4	NNW	18.8*	NE	20	9	10	9	5.5	75
GOODLAND	1111	888.6	1018.7	11.1	- 5.0	2.9	3.5	23.3	5	-15.0	11	0	25	- 5.0	64	2	- 11	2	3	0	5	T	5.5	WSW	17.9	NNW	1	7	8	13	6.2	
TOPEKA	267	983.2	1020.2	7.2	- 6.7	0.3	-0.3	20.0	5	-13.9	21	0	27	- 6.7	64	4	- 23	4	1	0	56	51	5.6	N	18.8	N	2	6	8	14	7.7	60
WICHITA	403	968.8	1019.6	10.0	- 4.4	2.7	0.3	20.6	5	-12.2	11	0	26	- 6.1	59	1	- 23	1	1	0	5	T	6.0	S	19.7	NE	20	5	12	11	6.1	65
KENTUCKY																																
COVINGTON	265	985.4	1018.7	1.7	-10.0	- 4.2	-5.4	13.9	6	-23.3	22	0	28	- 8.9	70	28	- 46	11	9	0	163	127	3.5	SSW	12.1*	WSW	20	4	8	16	7.5	
LEXINGTON	298	982.2	1019.4	3.3	- 7.2	- 1.9	-4.0	15.6	6	-21.7	22	0	26	- 7.2	70	46	- 41	14	13	0	208	76	4.2	S	12.1*	W	20	7	9	12	6.4	
LOUISVILLE	144	1001.0	1019.5	5.0	- 7.2	- 1.0	-3.1	17.2	6	-18.9	22	0	24	- 7.8	64	28	- 55	10	4	0	86	25	3.8	SSE	13.9	NW	20	4	11	13	6.5	49
LOUISIANA																																
ALEXANDRIA	28	1015.7	1020.7	15.0	0.6	7.6		24.4	6+	- 6.1	14	0	17	1.1	69	76		38	8	2	T	T	3.3	NNE				12	3	13	5.3	
BATON ROUGE	20	1016.3	1019.7	16.7	2.2	9.4	-3.3	27.2	2	- 3.9	4	0	13	1.1	63	98	- 14	34	5	2	T	T	4.4	N				12	6	10	5.0	
LAKE CHARLES	4	1018.3	1019.8	15.6	3.9	9.7	-3.6	22.8	10+	- 3.9	12	0	9	3.9	74	105	- 10	83	4	1	T	T	4.8	ENE	14.3*	N	3+	12	6	10	5.3	
NEW ORLEANS	1	1017.3	1019.5	15.6	2.8	9.0	-4.4	26.1	2+	- 2.2	22+	0	9	3.3	72	150	49	54	7	2	T	T	4.2	NNE	13.0*	NNE	11	11	6	11	5.1	
NEW ORLEANS AUDUBON	2	1012.2		15.6	5.0	10.2		25.0	1	- 1.1	22	0	1			140		65	6	3	T	T	2.8		11.6	NE	11	12	5	11	5.0	60
SHREVEPORT	77	1010.8	1020.5	15.0	1.1	8.0	-2.2	25.6	6+	- 5.6	22+	0	13	- 0.6	61	61	- 42	23	7	1	51	25	4.8	S				11	6	11	5.5	63
MAINE																																
CARIBOU	190	985.9	1010.6	- 8.3	-20.6	-14.4	-3.6	- 0.6	18	-31.7	4	0	28	-17.8	74	58	7	21	13	0	777	965	5.5	WSW	16.5*	WSW	21	8	6	14	6.2	
PORTLAND	19	1009.3	1013.5	- 1.1	-15.0	- 8.1	-3.0	6.7	19	-24.4	17	0	28	-13.3	66	75	- 22	26	8	0	574	508	4.3	WSW	17.0	N	20	8	10	10	5.7	58
MARYLAND																																
BALTIMORE	45	1013.3	1018.4	2.8	- 7.8	- 2.3	-4.4	12.2	18	-15.0	23	0	28	-10.0	59	53	- 21	22	7	0	53	25	4.2	WNW	14.8	NW	21	12	4	12	5.5	50
BALTIMORE U	4			3.3	- 5.6	- 0.9	-4.1	12.8	6	-12.8	22	0	24			52	- 24	22	7	0												
FREDERICK	90			1.7	- 8.3	- 3.3	-4.3	10.0	18	-17.8	17	0	27			42	- 23	15	6	0	234	127										
MASSACHUSETTS																																
BLUE HILL OBS R	192	988.8	1013.2	0.0	-10.0	- 5.2	-2.7	7.8	18	-21.7	8	0	28			82	- 13	32	8		213	152	7.3	WNW	20.1	NW	16					58
BOSTON	5	1009.2	1014.3	1.1	- 8.3	- 3.4	-2.4	9.4	18	-19.4	8	0	28	-11.1	58	66	- 18	26	8	0	117	76	7.2	W	16.5	NW	16	10	7	11	5.3	64
NANTUCKET	13	1014.1	1014.9	1.7	- 5.6	- 1.9	-1.6	10.6	12	-15.0	8	0	27	- 7.8	69	113	18	52	12	0	53	51	6.8	WNW	18.3	E	19	6	8	14	6.4	51
PITTSFIELD	357			- 1.7	-15.0	- 8.2	-2.8	8.9	6	-27.8	8	0	28			52	- 12	15	12		826	584										
WORCESTER	301	975.6	1013.9	- 1.7	-12.2	- 6.7	-2.8	7.2	6	-23.3	8	0	28	-12.2	65	77	3	29	10	0	564	457	4.6	W	12.5*	NNE	20	9	10	9	5.3	
MICHIGAN																																
ALPENA	210	989.7		- 5.6	-20.0	-12.9	-6.3	1.7	17	-31.7	16	0	28			17	- 24	5	12	0	290	406	3.0	W	13.4	SE	1	7	5	16	7.0	62
DETROIT	189	989.6	1017.9	- 3.3	-11.7	- 7.3	-4.7	7.2	19+	-18.3	26+	0	27	-11.7	68	18	- 35	5	12	0	193	102	5.0	W	15.6	NW	20	4	8	16	7.1	48
DETROIT M WAYNE CO	193	1002.4	1018.1	- 2.8	-12.8	- 8.0	-5.0	6.1	19+	-21.1	26	0	28	-12.8	66	17	- 33	5	12	0	211	152	4.0	SSW				6	9	13	6.6	
DETROIT WILLOW RUN	217	988.0	1017.9	- 3.3	-12.2	- 7.8	-5.3	6.7	19	-21.1	26	0	28	-11.1	74	15	- 35	6	9	0	188	127	5.4	SW	13.9*	NW	2	6	8	14	6.6	
ESCANABA U	181	993.5		- 6.7	-17.2	-11.9	-4.5	1.7	6	-25.6	26+	0	28			21	- 9	7	10	0	213	279	4.5		17.9	NW	2	7	10	11	6.4	60
FLINT	233	988.9	1018.3	- 4.4	-14.4	- 9.4	-4.8	8.3	19	-25.0	16	0	28	-12.8	74	7	- 38	3	9	0	216	152	4.5	SW	12.5*	SSE	1	4	7	17	7.1	
GRAND RAPIDS	210	991.6	1018.2	- 3.3	-13.3	- 8.4	-4.2	7.2	6	-22.8	26	0	28	-11.7	76	12	- 33	3	13	0	213	356	4.7	WSW	12.1	NW	20	5	7	16	7.3	32
LANSING	260	983.8	1017.6	- 3.9	-14.4	- 9.1	-4.7	6.1	18	-24.4	26	0	28	-13.3	66	10	- 40	3	11	0	127	279	6.1	SSW	18.8	NW	20	4	10	14	6.8	65
MARQUETTE U	206	988.5		- 6.7	-15.6	-11.3	-4.4	1.7	17	-24.4	3	0	28			23	- 19	5	14	0	310	508	3.8	W#	15.2	NW	2	2	7	19	8.0	51
MUSKEGON	191	993.6	1018.0	- 3.9	-12.8	- 8.4	-4.4	5.6	6	-24.4	26	0	28	-12.8	68	18	- 28	5	11	0	455	686	4.7	WNW	13.9*	NNW	2	3	6	19	7.9	
SAULT STE MARIE	220	992.2	1016.4	- 8.9	-20.0	-14.4	-5.1	- 1.1	2	-29.4	22	0	28	-17.8	75	44	6	22	16	0	640	813	3.8	WNW	15.6*	WNW	2	6	3	19	7.3	45
MINNESOTA																																
DULUTH	435	974.8	1018.6	- 8.3	-19.4	-13.8	-2.3	2.8	5	-32.8	21	0	28	-18.9	65	22	- 2	7	12	0	366	381	5.4	WNW	20.1	W	20	8	2	18	7.0	51
INTERNATIONAL FALLS	359	975.7	1019.7	-10.0	-23.3	-16.5	-2.7	5.6	5	-36.1	3	0	28	-21.1	66	26	8	7	15	0	282	330	3.9	NW	14.3*	WNW	1	7	4	17	6.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature								No. of days			Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
																			No. of days					Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
MINNEAPOLIS	251	984.2	1019.8	- 5.0	-16.7	-11.1	-2.1	6.1	5	-28.3	21	0	28	-15.6	68	10	- 9	3	10	0	137	102	5.0	NW	15.6	NW	20	6	7	15	7.0	52
ROCHESTER	395	968.8	1019.4	- 5.6	-15.6	-10.5	-2.3	4.4	5	-27.2	21	0	28	-13.9	77	10	- 10	5	7	0	145	178	6.3	NW				9	3	16	6.4	
ST CLOUD	315	979.2		- 5.6	-17.8	-11.7	-1.4	5.6	6+	-30.0	21	0	28			10	- 10	3	10	0	97	76						5	5	18	7.3	
MISSISSIPPI																																
JACKSON	93	1007.3	1019.9	13.3	- 0.6	6.4	-4.0	24.4	1	- 7.8	22	0	17	- 0.6	65	72	- 52	34	8	1	25	25	4.2	N	16.1	N	2	12	3	13	5.3	60
MERIDIAN	89	1005.7	1020.1	13.9	- 2.2	5.8	-4.5	23.9	2	- 9.4	22	0	21	- 1.1	66	61	- 68	25	6	2	25	25	4.1	S	15.6*	NNE	18	14	4	10	4.9	
VICKSBURG U	71	1010.1		12.8	1.1	6.8	-4.2	22.8	6+	- 7.8	22	0	13			70	- 65	33	9	1	76	51	4.3		15.2	E	18	10	7	11	5.4	67
MISSOURI																																
COLUMBIA	237	989.3	1019.1	4.4	- 7.2	- 1.6	-2.6	16.7	5	-17.8	26	0	25	- 7.8	64	5	- 41	2	3	0	51	51	5.2	NW	16.5	N	2	3	11	14	6.8	48
KANSAS CITY	226	983.5	1019.7	6.1	- 5.6	0.2	-1.4	19.4	5	-13.9	26+	0	23	- 7.8	58	10	- 21	10	3	0	84	76	3.3	S	18.8	NW	20	5	9	14	6.8	62
ST JOSEPH	247	980.9		5.0	- 7.2	- 1.2	-0.7	17.2	5	-16.1	26	0	28			1	- 27	1	1	0	5	51	5.6	NNW	14.3*	NNW	20	7	8	13	6.3	
ST LOUIS	163	998.6	1020.1	3.9	- 7.8	- 1.9	-3.7	16.7	20	-17.2	3	0	28	- 9.4	59	6	- 45	4	4	0	46	25	4.8	NW	14.3	N	20	5	7	16	6.9	49
ST LOUIS RFC	142			4.4	- 6.7	- 1.0	-3.4	16.7	5	-16.1	21	0	24			6	- 51	3	3		43	25										
SPRINGFIELD	386	1004.4	1019.7	8.3	- 5.6	1.3	-1.6	21.7	5	-15.0	22+	0	26	- 7.8	58	14	- 39	8	7	0	107	102	5.0	SSE	17.9	W	20	8	6	14	6.4	58
MONTANA																																
BILLINGS	1087	891.5	1018.4	8.9	- 3.3	2.7	6.2	18.3	5	-18.9	2	0	19	- 6.1	57	8	- 7	4	6	0	58	254	6.0	WSW	32.2	W	1	5	7	16	6.9	58
GLASGOW	694	941.9		0.0	-10.0	- 4.8	5.4	10.0	5	-28.9	2	0	27			12	- 2	4	10	0	99	102						4	3	21	8.1	
GREAT FALLS	1116	888.6	1019.4	8.9	- 3.9	2.7	6.9	17.8	6	-25.0	2	0	23	- 6.1	57	8	- 11	6	2	0	81	152	6.3	SW	18.3	SW	3	5	2	21	7.4	58
HAVRE	787	927.1		3.9	- 7.2	- 1.8	6.9	14.4	6+	-31.7	2	0	26			20	- 9	6	7	0	155	178	4.0	SW*	25.9	SW	5	3	6	19	7.9	40
HELENA	1187	874.4	1020.5	7.8	- 4.4	1.6	6.4	16.1	4	-21.1	2+	0	21	- 5.6	62	6	- 5	6	3	0	51	178	3.7	WNW	18.8	N	1	3	7	18	7.4	55
KALISPELL	904	913.8		5.0	- 5.0	- 0.2	5.3	11.1	7	-26.7	2	0	25			25	0	10	12	0	165	457	2.1					4	4	20	7.8	
MILES CITY	801			3.3	- 7.2	- 1.9	4.6	13.3	5	-26.1	21	0	45			17	7	7	10	0	152	127	3.8	W	20.6	W	1	3	5	20	8.0	
MISSOULA	972	904.5	1022.6	3.9	- 5.0	- 0.4	3.4	11.7	4	-13.9	13	0	25	- 3.9	81	20	- 2	5	10	0	89	457	2.2	NW	21.0	NW	4	4	5	19	7.6	40
NEBRASKA																																
GRAND ISLAND	561	950.7	1019.7	5.0	- 9.4	- 2.2	0.3	15.6	5	-20.0	21	0	28	- 7.8	71	5	- 13	2	4	0	38	76	5.0	NNW				6	8	14	6.7	
LINCOLN U	351			5.0	- 7.2	- 1.1	0.8	18.3	5	-18.3	21	0	27			7	- 21	5	5		56	51	4.7	NW*	15.6	NE	20	7	6	15	6.4	57
NORFOLK	471	961.1		3.3	- 9.4	- 3.1	2.0	14.4	5	-21.1	21	0	28			6	- 14	2	5	0	74	152						5	10	13	6.8	
NORTH PLATTE	847	916.1	1018.3	7.8	- 7.2	0.2	2.4	17.2	7	-20.0	21	0	28	- 5.0	72	4	- 9	3	3	0	23	76	4.7	N	15.6	NW	13	4	8	16	7.1	60
OMAHA	298	978.0	1019.7	2.8	- 8.3	- 2.7	0.3	13.3	4	-19.4	21	0	28	- 8.3	70	9	- 15	3	8	0	81	178	5.6	NNW	18.8	NW	2	8	5	15	6.4	56
OMAHA N OMAHA AP	403	969.2		1.7	- 8.9	- 3.7	0.6	12.8	5	-20.6	21	0	27			10	- 16	3	10	0	79	203						6	7	15	6.6	
SCOTTSBLUFF	1204	879.0	1018.6	9.4	- 5.6	1.9	3.9	17.2	26+	-16.7	11	0	27	- 5.6	65	4	- 7	3	3	0	46	51	5.7	WNW	24.1*	W	1	2	13	13	6.9	
VALENTINE	789	924.7		6.7	- 8.9	- 1.3	3.7	20.0	5	-25.0	21	0	27			2	- 12	1	5	0	33	102	4.7	N*	26.8	NW	1	3	9	16	7.2	60
NEVADA																																
ELKO	1547	848.0	1021.6	10.6	- 3.3	3.8	6.1	17.8	6	-12.2	12	0	22	- 2.8	65	17	- 6	6	8	0	25	T	3.0	NE	17.4*	W	1	6	5	17	6.9	
ELY	1907	810.7	1020.9	10.6	- 5.6	2.7	5.7	18.9	6	-16.7	12	0	27	- 5.0	64	12	- 5	5	5	2	53	51	3.4	SSW	16.1	NW	26	5	6	17	6.9	67
LAS VEGAS	659	951.9	1018.7	20.0	6.7	13.2	4.2	25.6	6	1.1	17+	0	0	- 1.7	40	8	- 3	5	3	1	0	0	3.0	SW	13.4*	SW	1	11	7	10	5.2	84
RENO	1342	865.5	1021.3	15.0	- 1.1	6.9	4.6	22.8	25	- 5.6	28	0	22	0.0	67	28	2	13	4	0	0	0	1.8	S	17.9	S	1	5	4	19	7.5	64
WINNEMUCCA	1310	871.0		13.3	- 1.7	6.0	5.8	19.4	8+	-11.1	12	0	19			19	- 5	9	6	0	T	T	3.3	S	17.9	SW	1	5	4	19	7.6	55
NEW HAMPSHIRE																																
CONCORD	103	1002.9	1014.2	- 0.6	-13.9	- 7.3	-2.2	7.8	18	-26.7	27+	0	28	-13.3	64	60	- 3	26	6	0	376	533	4.0	NW	15.2	NW	16	9	9	10	5.2	61
MT WASHINGTON OBS	1909	788.6		-12.8	-24.4	-18.6	-3.9	- 2.8	6	-37.2	4	0	28			142	10	28	18	0	1168	432	21.9		46.9Y	NW	3	4	5	19	7.6	29
NEW JERSEY																																
ATLANTIC CITY	18	1015.4	1017.8	4.4	- 7.2	- 1.4	-2.9	15.6	6	-15.0	8	0	25	- 8.3	64	64	- 16	33	9	0	8	25	4.8	NW	14.3*	ENE	19	11	5	12	5.6	64
ATLANTIC CITY U	3			3.3	- 5.0	- 0.7	-2.8	11.7	7	-13.3	8	0	24			60	- 26	31	7	0			5.9		14.3*	NNE	19+					
NEWARK	3	1015.9	1017.3	2.2	- 7.2	- 2.4	-2.8	10.6	6	-18.9	8	0	26	-10.6	57	55	- 16	20	10	0	91	127	5.3	WNW	14.3*	NNW	8+	7	9	12	5.9	
TRENTON U	17	1010.0		2.2	- 7.2	- 2.7	-3.4	11.7	6	-18.9	8	0	26			55	- 11	21	9	0	84	51	4.6	NW*	15.6	NW	3	11	6	11	5.2	56
NEW MEXICO																																
ALBUQUERQUE	1618	849.7	1018.8	12.2	- 2.8	4.7	0.3	22.2	7	-12.2	13	0	21	- 4.4	57	6	- 4	3	4	1	20	25	3.4	N	17.9	NW	19*	13	4	11	4.9	77
CLAYTON	1515	845.2		11.1	- 4.4	3.2	1.0	27.2	1	-15.6	12	0	22			13	3	12	3		140	102						10	7	11	5.5	
RATON	1944	805.1		10.0	- 7.2	1.3	0.9	21.1	5+	-17.2	13	0	26			10	- 1	9	4	0	99	51						10	7	11	5.6	
ROSWELL	1103	882.2		16.1	- 3.9	6.1	1.3	28.3	1	-18.3	13	0	24			20	9	13	5	0	122	51	4.0	W	16.5	W	1	16	4	8	4.0	77
SILVER CITY	1638	836.7		15.0	- 2.2	6.5		23.3	7+	-15.0	13	0	18			11		8	3	0	97	102						18	5	5	3.1	
NEW YORK																																
ALBANY	84	1012.6	1016.4	- 2.2	-13.9	- 8.2	-3.6	6.7	18	-26.7	23	0	28	-13.9	64	47	- 9	16	10	0	394	356	3.8	WNW	15.2	W	15+	9	3	16	6.4	53

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure		Temperature							No. of days			Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind			No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers) Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
BINGHAMTON	485	953.6	1015.3	- 3.9	-13.3	- 8.6	-3.7	5.0	18	-25.6	8	0	28	-13.3	71	43	- 12	14	15	0	574	254	5.2	WSW	12.1	NW	3	3	5	20	7.8	41
BUFFALO	215	987.5	1017.1	- 2.8	-11.7	- 7.3	-2.4	5.6	19+	-20.6	26	0	27	-12.2	66	26	- 43	8	20	0	394	483	6.3	WSW	15.2	W	20+	1	6	21	8.4	34
NEW YORK U	40	1006.8	1016.4	2.2	- 6.1	- 2.1	-2.8	10.6	18	-18.9	8	0	25	-10.0	56	65	- 7	25	7	0	94	102	4.8	W#	13.4	W	3	10	9	9	5.2	63
NEW YORK LA GUARDIA	6	1014.9	1016.9	1.7	- 6.1	- 2.2	-3.1	10.0	6	-18.9	8	0	24	-10.0	57	62	- 16	26	8	0	76	76	6.4	WNW	15.2	NW	8+	8	10	10	5.8	
ROCHESTER	166	996.7	1017.1	- 3.3	-12.8	- 7.8	-3.9	5.6	19+	-21.1	1	0	27	-11.1	76	36	- 28	12	20	0	582	203	5.8	WSW	17.0	W	20	1	9	18	7.8	47
SCHENECTADY	66			- 1.7	-13.3	- 7.5	-2.9	7.8	18	-25.0	8	0	28			47	- 11	18	10		406	483						12	8	8	5.0	
SYRACUSE	127	993.0	1016.3	- 2.8	-12.2	- 7.6	-3.3	6.1	19+	-25.0	8	0	27	-11.7	72	52	- 27	17	20	0	719	533	6.4	W	20.1	W	3	4	7	17	7.3	47
NORTH CAROLINA																																
ASHEVILLE U	671	936.1		7.8	- 5.6	1.2	-3.6	18.9	6	-16.7	22	0	25			45	- 33	16	7	0	114	76	4.2	NW#	14.8	SE	19	10	9	9	5.1	58
CAPE HATTERAS R	2	1015.9	1016.7	10.0	0.6	5.2	-2.9	18.3	12+	- 9.4	23	0	15	1.7	77	190	90	70	15	3	33	T	6.1	NNE				8	4	16	6.5	44
CHARLOTTE	224	988.8	1017.9	9.4	- 3.3	3.1	-4.0	17.8	25	-13.9	27	0	24	- 5.0	60	80	- 10	24	8	0	64	76	4.0	NNE	12.1	NE	26	10	7	11	5.5	65
GREENSBORO	272	982.1	1018.2	7.2	- 5.0	1.1	-3.9	16.1	6	-16.1	27	0	26	- 6.7	61	75	- 9	25	8	0	124	76	3.9	NNE	13.4	NW	14	9	9	10	5.7	61
RALEIGH	132	1003.4	1017.8	8.9	- 3.9	2.3	-3.8	17.2	7	-12.8	27	0	23	- 4.4	65	88	6	25	8	0	175	178	4.8	NNE	13.0*	NE	8	9	8	11	5.9	61
WILMINGTON	9	1014.5	1017.4	11.7	- 0.6	5.7	-3.6	21.7	11	- 8.3	27	0	16	0.6	72	107	20	35	12	2	36	25	5.1	N	13.4	N	26+	7	6	15	6.4	51
WINSTON SALEM	295	981.7	1018.0	7.2	- 4.4	1.4	-3.9	16.7	6	-12.8	22	0	24	- 8.3	52	70	- 18	26	8	0	203	76	4.3	NE	14.3*	NE	26	9	8	11	5.8	
NORTH DAKOTA																																
BISMARCK	502	956.8	1020.3	- 1.7	-15.0	- 8.6	2.2	16.1	7	-28.9	25	0	28	-13.3	68	12	1	4	8	0	114	76	4.0	WNW	23.2	NW	1	1	5	22	8.3	32
DEVILS LAKE U	448	963.8		- 6.7	-18.9	-12.8	0.2	12.2	5	-30.6	21	0	28			15	6	7	8		173	127	3.9	NW#	12.1	NW	1	4	7	17	7.4	52
FARGO	274	984.0	1020.6	- 6.1	-18.3	-12.2	-0.3	10.6	5	-30.0	21	0	28	-16.7	67	8	- 5	4	8	0	99	51	5.5	N	17.9	NW	2+	6	3	19	7.6	55
WILLISTON U	579	948.4		- 1.7	-13.3	- 7.3	3.0	12.8	5	-30.0	2	0	28			13	1	3	11	0	104	76	4.1	N#	21.0	N	1	2	6	20	8.1	37
OHIO																																
AKRON	369	978.4	1018.2	- 1.7	-12.8	- 7.2	-4.8	10.6	6	-23.3	26	0	28	-11.1	72	27	- 31	8	14	0	472	203	4.5	SW	10.3*	NW	20	5	8	15	7.1	
CINCINNATI OBS	232			2.8	- 8.3	- 2.7	-4.4	15.6	6	-20.0	22	0	27			23	- 48	11	7	0	58	203	3.1	S#	13.4	SW	20					43
CINCINNATI U	169	994.9		3.9	- 7.2	- 1.6	-3.8	17.8	6	-18.3	22	0	25			22	- 43	9	9		84											
CLEVELAND	237	988.9	1018.2	- 2.8	-13.3	- 8.1	-5.9	7.2	6	-26.1	26	0	27	-11.1	75	19	- 41	4	13	0	340	229	5.1	S	13.9	SW	20	5	4	19	7.4	44
COLUMBUS	247	986.2	1019.1	0.0	-10.6	- 5.3	-5.4	10.6	6	-23.9	27	0	28	-10.6	66	26	- 33	7	10	0	221	178	4.6	S	12.1	W	14	4	7	17	7.3	53
COLUMBUS U	221			0.6	- 9.4	- 4.5	-5.0	11.7	6	-20.6	22	0	25			14	- 41	6	7	0	140	76										
DAYTON	304	984.7	1018.8	0.6	-11.1	- 5.3	-4.7	12.2	6	-23.3	22	0	27	-10.0	69	12	- 47	3	11	0	191	152	5.2	S	14.3	SW	20	4	8	16	7.1	44
MANSFIELD	395			- 2.2	-12.8	- 7.4	-5.1	9.4	6	-23.3	22	0	28			17	- 49	7	11	0	295	127						6	5	17	7.0	
SANDUSKY U	185	995.0		- 1.1	-11.1	- 6.2	-4.9	10.0	6	-21.7	22	0	26			24	- 29	6	9	0	282	279	4.4	SW#	17.0	W		8	9	11	5.8	67
TOLEDO	206	991.6	1018.2	- 2.2	-13.3	- 7.7	-5.1	8.3	19+	-23.3	27	0	27	-11.1	70	21	- 27	8	13	0	239	127	4.6	SW	12.5	NW	2	6	8	14	6.8	50
YOUNGSTOWN	359	973.3	1018.0	- 2.8	-13.3	- 8.1	-6.2	8.3	6	-23.9	27	0	28	-11.7	71	20	- 43	4	15	0	419	178	5.0	SSW	11.2*	WSW	20+	6	5	17	7.2	
OKLAHOMA																																
OKLAHOMA CITY	390	975.2	1020.1	12.2	- 3.3	4.4	-0.4	23.3	5	-11.7	22	0	23	- 5.0	58	6	- 29	3	3	0	41	T	6.2	SSW	18.8	SW	24	9	10	9	5.8	61
TULSA	206	994.3	1020.4	11.1	- 3.9	3.6	-1.4	25.0	27	-11.7	22	0	24	- 6.1	57	11	- 34	6	3	0	38	25	5.4	S	15.2	N	20	8	7	13	6.1	56
OREGON																																
ASTORIA	2	1016.7	1017.5	13.9	5.6	9.8	3.8	20.0	10	1.1	12	0	0	7.2	85	164	- 88	40	17	0	0	0	4.0	SE	20.6*	SSW	4	3	1	24	8.6	
BURNS U	1265	875.7		11.1	- 1.7	4.6	5.9	17.2	24	- 7.8	27	0	21			29	- 3	10	11	0	23	127						6	3	19	7.4	
EUGENE	110	1005.4		13.9	5.0	9.6	3.7	18.9	6	0.0	27+	0	2			134	8	36	15	0	0	0	2.9		13.9*	SSW	4	2	2	24	8.8	
MEACHAM	1234			7.8	0.0	3.9	5.6	14.4	25	- 4.4	27	0	20			86	- 16	26	15	0	292	152						5	3	20	7.8	
MEDFORD	396	971.9	1020.3	13.9	1.7	7.8	2.5	21.1	5	- 2.8	27	0	8	5.0	85	63	2	15	14	1	0	0	1.7	N	13.0*	SSE	12	2	5	21	8.2	
PENDLETON	452	966.1	1020.8	10.0	1.7	6.0	3.3	18.9	4	- 8.3	1	0	7	2.8	84	42	12	11	12	1	8	127	3.2	NW	17.0*	W	26	0	7	21	8.6	
PORTLAND	6	1013.2	1019.0	12.8	4.4	8.8	3.2	18.3	10	0.0	11	0	1	4.4	76	88	- 19	28	13	0	0	25	4.2	ESE	15.2	S	4	2	3	23	8.6	26
PORTLAND U	9			5.6	- 0.6	2.4	-2.2	12.8	2	-10.6	11	0	17			112	- 12	27	14		0	25										
ROSEBURG	154	1000.3		15.6	5.0	10.2	3.9	22.2	8	0.6	27+	0	0			100	- 7	31	19	0	0	0	1.5	S	11.2	SW	8	0	6	22	8.8	29
SALEM	59	1011.5	1019.0	13.9	3.9	8.7	2.9	18.9	10+	- 1.7	12+	0	4	6.7	86	85	- 50	35	17	0	0	25	3.0	S	13.0*	S	2	3	2	23	8.4	
SEXTON SUMMIT R	1169	885.2		10.0	3.9	7.0	5.0	15.0	23+	- 1.1	27	0	3			171	66	43	18	1	0	0	6.5	S				3	4	21	8.1	
PACIFIC AREA																																
CANTON ISLAND	3	1010.2	1010.5	31.1	25.0	28.2	-0.1	32.2	25+	23.9	4	5	0	21.7	71	10	- 44	5	4	0	0	0	6.2	NE	13.4*	NE	18	10	15	3	4.6	
ENIWETOK	4	1011.2		30.0	25.6	27.8	0.7	31.1	15	23.9	12	0	0			5	- 42	2	5		0	0	7.0									
TAGUAC GUAM R	110			27.8	22.8	25.2	-0.5	29.4	26+	20.0	26	0	0			241	152	81	20	0	0	0	4.3	NE#	11.6	NE	8					48
JOHNSTON	2	1013.9		27.2	23.3	25.3	0.3	29.4	5	21.7	9+	0	0			9	- 29	4	8	0	0	0	4.7		14.8	E	18	14	12	2	3.8	83
KOROR R	29	1007.5	1010.1	30.6	23.9	27.1	0.3	32.8	23	22.2	11	1	0	23.9	87	223	42	43	21	2	0	0	3.4	NE	11.6	NE	11	0	0	28	10.0	60
MAJURO	3	1010.8	1011.1	28.9	25.0	26.9	0.1	30.0	20+	22.2	5	0	0	22.8	77	243	26	80	21	3	0	0	5.8	E	15.2	E	24	1	8	19	8.2	46
PONAPE R	37	1005.4	1010.0	30.0	23.9	26.8	-0.1	30.6	27+	20.6	21	0	0	23.3	82	416	168	104	22	4	0	0	3.5	NE	11.2	E	2	0	2	26	9.2	48
TRUK MOEN ISLAND	2	1010.5	1010.6	30.0	23.9	26.9	-0.1	30.6	27+	21.1	24	0	0	23.3	78	187	27	36	19	0	0	0	3.3	NE	9.8	S	11	0	3	25	9.3	48
WAKE	3	1014.9		28.3	22.8	25.7	0.6	30.0	22+	20.6	16	0	0			8	- 26	4	5	0	0	0	5.0		10.7*	WNW	3	11	12	5	4.4	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PACIFIC AREA																																
YAP R	16	1009.1	1010.0	29.4	23.9	26.7	-0.2	31.1	25+	22.2	19	0	0	23.9	87	310	192	79	22	2	0	0	4.8	NE	13.0	NE	28+	0	1	27	9.8	48
PENNSYLVANIA																																
ALLENTOWN	115	1002.8	1017.8	- 0.6	-10.6	- 5.6	-4.0	7.2	6	-19.4	8	0	28	-11.1	67	65	- 2	21	7	0	320	127	4.9	W	18.3*	WNW	15	12	5	11	5.5	
ERIE	223	990.2	1017.8	- 2.8	-12.8	- 7.7	-4.6	9.4	6	-23.9	26	0	26	-11.1	73	24	- 35	9	15	0	312	229	6.4	S	19.2*	SSE	2	5	6	17	7.3	
HARRISBURG	102	1003.5	1018.1	1.1	- 8.3	- 3.8	-4.1	9.4	6	-16.1	17	0	27	-10.6	62	46	- 12	14	9	0	361	178	4.0	NW	12.5	W	21+	12	1	15	5.7	57
PHILADELPHIA	2	1012.9	1017.7	1.7	- 7.8	- 3.1	-3.7	11.7	6	-16.1	8	0	28	- 9.4	64	56	- 15	24	9	0	119	51	4.8	WSW	13.9	NW	15	10	4	14	6.0	55
PHILADELPHIA U	11			3.9	- 5.6	- 0.9	-2.7	16.7	6	-16.1	8	0	24			52		23	7	0												
PITTSBURGH	347	987.1	1018.9	- 2.2	-12.2	- 7.1	-5.5	10.0	6	-22.8	27	0	28	-10.6	74	53	- 3	11	15	0	518	152	3.9	SW	15.6*	NW	20	5	7	16	7.1	53
PITTSBURGH U	228			1.1	- 8.3	- 3.8	-4.6	13.3	6	-16.7	27+	0	25			53	- 6	17	14		290											45
READING U	81	1005.1		1.7	- 7.8	- 3.2	-4.0	11.1	6	-17.2	8	0	26			57	- 10	18	7	0	213	127	5.1	NW#	18.8	NW	3	12	5	11	5.5	53
SCRANTON	287	981.6	1017.4	- 2.2	-12.2	- 7.1	-4.4	6.7	6	-22.8	8	0	28	-12.8	66	50	- 1	15	9	0	457	178	3.9	SW	16.1	S	20	6	8	14	6.5	51
WILLIAMSPORT	161	998.1	1018.1	- 0.6	-12.2	- 6.3	-5.1	8.9	18	-20.6	27	0	28	-12.8	63	44	- 20	13	13	0	345	203	4.2	W	11.6*	WNW	14	10	3	15	6.3	
RHODE ISLAND																																
BLOCK ISLAND	34	1010.2	1014.6	0.6	- 6.7	- 3.0	-2.7	7.2	2	-17.2	8	0	26			89	6	39	7	0	64	25						11	5	12	5.6	
PROVIDENCE	17	1008.9	1015.3	1.7	- 8.3	- 3.2	-1.9	10.0	18	-17.8	8	0	27	-10.6	60	80	1	37	9	0	132	102	5.6	WNW	13.9*	SSW	21+	9	10	9	5.6	64
SOUTH CAROLINA																																
CHARLESTON	12	1015.3	1017.4	13.3	1.1	7.4	-3.4	23.9	19	- 5.0	27+	0	12	0.0	64	124	41	57	11	1	8	T	5.0	NNE	27.7Y	SW	19	6	7	15	6.5	54
CHARLESTON U	3			12.2	3.3	7.7	-3.6	21.1	19	- 3.9	27	0	8			128	50	50	10	0	T	T	5.4		16.1	N	26					
COLUMBIA	66	1005.0	1018.2	12.2	- 1.1	5.6	-3.6	20.0	7	- 8.3	18	0	15	- 2.8	61	100	5	29	11	1	T	T	4.0	NNE	13.0*	WSW	14	9	8	11	5.8	57
FLORENCE	45	1011.5	1017.6	11.7	- 0.6	5.3	-4.0	21.1	11	- 8.9	27	0	16	- 2.2	61	58	- 23	22	9	1	25	25	4.6	NE	11.6*	WSW	19	8	6	14	6.0	
GNVLE SPARTANBURG	292	979.7	1017.8	10.6	- 2.8	3.9	-3.6	21.1	7	-12.2	22	0	19	- 5.0	57	83	- 21	33	8	0	69	51	3.8	NE	14.8	W	14	11	6	11	5.2	66
SOUTH DAKOTA																																
HURON	391	970.2	1019.8	0.0	-13.3	- 6.6	1.7	15.0	5	-25.0	21	0	28	-10.0	77	9	- 6	2	11	0	86	127	5.5	NW	18.8	NW	1	3	7	18	8.0	42
RAPID CITY	965	901.3	1019.0	6.1	- 8.3	- 1.0	3.4	17.2	5+	-23.3	21	0	25	- 6.7	70	23	11	5	12	0	305	102	5.2	NNW	22.4	NW	1	3	6	19	7.6	44
SIOUX FALLS	433	965.3	1019.4	- 0.6	-12.8	- 6.8	0.4	15.0	5	-25.0	21	0	28	-11.1	73	13	- 10	7	7	0	173	178	4.5	NNW	12.1#	NNW	1	5	8	15	7.0	
TENNESSEE																																
BRISTOL	459	961.8	1018.2	5.6	- 5.6	- 0.1	-4.2	17.2	6	-16.7	27	0	24	- 6.7	65	58	- 33	21	11	0	203	76	3.0	SW	11.6*	W	14	5	8	15	6.8	
CHATTANOOGA	204	990.8	1019.5	8.3	- 5.6	1.6	-5.1	19.4	6	-16.1	22	0	24	- 6.1	63	56	- 80	24	7	0	76	25	4.2	N	12.1	SW	24	9	8	11	5.8	63
KNOXVILLE	290	982.5	1019.2	7.8	- 4.4	1.7	-4.2	19.4	6	-15.0	22	0	24	- 5.0	64	90	- 32	42	8	0	183	76	3.8	N	13.0	SW	25+	9	4	15	6.4	46
MEMPHIS	80	1005.1	1020.5	9.4	- 2.8	3.1	-3.9	21.1	6	-12.2	22	0	20	- 3.3	65	74	- 45	38	8	1	20	25	4.5	N	15.6	N	2	11	6	11	5.1	66
MEMPHIS U	83			8.9	- 2.2	3.3	-3.7	19.4	6	-11.1	22	0	19			64	- 52	33	11		38	25										
NASHVILLE	176	988.8	1019.5	7.8	- 5.6	1.2	-4.3	18.9	6	-16.7	22	0	25	- 5.0	68	72	- 43	29	9	0	221	76	4.2	NNW	11.2	NW	2	7	10	11	6.0	63
OAK RIDGE	276	984.4		6.7	- 6.1	0.3	-5.1	18.9	6	-16.7	22	0	26			73	- 75	31	9	0	196	102	2.1		13.0Y		14	10	6	12	5.9	
TEXAS																																
ABILENE	536	956.2	1018.7	16.7	0.0	8.4	-0.7	29.4	1	- 9.4	12	0	14	- 3.3	52	9	- 19	6	4	0	64	51	5.0	SSW	15.6	N	25	10	5	13	5.7	59
AMARILLO	1099	889.3	1017.5	13.3	- 2.8	5.4	1.1	31.1	1	-11.7	11	0	21	- 5.0	56	17	1	8	6	0	122	51	6.3	N	17.0	NE	27	9	11	8	5.2	69
AUSTIN	182	997.0	1019.5	17.8	3.9	10.9	-1.2	28.3	1	- 5.0	12	0	6	0.6	55	72	6	62	3	1	25	T	4.7	S	20.1	N	2	10	6	12	5.3	53
BROWNSVILLE	5	1015.7	1018.5	22.2	8.9	15.6	-2.2	32.2	10	- 1.1	14	1	2	8.9	72	17	- 21	10	6	1	T	T	5.9	SSE	15.2	NW	18	16	2	10	4.6	59
CORPUS CHRISTI	13	1018.0	1019.1	20.6	6.7	13.5	-2.3	33.3	2	- 2.2	14+	1	4	6.7	69	35	- 9	26	5	1	0	0	6.2	NNE	18.8	SE	2	13	4	11	4.9	60
DALLAS	147	1000.9	1020.1	16.1	0.6	8.3	-1.4	30.6	1	- 7.2	22+	0	10	- 2.8	52	8	- 57	5	4	1	T	T	5.3	S	17.0	N	2	9	5	14	5.7	64
DEL RIO U	292			20.0	5.0	12.4	-1.3	32.8	1	- 3.9	13	1	4			50	27	48	3	0	T	T										
EL PASO	1194	887.6	1017.0	17.2	1.7	9.6	-0.2	25.0	6+	-11.7	13	0	8	- 4.4	41	13	3	12	3	0	135	102	3.8	NNE	24.1	NE	25	19	6	3	3.0	89
FORT WORTH	166	998.6	1020.1	15.6	0.0	8.0	-1.6	30.6	1	- 7.2	22	0	14	- 2.2	56	4	- 53	2	4	0	T	T	6.1	NNE	21.5*	NNE	25	9	6	13	5.9	
GALVESTON U	2			14.4	7.2	10.9	-2.8	22.8	2	- 1.7	12	0	2			67	- 7	38	6	0	T	T	6.1		17.0	NE	18					62
GALVESTON	2	1017.3	1019.7	14.4	6.7	10.5	-3.2	23.9	2	- 1.7	12	0	3	5.6	74	57	- 28	22	7	2	T	T	5.4	N				12	3	13	5.4	
HOUSTON U	12			17.8	7.2	12.6	-1.4	25.0	2	- 2.2	12	0	3			71	- 11	45	6		0	0										
HOUSTON	15	1016.6	1019.3	17.8	5.0	11.4	-2.6	27.8	2	- 3.9	12	0	4	5.0	73	66	- 21	43	6	2	T	T	5.2	N				9	7	12	5.8	63
LAREDO	152	1003.4	1018.7	22.2	7.2	14.7	-1.8	33.9	9+	- 2.2	12	5	3	2.8	53	52	29	24	4	1	0	0	5.0	SSE	13.9*	N	2	14	5	9	4.2	
LUBBOCK	988	904.4	1018.3	14.4	- 2.8	5.8	-0.3	28.3	1	-13.9	13	0	22	- 3.9	59	14	- 1	6	7	0	203	102	6.6	W	17.9*	W	1	12	7	9	4.5	
MIDLAND	870	916.9	1017.0	17.2	0.0	8.6	-0.5	26.7	27+	-10.0	13+	0	11	- 3.3	50	19	4	9	6	0	69	51	5.2	NNE	14.3*	NE	2	12	5	11	4.8	
PORT ARTHUR	5	1017.6	1019.2	17.2	3.9	10.6	-2.4	26.7	2	- 3.9	12	0	8	4.4	74	101	- 12	72	7	3	T	T	4.9	N	26.4	N	2	12	5	11	5.2	57
SAN ANGELO	580	950.1	1018.6	17.8	0.6	9.3	-0.7	29.4	1	- 7.8	13	0	11	- 2.2	51	21	- 2	15	4	0	76	51	3.9	SSE	12.5*	N	2	11	6	11	5.0	
SAN ANTONIO	241	993.4	1019.0	18.9	3.9	11.4	-1.6	29.4	1	- 3.9	12+	0	6	1.7	57	91	49	54	5	3	T	T	4.4	NNW	17.9	NE	2	11	7	10	5.0	65
VICTORIA	32	1014.6		18.9	5.0	12.1	-2.3	28.3	2	- 3.9	12	0	5			38	- 21	19	4	1	T	T	5.7		22.8Y		2	12	3	13	5.5	
WACO	152	998.0	1019.8	16.7	1.7	9.3	-1.6	29.4	1	- 6.1	12	0	11	0.0	57	13	- 49	10	3	0	25	T	6.2	S	20.6*	NNW	2	10	5	13	5.6	
WICHITA FALLS	303	981.5	1019.4	15.0	- 1.1	7.0	-0.7	28.9	1	- 7.2	3	0	18	- 4.4	52	13	- 22	7	4	0	104	76	4.6	NNE	15.6*	NNE	20	9	6	13	5.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

FEBRUARY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
UTAH	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MILFORD	1533	846.7		11.7	- 6.1	2.9	4.2	22.8	5	-21.1	12	0	24			20	2	10	9	0	218	127						7	7	14	6.4	
SALT LAKE CITY	1286	871.3	1022.5	10.0	- 2.8	3.7	3.1	16.7	6+	-10.6	13+	0	22	- 3.9	62	17	- 13	7	5	0	13	T	3.7	SSE	21.0	NW	1	7	9	12	6.1	63
WENDOVER	1291	874.0		10.6	- 0.6	5.0	4.6	17.2	24	- 9.4	13	0	15			7	- 1	4	4	1	T	T						8	7	13	6.2	
VERMONT																																
BURLINGTON	101	999.4	1015.0	- 5.0	-18.3	-11.8	-4.8	2.8	19+	-32.2	4	0	28	-17.2	62	31	- 14	10	12	0	401	381	4.2	S	12.1	N	3	7	4	17	6.9	54
VIRGINIA																																
LYNCHBURG	289	982.4		5.0	- 5.6	- 0.2	-4.1	14.4	6	-15.0	22	0	26			47	- 20	18	7	0	236	76	3.2		10.3	NE	8	9	6	13	6.0	52
NORFOLK	8	1016.9	1018.2	6.7	- 2.8	2.1	-3.3	21.1	11	- 9.4	23	0	20	- 4.4	67	95	14	31	11	0	191	127	5.9	NNE	17.9	W	14	9	5	14	6.0	56
RICHMOND	49	1011.9	1018.5	6.7	- 5.0	0.7	-3.7	17.8	11	-12.8	27	0	26	- 6.1	63	76	2	36	8	0	160	127	3.7	N	13.0	N	8	10	6	12	5.8	52
ROANOKE	358	974.6	1018.1	6.1	- 6.1	0.0	-4.0	17.2	6	-16.7	22	0	26	- 8.3	56	50	- 23	15	8	0	310	102	4.4	WNW	13.4*	WSW	14	8	8	12	6.0	
WASHINGTON																																
OLYMPIA	58	1010.8	1018.7	13.3	2.8	7.9	2.9	20.6	8	- 4.4	12	0	6	5.0	86	163	- 5	62	16	0	T	25	2.8	SW	15.6*	SSW	4	2	4	22	8.5	
SEATTLE TACOMA	122	1004.1	1018.2	12.8	5.0	9.0	4.1	20.0	8	0.0	1	0	1	4.4	76	111	3	41	15	0	13	25	3.8	SE	14.3*	SW	4	3	5	20	8.1	
SEATTLE U	4			13.3	7.2	10.2	3.7	20.6	12+	1.1	1	0	0			101	- 2	45	13		T	T			25.0	SW	4					43
SPOKANE	718	950.2	1020.2	7.2	- 1.1	3.0	4.1	12.8	10	-17.2	1	0	17	- 0.6	81	56	9	28	13	0	69	203	3.6	NE	15.2	SW	26	4	5	19	7.6	39
STAMPEDE PASS R	1206	880.5		5.0	- 0.6	2.3	5.3	8.9	24+	- 6.7	2+	0	18			230	- 28	93	17	0	699	1372						3	1	24	8.6	
TATOOSH ISLAND	31	1013.5	1016.7	11.7	6.1	8.9	2.8	17.2	9	1.1	1	0	0	6.1	83	228	7	60	17	0	0	0	9.6	ENE	27.3	S	4	4	1	23	8.4	29
WALLA WALLA U	289	983.4		8.9	1.7	5.3	1.7	21.7	4	- 7.2	1	0	11			41	2	9	12	1	T	102	1.8	E*	14.3	W	26	1	3	24	9.0	22
YAKIMA	323	981.0	1021.0	8.9	- 2.2	3.2	2.1	16.7	28	-18.9	1	0	22	- 0.6	82	13	- 9	10	8	0	15	356	2.3	W	14.3*	W	26	5	3	20	7.6	
WEST INDIES																																
SAN JUAN P.R.	5	1014.2	1017.3	28.9	20.6	24.6	1.0	30.6	22	18.9	25+	0	0	20.0	78	35	- 38	6	14	0	0	0	3.5	ENE	11.2	E	23	4	19	5	5.3	57
SWAN ISLAND	9	1012.9		28.3	23.3	25.6	-0.2	29.4	19	21.1	9	0	0			55	13	27	8	0	0	0						5	14	9	5.8	
WEST VIRGINIA																																
CHARLESTON	286		1018.8	3.9	- 7.2	- 1.7	-4.7	16.7	6	-20.0	16	0	26	- 6.7	72	69	- 21	24	13	0	483	102	3.0	SW	9.4*	NW	24+	7	7	14	6.8	
ELKINS	600	946.2	1017.9	2.2	-11.7	- 4.7		15.0	6	-29.4	27	0	27	- 9.4	72	69		17	17	0	569	203	3.5	NW	13.0*	SSW	20	5	6	17	7.0	
HUNTINGTON U	252	987.8	1019.2	3.3	- 7.8	- 2.2		17.2	6	-20.0	22	0	28	- 8.3	65	41	- 38	13	13	0	201	76	3.0	S	13.0	SW	20	6	7	15	7.0	
PARKERSBURG U	187			2.8	- 8.3	- 3.0	-4.9	15.6	6	-19.4	22	0	27			38	- 34	10	12	0	211	127	3.3		12.5	NW	20					47
WISCONSIN																																
GREEN BAY	208	994.3	1018.2	- 6.1	-17.2	-11.6	-3.6	3.9	6	-26.1	26	0	28	-15.6	73	15	- 12	8	9	0	157	178	4.0	SW	16.1	NW	2	6	6	16	6.6	43
LA CROSSE	199	993.2	1019.5	- 3.9	-15.0	- 9.6	-2.6	4.4	17+	-26.1	21	0	28	-13.9	69	12	- 14	6	6	0	135	203	4.9	S	16.5*	NNW	20	9	8	11	6.0	
MADISON	262	981.2	1018.7	- 4.4	-15.6	- 9.9	-3.3	4.4	6	-25.6	3	0	28	-14.4	69	10	19	7	3	0	104	178	4.1	S	14.3	W	20	9	5	14	6.0	52
MILWAUKEE	205	992.2	1018.6	- 4.4	-13.9	- 8.9	-3.6	5.6	6	-24.4	21	0	28	-14.4	65	11	- 25	3	9	0	163	102	5.2	W	15.2	NW	2	8	7	13	6.3	53
WYOMING																																
CASPER	1621	836.9	1018.8	7.2	- 6.7	0.2	3.4	17.2	6	-20.6	11	0	26	- 6.7	63	12	- 3	5	9	0	142	51	6.0	WSW	21.5*	SW	1	2	9	17	7.6	
CHEYENNE	1867	812.1	1018.4	7.2	- 5.6	0.6	2.9	17.2	6	-20.6	11	0	23	- 7.8	57	4	- 10	2	6	0	79	51	7.2	WNW	25.5	W	1	6	12	10	6.1	71
LANDER	1696	835.1	1018.5	8.3	- 5.6	1.2	5.6	16.1	5	-21.1	11	0	25	- 7.2	58	8	- 10	3	3	0	107	76	2.8	W	20.1	SW	1	8	8	12	5.9	76
SHERIDAN	1202	884.9	1019.6	7.2	- 6.1	0.6	5.1	15.6	5	-22.2	11	0	25	- 5.6	67	21	2	9	9	0	333	229	4.2	NW	26.4	NW	1	1	11	16	7.6	48

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
* Value entered in column headed "Fastest Mile" is the highest observed wind speed. This station is not equipped with an automatic recording wind instrument
A Maximum hourly average.
\+ And also on an earlier date or dates.
Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.
B Number of days maximum 21.1°C. or above for Alaskan Stations.
\# Wind direction to 8 compass points only.
Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.)

FEBRUARY 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	672	2671	2243
Huntsville	747	3058	2479
Mobile	473	1772	1382
Montgomery	591	2377	1885
ALASKA			
Anchorage	1156	7204	7785
Annette	561	2955	4812
Barrow	2295	12711	13360
Barter Island	2203	12337	13165
Bethel	1507	8685	9160
Cold Bay	997	6043	6418
Cordova	823	6040	6683
Fairbanks	1830	9884	10695
Juneau	885	5660	6210
King Salmon	1305	7339	7885
Kotzebue	1815	10005	10778
McGrath	1787	10168	10497
Nome	1507	9049	9584
St. Paul	1221	7110	7168
Shemya	882	5931	6258
Yakutat	816	5653	6143
ARIZONA			
Flagstaff	788	4569	4850
Phoenix (U)	115	869	
Phoenix	148	1072	1352
Prescott	505	2806	3224
Tucson	215	1216	1541
Winslow	618	3440	3716
Yuma	28	588	779
ARKANSAS			
Ft. Smith	724	2979	2670
Little Rock	709	2893	2650
Texarkana	569	2398	2078
CALIFORNIA			
Bakersfield	179	1570	1731
Bishop	454	2785	3235
Blue Canyon	538	2900	3586
Burbank	121	976	1170
Eureka (U)	266	2788	3043
Fresno	234	1830	2046
Long Beach	135	862	1251
Los Angeles (U)	101	786	938
Los Angeles	123	863	1315
Mt. Shasta (R)	571	3504	3953
Oakland	215	1885	1992
Point Arguello (R)	231	2250	2312
Red Bluff	250	1795	1959
Sacramento (U)	202	1765	1860
Sacramento	249	1966	1920
Sandberg (R)	394	2376	2842
San Diego	114	851	977
San Francisco (U)	179	1928	1984
San Francisco	250	2069	2033
San Jose (U)	164	1430	
Santa Maria	184	1821	1924
COLORADO			
Alamosa	1205	6054	6205
Colorado Springs	730	4175	4584
Denver	768	4332	4275
Grand Junction	733	4379	4358
Pueblo	732	4002	4072
CONNECTICUT			
Bridgeport	1111	4562	4019
Hartford	1209	5345	4570
Middletown	1184	5202	
New Haven	1110	4626	4193
DELAWARE			
Wilmington	1044	4301	3690
DIST. OF COLUMBIA			
Washington (U)	892	3717	
Washington	946	3801	3236
FLORIDA			
Apalachicola (U)	398	1436	1095
Daytona Beach	288	1005	724
Fort Myers	100	414	380
Jacksonville	379	1396	1044
Key West	5	79	99
Lakeland (U)	230	764	562
Miami	46	240	195
Miami Beach	22	121	132
Orlando	232	798	655
Pensacola (U)	455	1627	1207
Tallahassee	437	1698	1247
Tampa	229	781	581
West Palm Beach	84	328	222
GEORGIA			
Athens	694	2818	2335
Atlanta	724	2983	2361
Augusta	599	2442	1957
Columbus	585	2396	1949
Macon	561	2288	1778
Rome	780	3234	2647
Savannah	494	1995	1520
Thomasville (U)	430	1684	1288
IDAHO			
Boise	600	3962	4294
Idaho Falls 46W (R)	858	5594	6156
Idaho Falls 42NW (R)	909	5873	6416
IDAHO (Cont'd.)			
Lewiston	674	3998	4093
Pocatello	732	4665	5121
ILLINOIS			
Cairo (U)	895	3611	3040
Chicago (Midway)	1277	5175	4496
Chicago (O'Hare)	1339	5521	
Moline	1315	5598	4798
Peoria	1292	5383	4534
Rockford	1357	5718	5057
Springfield	1198	4885	4197
INDIANA			
Evansville	1008	4282	3551
Ft. Wayne	1294	5297	4606
Indianapolis	1222	4955	4242
South Bend	1312	5454	4682
IOWA			
Burlington	1212	5195	4619
Des Moines	1285	5429	4934
Dubuque	1364	5981	5466
Sioux City	1178	5351	5286
Waterloo	1389	5962	5414
KANSAS			
Concordia	871	4381	4087
Dodge City	722	3823	3780
Goodland	772	4342	4472
Topeka	903	4310	3994
Wichita	780	3823	3612
KENTUCKY			
Lexington	1014	4209	3568
Louisville	968	4175	3613
LOUISIANA			
Alexandria	539	2190	
Baton Rouge	449	1649	1364
Lake Charles	433	1643	1241
New Orleans (Audubon Park)	410	1250	
New Orleans	469	1671	1216
Shreveport	512	2140	1826
MAINE			
Caribou	1650	7167	6950
Greenville (U)	1601	7030	
Portland	1327	5650	5311
MARYLAND			
Baltimore (U)	963	3713	3129
Baltimore	1037	4243	3558
Frederick	1085	4565	3823
MASSACHUSETTS			
Blue Hill Obs. (R)	1184	4986	4517
Boston	1087	4404	4031
Nantucket	1016	4170	3944
Pittsfield	1329	5909	5424
Worcester	1257	5433	4977
MICHIGAN			
Alpena	1572	6548	5674
Detroit (City AP)	1287	5209	4518
Detroit (M. Wayne Co.)	1320	5428	4666
Detroit (Willow Run)	1312	5395	4544
Escanaba (U)	1521	6410	5886
Flint	1395	5828	5045
Grand Rapids	1342	5444	4950
Lansing	1375	5716	4977
Marquette (U)	1487	6419	5790
Muskegon	1341	5369	4931
S. Ste. Marie	1648	6861	6431
MINNESOTA			
Duluth	1620	7351	7103
Internat. Falls	1759	7786	7747
Minneapolis	1478	6483	6261
Rochester	1446	6361	6032
St. Cloud	1512	6612	6561
MISSISSIPPI			
Jackson	597	2329	1842
Meridian	624	2510	1898
Vicksburg (U)	576	2203	1690
MISSOURI			
Columbia	994	4332	3873
Kansas City	908	4093	3747
St. Joseph	980	4572	4219
St. Louis (RFC)	969	3992	3476
St. Louis	1016	4255	3716
Springfield	853	3942	3499
MONTANA			
Billings	783	4639	5076
Butte	849	6495	
Glasgow	1162	5901	6676
Great Falls	786	4939	5332
Havre	1010	5648	6317
Helena	842	5417	5860
Kalispell	928	5757	6251
Miles City	1012	5402	5717
Missoula	941	5835	5924
NEBRASKA			
Grand Island	1027	5263	4688
Lincoln (U)	970	4674	4427
Norfolk	1069	5285	5217
North Platte	911	4966	4930
Omaha	1058	4868	4748
Omaha N. Omaha AP	1103	5124	5086
Scottsbluff	819	4703	4900
Valentine	984	5221	5429
NEVADA			
Elko	724	4801	5300
Ely	786	4733	5403
Las Vegas	254	1832	2209
Reno	572	4047	4328
Tonopah	607	3676	
Winnemucca	616	4338	4835
NEW HAMPSHIRE			
Concord	1287	5636	5342
Mt. Washington Obs. (R)	1863	9916	9375
NEW JERSEY			
Atlantic City	986	3998	3503
Atlantic City (U)	954	3807	
Newark	1041	4156	3760
Trenton (U)	1051	4247	3695
NEW MEXICO			
Albuquerque	680	3405	3354
Clayton	757	3712	3778
Raton	852	4375	4487
Roswell	610	3176	3261
Silver City	588	2758	
NEW YORK			
Albany	1331	5590	5035
Binghamton	1348	5800	5262
Buffalo	1288	5434	5061
New York (U)	1021	4105	3567
New York (LaGuardia)	1028	4124	3517
Rochester	1309	5408	4810
Schenectady	1294	5371	
Syracuse	1300	5418	4889
NORTH CAROLINA			
Asheville (U)	857	3621	3090
Cape Hatteras (R)	658	2397	1970
Charlotte	766	3142	2485
Greensboro	865	3468	2972
Raleigh	803	3242	2692
Wilmington	634	2458	1894
Winston-Salem	844	3381	2827
NORTH DAKOTA			
Bismarck	1351	6287	6656
Devils Lake (U)	1565	7046	7284
Fargo	1535	6563	6888
Grand Forks CAA	1592	6614	
Pembina	1627	6817	
Williston (U)	1292	6264	6617
OHIO			
Akron	1282	5207	4591
Cincinnati (U)	996	3998	
Cincinnati	1132	4683	3793
Cincinnati Obs.	1053	4345	3642
Cleveland	1327	5168	4636
Columbus	1186	5097	4070
Columbus (U)	1144	4586	
Dayton	1186	4930	4171
Mansfield	1292	5369	4631
Sandusky (U)	1233	4997	4199
Toledo	1310	5479	4725
Youngstown	1326	5478	4519
OKLAHOMA			
Oklahoma City	692	3179	3045
Tulsa	736	3214	2919
OREGON			
Astoria	422	3271	3504
Burns (U)	683	4522	4988
Eugene	437	3153	3297
Meacham	719	5141	5299
Medford	524	3522	3412
Pendleton	613	3630	3921
Portland (U)	386	2689	2946
Portland	477	3047	3303
Roseburg	403	2916	3126
Salem	475	3297	3267
Sexton Summit (R)	566	3656	4115
PENNSYLVANIA			
Allentown	1198	4940	4299
Erie	1306	5150	4545
Harrisburg	1107	4575	3907
Philadelphia (U)	962	3892	
Philadelphia	1072	4345	3847
Pittsburgh (U)	1110	4464	3764
Pittsburgh	1273	5201	4399
Reading (U)	1078	4365	3733
Scranton	1272	5295	4739
Williamsport	1235	5139	4409
RHODE ISLAND			
Block Island	1071	4308	3830
Providence	1076	4600	4265
SOUTH CAROLINA			
Charleston (U)	527	1941	1479
Charleston	545	2188	1672
Columbia	641	2524	2046
Florence	648	2543	1956
Greenville-Spartanburg	720		
SOUTH DAKOTA			
Huron	1251	5998	5962
Pierre	1121	5318	
Rapid City	968	4973	5227
Sioux Falls	1261	5766	5836
TENNESSEE			
Bristol	920	3867	3266
Chattanooga	839	3349	2697
Knoxville	835	3405	2820
Memphis (U)	750	2918	2436
Memphis	760	3033	2525
Nashville	855	3532	2837
Oak Ridge	905	3697	2967
TEXAS			
Abilene	502	2238	2163
Amarillo	648	3193	3246
Austin	374	1652	1437
Brownsville	185	673	526
Corpus Christi	271	1100	805
Dallas	500	2160	1948
Del Rio (U)	302	1363	
El Paso	438	2197	2154
Ft. Worth	517	2227	1987
Galveston (U)	366	1274	1016
Glaveston	388	1346	1052
Houston (U)	294	1207	1074
Houston	351	1344	1087
Laredo	228	961	723
Lubbock	627	2896	2862
Midland	487	2230	2179
Port Arthur	384	1557	1279
San Angelo	451	1963	1848
San Antonio	349	1490	1315
Victoria	318	1307	1000
Waco	452	1921	1694
Wichita Falls	565	2441	2410
UTAH			
Milford	774	4420	4790
Salt Lake City	731	4358	4339
Wendover	666	4256	4413
VERMONT			
Burlington	1514	6380	5614
VIRGINIA			
Lynchburg	931	3773	3216
Norfolk	815	3162	2635
Richmond	882	3444	3035
Roanoke	917	3796	3210
WASHINGTON			
Olympia	523	3682	3657
Seattle (U)	406	2798	3092
Seattle	445	3031	3478
Seattle-Tacoma	465	3402	3636
Spokane	768	4779	4952
Stampede Pass (R)	803	5949	6206
Tatoosh Island (R)	469	3638	3785
Walla Walla	668	3632	
Walla Walla (U)	653	3479	3652
Yakima	754	4257	4504
WEST VIRGINIA			
Charleston	1002	4249	3364
Huntington (U)	1028	4299	3217
Parkersburg (U)	1069	4387	3603
WISCONSIN			
Green Bay	1505	6241	5931
La Crosse	1405	6000	5665
Madison	1420	6230	5644
Milwaukee	1372	5935	5432
WYOMING			
Casper	906	4998	5223
Cheyenne	890	4873	5075
Lander	856	5298	5665
Sheridan	891	5174	5471

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

FEBRUARY 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama *																													
Alaska *																													
Arizona										0	0	4	0																
Arkansas *																													
California																										0	0	6	0
Colorado *																													
Connecticut																		0	0	5	0								
Delaware *																													
Florida	3	1	0	0	5					1	6	5	0																
Georgia	1	1	0	0	3					0	0	4	0																
Hawaii	1	1	0	0	4					0	0	5	5																
Idaho												4																	
Illinois *																													
Indiana *																													
Iowa *																													
Kansas *																													
Kentucky *																													
Louisiana										0	0	4	0	0	0	4	0												
Maine																		0	0	3	0	0	0	3	0				
Maryland *																													
Massachusetts										0	0	S3	0					0	0	6	0	0	0	3	0	0	0	4	0
Michigan *																													
Minnesota *																													
Mississippi										0	0	?	0																
Missouri																						0	12	4	0				
Montana										0	0	2	0									0	1	3	0				
Nebraska *																													
Nevada																													
New Hampshire																		0	0	4	0	0	0	2	0	0	0	6	4
New Jersey *																													
New Mexico										0	1	3	0																
New York												4								5									
North Carolina	1	1	0	0	3													5	E100	5	0			4					
North Dakota *																													
Ohio *																													
Oklahoma *																													
Oregon																													
Pacific Area *																										0	0	5	4
Pennsylvania *																													
Puerto Rico *																													
Rhode Island																		0	0	4	0								
South Carolina *																													
South Dakota *																													
Tennessee *																													
Texas										0	2	?	0																
Utah																													
Vermont																										0	0	4	3
U.S. Virgin Is. *																						0	0	2	0				
Virginia *																													
Washington																										0	0	6	5
West Virginia *																													
Wisconsin *																													
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
S Sandstorm
E Estimated

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

FEBRUARY 1963

Major floods occurred in California, Nevada, Idaho, Oregon, Washington, and Montana early in February. Hardest hit were the basins of the American, Yuba, and Truckee Rivers where flood peaks in many areas reached alltime highs. Seven western counties in Nevada were declared disaster areas by the President, where damage to farms, homes, businesses, roads, and public utilities was estimated to be in excess of $3 million. Near record flooding occurred in several basins in southern Idaho.

ST. LAWRENCE DRAINAGE

Lake Erie.--The snow cover over the Lake Erie Drainage averaged from 6 to 9 inches, with a water equivalent ranging from 0.60 to 0.95 inch. The ground was frozen to depths of 48 to 60 inches.

This was the 9th consecutive month with the precipitation total below normal. It was the coldest winter of record at Fort Wayne, Ind. The average temperature for the winter months, December-January-February, this season was 19.3° compared to the previous low of 20.3° for the winter of 1935-36. An alltime low reading of -18° occurred at Fort Wayne, Ind., during February. The previous alltime low was -17° on February 2, 1951.

ATLANTIC SLOPE DRAINAGE

Ice conditions on rivers in Maine during February were mostly thin, even though below average temperatures occurred during the month. This was due to the heavy snow and above average flows. In headwater areas of the Penobscot River up to 53 inches of snow was reported on the ground, with an average water content of 9.9 inches. There was no frost in the ground.

In the Lehigh River Basin, snow cover on February 28 averaged 20 inches north of the Blue Mountain and 3 inches south of the ridge. At Lehighton, Pa., the river was frozen over during the month except from the 11th to the 13th. In the Lackawaxen River Basin, the snow cover ranged from 7 inches at Hawley to 24 inches at Pleasant Mount, Pa.

Streams in the Susquehanna River Basin in Pennsylvania were frozen over throughout the month with ice thickness ranging from 12 to 21 inches. Snow cover at the end of the period averaged 10 inches over the basin with an average density of approximately 25 percent.

Minor flooding occurred on the Cape Fear and Neuse Rivers in North Carolina between the 14th and the 22d. This rise was due to heavy precipitation on the 11th and again on the 19th and 20th. No damage resulted.

Two sharp rises occurred on the Rocky River at Norwood, N. C., during the month. It is estimated that the second rise exceeded flood stage by about 1 foot on the 20th. This rise was due to about 1 inch of rainfall. No damage was reported.

The minor flooding on the Ocmulgee, Oconee, and Altamaha Rivers in Georgia in the beginning of the month was due to heavy rainfall from January 18-25. The rainfall averaged 5.7 inches per station. Minor flooding occurred on the Satilla River at Atkinson, Ga., from the 26th to the 28th. Only nominal damage resulted as only bottom lands were affected.

The flooding on the Ogeechee River at Dover, Ga., from January 27 to February 4 was due to heavy rainfall from January 18 to 25. Rainfall amounts ranging up to near 2.5 inches in a few places were reported in the Ogeechee and Savannah Basins. No damage is known to have occurred. Minor flooding occurred on February 25 and 26 in the Savannah Basin.

EAST GULF OF MEXICO DRAINAGE

The flooding on the Apalachicola River at Blountstown, Fla., from the 13th to the 25th was due to heavy rainfall on the 11th and 12th. Rainfall totals of 2 to 3 inches was reported. Additional rainfall on the 19th slowed down the recession. Only timberland areas were inundated. No damages were reported in the flooded area around Blountstown where high water, though halting operations in lower areas, enables shifting work crews to higher elevations without stoppage in operations for the lumber industry.

Minor flooding occurred on the Choctawhatchee River at Caryville, Fla., from the 15th to the 16th, due to heavy rainfall reported over southeast Alabama on the morning of the 12th. Damages reported were negligible.

Minor flooding occurred on the Pearl River at Bogalusa, La., on the 22d and 23d from heavy rainfall (1.5 inches) on the 18th. The normal stage for the Pearl River at Bogalusa, La., is within a few feet of established flood stage. No damage was reported from the overflow.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--As in January, the temperature and precipitation during February averaged below to much below the long term mean in the Upper Mississippi Basin. This was a marked difference from 1 year ago when snowfall was in excess of 15 to 28 inches.

A comparison of snow depths in the Upper Mississippi Basin on February 28 with that of other years is given in the following table:

COMPARATIVE SNOW DEPTHS (INCHES)

STATION	1963	1962	1961	1960	1959	1958	1957	1956	1955
Minnesota									
Bemidji	4	24	5	5	4	T	14	22	25
International Falls	13	23	14	11	17	T	15	12	--
Duluth	10	23	8	17	9	3	22	--	--
Alexandria	2	17	0	4	1	0	4	12	10
New Ulm	2	17	0	T	T	0	0	6	7
Minneapolis	3	24	0	2	0	0	T	7	6
Rochester	3	13	2	3	13	0	T	6	1
Wisconsin									
Park Falls	16	33	6	17	10	3	16	20	--
Wausau	7	30	1	5	9	0	1	7	--
Portage	6	24	0	4	10	T	0	T	--

Missouri Basin. --Abnormally warm weather caused rapid thawing of snow and heavy runoff in the upper Missouri Basin from the 3d to the 6th. This resulted in the breakup of ice on the Missouri River and an ice jam to form south of Townsend, Mont. Due to the high level of the water back of Canyon Ferry Dam, ice could not move downstream and water was forced into an irrigation ditch to the south of town. The water overflowed from the ditch into a residential area. Some basements were flooded, but damage was mostly light.

The flooding on the Gallatin River near Logan, Mont., from the 3d to the 6th was due to heavy runoff from melting snow and an ice jam. Overflow water from ice jam flooded the town of Logan and surrounding valley, covering roads and destroying the bridge.

Ice jams and localized flooding occurred on the Yellowstone River from Billings, Mont., downstream to the vicinity of Hysham, Mont., during the period from the 2d to the 12th. Flooding was confined to ranch- and farmlands near the river. Flood damage was localized near the New South Bridge at Billings and at several points downstream. The Whitlock Bridge across the Clark Fork River, 4.5 miles south of Belfry, Mont., was washed out on the 4th due to ice jams and the resulting flooding.

At the close of February, the snow cover was generally an inch or less deep across South Dakota from the Black Hills to northwest Iowa. Rivers were low throughout the month and ice covered.

The ice in the Kansas and Marais Des Cygnes Basins in Kansas generally broke up and moved out during the middle and latter part of the month without any appreciable effect on river stages. This was the driest February in north-central Kansas in 77 years. Monthly precipitation ranged from about 1/4 inch in the upper Big Blue River Valley and generally averaged less than 1/10 inch elsewhere in the State.

Smaller rivers and streams in Missouri were frozen over most of the month. At the end of February there was 1 to 2 inches of snow on the ground in the Chariton Basin, 1/2 to 3 inches in the Grand Basin, 1 to 3 inches in the Nishnabotna and Platte Basins, and just a trace in the Nemaha Basin. Frozen topsoil at the end of February, especially in the northeast portion of the State, threatened heavy runoff in the event of heavy rain.

Ohio Basin. --The ice on the Allegheny River ranged from 8 to 24 inches thick at the end of the month. The snow cover varied from 6 to 28 inches in depth with a water content of 4 to 7 inches in the headwater areas. The snow cover over the Monongahela and upper Ohio Basin varied from a trace to 10 inches.

The Scioto River above Columbus, Ohio, and the Sandusky River were frozen solid the entire month. From Columbus downstream, the Scioto alternately froze over or had an open channel with shore ice throughout the month. Snowfall during the month averaged a little above the long-term average; however, precipitation averaged less than 40 percent of normal.

The Ohio River from above the mouth of the Kentucky River to Greenup, Ky., (Dam 30) was practically full of stationary ice from 4 to 8 inches thick on February 1, with little or no river traffic. The ice broke up in the reach from Cincinnati, Ohio, upstream on the 4th, and in the reach below on the 5th. Heavy damage resulted to boats and harbors at Cincinnati. By the 6th very little ice remained in the Ohio River. Normal river traffic was resumed on the 7th and 8th. Light shore ice formed again on the mornings of the 22d and 27th; however, no impediment to traffic resulted.

Light flooding occurred on the Little Pigeon River at Sevierville, Tenn., on the 3d. No damages were reported.

WEST GULF OF MEXICO DRAINAGE

General rains (2 to 3 inches) during the 48-hour period ending on the morning of the 19th caused moderate rises in the upper and middle portions of the Calcasieu with light flooding at Hineston, La., from the 21st to the 24th. The Calcasieu rose 7.7 feet in the extreme upper portion beginning on the 18th and exceeded flood stage by 0.6 foot at Hineston on the 22d. Downstream at Oakdale, it rose 5 feet to slightly above bankfull on the 26th, while at Kinder it rose 8.2 feet, reaching within 1 foot of bankfull stage by the 24th. The minor flooding was confined to the lowlands near the river and caused no damages.

Great Basin. --Minor flooding occurred in streams in Utah and Nevada from the heavy rain on January 31 and February 1. The most extensive damage from the flooding in Utah occurred in Utah County, where raging waters cut Provo City water lines in the South Fork of Provo Canyon above Vivian Park.

The Truckee, Susan, Carson, and Walker Rivers in Nevada rose to flood stage near midnight on January 31 and continued into February. Considerable damage occurred in many residential sections and in the downtown sections of Reno. The Truckee River cut Derby Dam about 20 miles downstream from Reno, and took out the approach to the Southern Pacific Railroad Bridge about 25 miles downstream from Reno. The Susan River caused damage to U. S. Highway 395 in the vicinity of Susanville, Calif. Piute Creek in Susanville caused some flooding in the town of Susanville. Flooding along the Carson and Walker Rivers was confined mostly to agricultural lands. The Carson River caused some damage to the approaches to the Cradlebaugh Bridge on U. S. 395 between Carson City and Minden, Nev.

PACIFIC SLOPE DRAINAGE

California Coast Drainage Basins. --A major storm system moved through northern and central California January 29 through February 1, ending one of the longest midwinter dry spells on record in California. The storm brought significant amounts of rain to northern and central California and caused important rises on most rivers and streams. The greatest storm totals were in the Yuba and American River Basins where amounts over 12 and up to 21 inches were recorded, with 8- to 13-inch amounts over the Feather River Basin above Oroville. In the Clear Lake area amounts of 12 to 15 inches were recorded. The total storm amounts were generally much less than in 1955. However, the concentration of precipitation was high as indicated by the record peak flows that developed on the Yuba and American Rivers from low base flows. On the Yuba River at Englebright Dam, a new record flow of 150,000 c.f.s. was reached, several thousand c.f.s. above the December 1955 peak. At Folsom Reservoir, a new record 2-hour peak inflow of 240,700 c.f.s. was reported, about 16,000 c.f.s. higher than the December 1955 inflow, which was the record high up to that time.

The Feather River above Oroville reached a peak stage of 73.4 feet, compared with a peak stage of 76.8 feet in December 1955. This latter peak was reached from a base stage of near 45 feet, while the February 1963 peak came from a base stage of around 15 feet. The total volume of flow was tremendously greater in December 1955 on all streams. Damage to unmovable items such as roads, tracks, and buildings will likely run into several millions of dollars in the Sacramento-Northern San Joaquin drainage.

The flooding on the Eel River at Fernbridge, Calif., from January 31 to February 2 was due to 6 to 8 inches of rain in a period of 24 to 36 hours. Runoff was heavy and began immediately as the ground was frozen. The river rose sharply and crested at 22.95 feet on the morning of the 1st, nearly 6 feet above flood stage. Much of the area was under 6 to 8 feet of water and many cattle would have been drowned without the timely warnings. All farm machinery was moved out of the fields and several contractors moved heavy tractors and earth moving equipment to high ground.

Columbia Basin. --February was abnormally mild over the entire Columbia Basin. In the western half of the basin it was the warmest February on record, and in the eastern sections it was the second and third warmest of record. Average monthly temperatures ranged from 6° to 12° above normal throughout the basin.

Heavy precipitation during the first week of February accompanied by warm temperatures caused ice-jam flooding in southern Idaho. This warming trend gradually spread northward, bringing flooding to interior basins of Oregon, Washington, northern Idaho, and western Montana. Below-normal temperatures during January had frozen the ground to depths of from 2 to 3 feet and caused ice to form on streams to considerable thickness. Runoff was heavy and ice in streams backed up behind bridges and culverts to cause overflow. Many bridges were destroyed because of ice-water backups. About 1200 families were driven from their homes in 12 counties of Idaho. Hardest hit was Bonneville and Bannock Counties. Damage was heavy to roads, highways, bridges, culverts, utilities, irrigation canal systems, and personal property.

Ice-jam flooding occurred on numerous small creeks in the Willamette Drainage and west of the Coast Range. Substantial streamflow rises from rainfall runoff, accentuated by ice jamming, produced considerable flooding in tributaries of the Deschutes, John Day, Unatilla, and Washington streams centering the Bonneville Pool during the period from the 3d to the 5th. Heavy rain during the night of the 2d caused the Palouse River to flood the City of Colfax, Wash. Considerable damage resulted to the Corps of Engineers channel improvement project in the Colfax area. Ice-jam flooding occurred in the Crab and Wilson Creek drainages of central Washington.

Grays Harbor and Puget Sound. --Heavy, warm rains and melting snow in the mountains on the 1st, 2d, and 3d caused strong rises on the 3d and 4th and in all western Washington streams. Light flooding resulted on the Chehalis River at Centralia and Grand Mound, Wash. The Snohomish River just barely reached flood stage at Snohomish on the 4th. No damage occurred.

Precipitation in Washington, after the first week, was mostly light. Snow cover in the mountains is the least on record. February was abnormally warm.

FLOOD STAGE DATA

(All dates in February unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Neuse: Smithfield, N. C.	13	22	22	13.0	22
Kinston, N. C.	14	Jan. 23	2	16.9	Jan. 29
Cape Fear: Lock No. 2, Elizabethtown, N. C.	20	(14 (22	15 22	20.8 20.9	14 22
Rocky: Norwood, N. C.	16	20	20	E17.0	20
Savannah: Clyo, Ga.	11	25	26	11.2	26
Ogeechee: Dover, Ga.	7	Jan. 27	4	8.8	Jan. 30
Ocmulgee: Lumber City, Ga.	15	Jan. 31	2	15.5	1
Oconee: Mt. Vernon, Ga.	16	Jan. 26	1	18.4	Jan.28,29
Altamaha: Charlotte, Ga.	15	Jan. 29	6	18.8	1
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	13	25	18.7	17
Choctawatchee: Caryville, Fla.	12	15	16	12.3	15
Pearl: Bogalusa, La.	15	22	23	15.3	22
MISSISSIPPI SYSTEM					
Ohio Basin					
Little Pigeon: Sevierville, Tenn.	9	3	3	10.8	3
WEST GULF OF MEXICO DRAINAGE					
Calcasieu: Hineston, La.	12	21	24	12.6	22
PACIFIC SLOPE DRAINAGE					
California Coast Drainage Basins					
Sacramento: Moulton Weir, Calif.	77	1	3	79.4	2
Colusa Weir, Calif.	62	1 10	5 14	66.2 63.4	2 11
Tisdale Weir, Calif.	45	1	18	48.9	3

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
PACIFIC SLOPE DRAINAGE (Cont'd.)	Ft.			Ft.	
California Coast Drainage Basins (Cont'd.)					
Sacramento (Cont'd.): Fremont Weir, Calif.	33	1	18	38.5	2
Sacramento Weir, Calif.	29	1	7	32.3	1
Russian: Guerneville, Calif.	29	Jan. 31	2	40.5	1
Healdsburg, Calif.	19	Jan. 31	1	20.0	1
Eel: Fernbridge, Calif.	17	Jan. 31	2	22.95	1
Columbia Basin					
Henrys Fork: Rexburg, Idaho	E	E	7	10.0	6
Portneuf: Pocatello, Idaho	6	1	6	10.0	4
Salmon: Salmon, Idaho	7	1	4	8.65	1
Clearwater: Spalding, Idaho	18	3	4	27.8	4
Santiam: Jefferson, Oreg.	15	E	4	15.3	3
South Yamhill: Whiteson, Oreg.	38	3	5	40.9	4
Pudding: Aurora, Oreg.	20	4	6	20.7	5
Tualatin: Dilley, Oreg.	12	2	6	14.0	3
Farmington, Oreg.	29	5	9	31.5	6
Yakima: Parker, Oreg.	10	5	5	10.3	5
Johnson Creek: Sycamore, Oreg.	E	E	E	E8.8	E
Grays Harbor					
Chehalis: Centralia, Wash.	63	E	4	64.8	4
Grand Mound, Wash.	14	3	4	14.7	4
Puget Sound					
Snohomish: Snohomish, Wash.	25	4	4	25.0	4

* Provisional
E Estimated

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	ALBANY, N. Y. 1006 MB						ALBUQUERQUE, N. MEX. 839 MB						AMARILLO, TEXAS 892 MB						ANCHORAGE, ALASKA 1000 MB						ANNETTE, ALASKA 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	86	-11.8	68	257	4.1	28	1,619	- .1	71	47	2.1	28	1,095	- .3	72	287	3.7	28	29	- 5.6	76	350	4.3	28	37	6.4	83	131	7.2
1000	28	130			253	5.6	28	190					28	170					28	29			22	3.3	28	76			136	12.2
950	28	526	-11.0	61	280	11.9	28	610					28	589					28	436	- 3.1	62	20	11.3	28	494	5.0	75	150	19.8
900	28	940	-12.4	63	291	19.4	28	1,052					28	1,033					28	862	- 3.4	57	48	9.3	28	937	2.4	77	163	22.5
850	28	1,376	-13.3	64	293	21.4	28	1,516					28	1,490	4.1	50	310	7.0	28	1,317	- 5.2	58	91	10.5	28	1,397		78	173	21.4
800	28	1,837	-14.1	59	288	25.1	28	2,005	2.0	48	335	7.6	28	1,981	2.5	45	321	9.7	28	1,781	- 8.1	60	118	13.8	28	1,881	- 2.4	77	180	20.8
750	28	2,327	-14.6	56	282	29.0	28	2,524	- .8	49	322	14.0	28	2,499	- .1	42	315	12.8	28	2,286	-10.9	57	133	15.5	28	2,393	- 5.2	74	188	21.0
700	28	2,848	-16.0	53	275	33.0	28	3,072	- 3.6	47	314	17.1	28	3,050	- 3.1	41	306	13.2	28	2,814	-13.7	51	141	15.0	28	2,931	- 8.1	71	196	22.0
650	28	3,402	-18.3	50	274	36.1	28	3,654	- 7.0	45	310	17.7	28	3,629	- 6.8	42	300	13.8	28	3,371	-17.2	44	150	14.4	28	3,499	-11.6	67	204	22.3
600	28	4,000	-21.2	49	267	39.1	28	4,275	-10.5	41	310	21.2	28	4,254	-10.4	41	291	16.9	27	3,977	-21.1		159	14.4	28	4,113	-15.5	62	205	24.9
550	28	4,637	-24.6	45	265	44.5	28	4,937	-15.0	40	305	25.3	28	4,913	-14.5	40	294	21.6	27	4,609	-25.6		168	14.6	28	4,760	-20.0	59	212	23.5
500	28	5,327	-28.8	43	263	48.8	28	5,653	-20.0	36	298	29.5	28	5,634	-19.3	39	294	28.4	27	5,298	-30.4		174	16.5	28	5,465	-24.8	54	215	25.6
450	28	6,070	-33.5	43	264	48.4	28	6,420	-25.4		299	31.5	28	6,398	-25.5		290	32.4	27	6,031	-35.8		177	21.8	28	6,220	-30.3	48	218	29.7
400	28	6,893	-38.8		262	49.9	28	7,272	-31.4		303	30.7	28	7,251	-32.4		290	34.6	27	6,848	-41.5		181	22.5	28	7,052	-36.6	48	222	32.6
350	28	7,799	-44.8		264	54.4	28	8,204	-38.5		307	29.7	28	8,178	-39.8		289	38.1	27	7,742	-47.4		186	22.5	28	7,964	-43.4		225	38.5
300	28	8,817	-50.7		262	60.0	28	9,245	-46.7		303	34.0	28	9,212	-48.0		287	41.6	27	8,749	-52.7		187	22.7	28	8,983	-51.4		228	35.9
250	28	9,993	-54.6		267	60.0	28	10,432	-54.7		298	39.8	28	10,392	-55.9		288	43.9	27	9,922	-52.9		198	19.6	26	10,148	-58.4		235	38.3
200	28	11,419	-54.8		266	62.6	28	11,842	-58.8		296	44.9	27	11,806	-59.2		293	49.9	27	11,372	-50.1		202	16.5	24	11,541	-58.7		241	22.5
175	28	12,274	-54.2		265	59.8	27	12,690	-58.8		296	48.4	27	12,643	-59.0		293	52.7	27	12,246	-49.4		201	14.0	23	12,379	-56.7		245	20.8
150	28	13,263	-54.1		265	57.1	27	13,655	-60.0		292	48.0	27	13,610	-59.6		291	49.9	27	13,258	-48.6		206	12.6	23	13,359	-55.5		255	19.4
125	28	14,432	-55.0		263	49.2	26	14,793	-63.6		291	45.1	27	14,741	-62.7		291	49.0	25	14,461	-49.7		206	9.9	23	14,520	-55.6		264	15.5
100	28	15,851	-57.4		260	47.8	24	16,153	-67.3		298	43.3	27	16,107	-65.0		291	45.1	25	15,918	-50.8		205	10.3	22	15,935	-57.3		275	11.1
80	28	17,256	-58.2		261	45.5	21	17,485	-67.4		299	34.6	26	17,456	-67.1		291	42.4	25	17,368	-52.1		202	7.0	22	17,342	-58.3		292	6.2
70	28	18,107	-57.2		262	40.8	20	18,289	-67.6		303	29.1	26	18,234	-52.9		291	39.4	25	18,234	-52.9		195	5.8	20	18,190	-58.5		320	5.6
60	28	19,078	-55.8		260	35.8	20	19,218	-66.6		301	23.7	25	19,196	-65.3		291	35.0	25	19,223	-53.5		184	4.5	19	19,156	-58.6		15	5.4
50	27	20,246	-54.7		250	30.5	18	20,326	-65.7		297	18.5	25	20,317	-63.5		290	33.8	25	20,395	-53.9		128	3.1	18	20,301	-58.6		46	10.1
40	27	21,677	-53.1		246	23.9	18	21,692	-62.7		288	19.8	19	21,683	-61.0		284	34.0	25	21,827	-54.1		120	6.4	17	21,716	-57.1		56	12.0
30	27	23,534	-52.9		235	19.6	16	23,493	-58.1		278	22.3	19	23,489	-56.7		277	30.3	25	23,672	-54.5		97	7.6	14	23,534	-56.2		59	15.9
25	26	24,706	-53.4		240	18.3	16	24,650	-55.2		270	23.3	18	24,651	-54.3		276	32.8	23	24,848	-54.4		90	11.7	13	24,684	-56.0		62	15.0
20	26	26,138	-54.3		236	13.6	16	26,086	-52.0		266	22.2	17	26,090	-52.0		278	32.4	22	26,276	-54.7		93	13.0	13	26,101	-56.4			
15	21	27,985	-54.2		246	11.9	15	27,952	-50.7		276	24.1	14	27,964	-51.2		267	25.1	12	28,111	-53.8				11	27,929	-57.5			
10	10	30,545	-52.5										8	30,611	-49.2										9	30,473	-58.9			

Standard pressure surface (mb.)	ATHENS, GA. 989 MB						BARROW, ALASKA 1021 MB						BARTER IS., ALASKA 1019 MB						BETHEL, ALASKA 1002 MB						BISMARCK, N. DAK. 957 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	246	- .2	72	356	2.5	28	8	-27.0	61	74	3.3	28	15	-24.9	68		.0	28	39	-12.1	81	13	10.1	28	505	-11.3	71	358	2.7
1000	28	158					28	160	-22.4	63	81	6.2	28	151	-22.8	69	101	1.4	28	55			18	13.4	28	169					
950	28	571	1.5	52	323	6.0	28	544	-19.5	62	81	8.0	28	535	-18.5	68	107	1.2	28	449	- 7.5	66	48	15.9	28	567	-11.9	67	336	3.9
900	28	1,008	1.9	53	311	9.3	28	941	-17.4	57	86	8.0	28	935	-16.6	68		.0	28	872	- 7.6	59	63	12.2	28	980	- 9.1	62	318	11.7
850	28	1,470	1.3	54	287	13.8	28	1,370	-17.1	55	77	6.2	28	1,365	-15.9	66	288	.8	28	1,316	- 8.9	58	49	11.9	28	1,425	- 7.9	59	320	17.1
800	28	1,957	- .4	52	273	20.2	28	1,824	-18.0	51	84	4.3	28	1,822	-16.4	62	338	.8	28	1,785	-10.0	50	42	9.3	28	1,896	- 8.3	53	322	22.5
750	28	2,471	- 1.6	46	269	24.3	28	2,306	-19.8	46	55	2.3	28	2,306	-17.7	58	255	2.1	28	2,279	-12.5	45	39	10.7	28	2,393	- 9.4	52	318	29.7
700	28	3,020	- 4.2	42	269	29.5	28	2,815	-22.1	44	331	1.7	28	2,820	-20.2	56	256	4.1	28	2,805	-15.3	44	41	8.5	28	2,928	-11.8	52	317	35.4
650	28	3,598	- 7.5	41	273	35.0	28	3,357	-24.6	40	291	2.5	28	3,363	-23.0	54	258	6.0	28	3,356	-18.8	40	42	7.4	28	3,488	-14.7	51	319	40.8
600	28	4,220	-10.9	40	266	43.5	28	3,937	-28.0		283	5.2	28	3,948	-26.5	51	254	8.0	28	3,954	-22.5	41	38	6.6	28	4,096	-17.8	51	319	45.7
550	28	4,882	-14.6		262	42.7	28	4,554	-31.8		284	7.2	28	4,568	-30.6	49	257	9.3	28	4,585	-26.6	39	24	6.4	28	4,736	-21.7	48	316	54.8
500	28	5,600	-19.5		265	45.9	28	5,225	-36.2		278	9.5	28	5,243	-35.2		274	11.7	28	5,270	-31.4	38	4	4.5	28	5,438	-26.5	45	318	53.4
450	28	6,374	-25.1		262	51.9	28	5,947	-41.0		276	11.7	28	5,966	-40.1		257	16.1	28	6,003	-36.4		344	6.2	28	6,180	-31.9		316	54.0
400	28	7,220	-31.4		264	56.5	28	6,744	-46.1		283	13.4	28	6,764	-45.4		256	19.0	28	6,816	-42.1		320	5.4	28	7,015	-38.1		316	54.2
350	28	8,152	-38.2		256	66.1	28	7,621	-51.0		277	15.5	28	7,645	-50.2		258	22.5	28	7,708	-47.9		314	6.6	28	7,921	-44.8		321	54.0
300	28	9,196	-45.9		255	75.2	28	8,615	-54.5		265	17.9	28	8,642	-53.9		259	24.7	28	8,713	-52.4		292	4.3	28	8,935	-52.0		323	52.7
250	28	10,389	-53.6		258	82.4	28	9,784	-53.3		264	18.3	28	9,812	-53.4		266	22.0	28	9,888	-53.1		224	5.6	28	10,100	-57.5		327	54.0
200	28	11,809	-57.7		260	87.0	28	11,233	-49.8		268	17.7	28	11,258	-50.3		273	20.2	28	11,337	-49.6		218	4.7	28	11,505	-57.5		319	46.8
175	28	12,651	-57.5		261	77.7	28	12,107	-49.3		267	18.8	28	12,130	-49.7		273	18.7	28	12,214	-48.6		201	7.0	28	12,349	-56.9		318	42.9
150	28	13,622	-59.4		261	75.2	28	13,118	-49.0		268	19.4	28	13,139	-49.7		286	18.5	28	13,227	-48.4		190	6.0	27	13,325	-56.7		321	38.3
125	28	14,756	-62.2		261	65.3	28	14,315	-48.9		271	20.2	28	14,332	-49.7		289	18.8	28	14,426	-48.9		187	6.8	27	14,478	-57.7		322	35.9
100	28	16,127	-64.6		263	54.8	28	15,780	-49.0		277	19.6	28	15,789	-50.5		298	19.2	28	15,887	-50.3		168	8.0	27	15,881	-59.2		318	32.6
80	27	17,487	-64.7		263	44.5	28	17,242	-49.7		291	20.4	28	17,244	-50.6		305	17.9	28	17,340	-51.1		164	6.8	27	17,275	-60.2		328	28.2
70	27	18,310	-64.6		262	40.0	28	18,115	-50.1		285	16.7	28	18,111	-50.5		312	19.0	28	18,210	-51.7		154	6.4	27	18,105	-60.6		335	22.0
60	27	19,248	-62.8		261	30.1	27	19,122	-50.2		282	14.6	28	19,119	-50.4		319	18.5	28	19,206	-52.1		139	6.8	27	19,066	-60.9		340	18.7
50	27	20,377	-60.4		259	25.8	27	20,312	-50.4		288	13.4	27	20,318	-50.8		319	16.5	28	20,385	-52.4		121	8.0	26	20,208	-59.8		349	16.1
40	27	21,780	-56.7		259	20.6	27	21,766	-50.9		292	11.7	27	21,769	-51.3		325	12.8	28	21,827	-52.7		109	8.5	25	21,610	-58.5		4	12.0
30	25	23,605	-56.0		261	11.9	26	23,635	-51.5		303	11.3	26	23,634	-52.0		333	11.9	28	23,681	-53.4		94	12.0	25	23,434	-55.2		31	8.4
25	24	24,766	-55.1		256	9.9	26	24,818	-51.9		320	9.5	25	24,820	-53.3		342	8.2	26	24,848	-53.7		91	14.4	25	24,599	-54.4		29	4.9
20	23	26,197	-53.7		265	12.0	23	26,249	-52.9		319	7.8	20	26,263	-53.4		352	9.5	24	26,284	-54.0		84	14.8	25	26,031	-53.7		310	1.4
15	9	28,049	-50.9				21	28,123	-53.4		319	9.7	16	28,130	-53.8		354	8.9	17	28,149	-54.3		99	18.1	20	27,859	-52.9		254	3.9
10							13	30,748	-54.0		322	5.8																		
7							7	32,932	-57.1																					
5							5	35,027	-56.2																					

Standard pressure surface (mb.)	BOISE, IDAHO 920 MB						BROWNSVILLE, TEXAS 1018 MB						BUFFALO, N. Y. 990 MB						BURRWOOD, LA. 1018 MB						CANTON IS., PACIFIC AREA 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	868	3.2	77	140	4.7	28	7	11.2	87	274	1.4	28	218	- 8.6	68	233	7.6	28	3	9.4	83	15	7.0	28	4	26.3	76	48	10.7
1000	28	186					28	152	13.2	78	28	.6	28	140					28	154	10.0	71	15	6.0	28	101	25.5	78	61	11.3
950	28	606					28	584	12.9	68	151	3.5	28	536	- 9.5	70	247	15.0	28	580	8.6	63	327	5.6	28	547	21.8	82	88	14.8
900	28	1,047	5.2	62	141	3.1	28	1,038	11.9	55	228	3.9	28	954	-11.3	72	257	20.4	28	1,025	7.6	52	300	8.5	28	1,021	18.5	80	93	17.9
850	28	1,514	4.4	54	258	3.3	28	1,515	10.7	48	281	4.9	28	1,391	-12.5	73	266	23.7	28	1,495	6.3	48	291	10.9	28	1,510	16.7	56	93	19.2
800	28	2,005	1.5	52	265	9.1	28	2,019	8.6	42	277	8.4	28	1,853	-13.4	70	273	25.5	28	1,992	5.1	43	286	15.2	28	2,026	16.3	42	90	19.0
750	28	2,522	- 1.6	51	280	12.0	28	2,548	5.6	40	260	11.9	28	2,344	-15.0	66	271	30.3	28	2,516	3.2	42	275	20.4	28	2,566	12.7	26	87	17.1
700	28	3,068	- 4.6	51	289	13.8	28	3,111	2.8	38	274	15.7	28	2,863	-17.1	62	274	33.8	28	3,073	- .1	42	270	23.3	28	3,146	9.7		83	15.9
650	28	3,644	- 8.1	48	289	15.3	28	3,704	- 1.1	36	277	19.8	28	3,417	-19.3	61	273	36.7	28	3,660	- 3.4	40	270	27.6	28	3,754	6.3		83	16.7
600	28	4,266	-12.1	44	287	17.1	28	4,341	- 4.7		270	25.6	28	4,009	-21.8	56	273	41.6	28	4,292	- 7.1	35	266	34.8	28	4,409	2.5		86	16.7
550	28	4,920	-16.7	45	294	19.6	28	5,014	- 9.3		269	29.0	28	4,645	-25.1	52	271	45.3	28	4,960	-11.4		262	37.7	28	5,105	- 1.5		86	16.7
500	28	5,635	-21.9	44	301	21.4	28	5,752	-14.4		271	32.6	28	5,333	-29.0	48	270	51.9	28	5,689	-16.5		262	43.3	28	5,861	- 5.8		82	16.5
450	28	6,396	-27.4	41	297	23.3	28	6,534	-19.9		270	39.1	28	6,079	-33.9		265	56.0	28	6,466	-22.1		261	49.0	28	6,676	-10.7		85	17.3
400	28	7,240	-33.7		302	26.0	28	7,406	-26.2		271	47.4	28	6,897	-39.3		266	61.8	28	7,328	-28.4		259	56.3	28	7,577	-16.9		82	16.1
350	28	8,163	-40.9		297	29.3	28	8,359	-32.8		269	57.3	28	7,800	-45.1		268	61.8	28	8,273	-34.8		260	64.1	28	8,566	-23.5		76	12.4
300	28	9,193	-49.0		300	35.6	28	9,428	-40.5		268	68.8	28	8,817	-51.0		265	69.4	28	9,332	-41.8		259	75.2	28	9,675	-31.9		85	9.3
250	28	10,368	-57.2		302	41.8	28	10,648	-48.6		270	71.3	28	9,993	-54.3		266	69.4	28	10,546	-49.9		260	79.7	28	10,937	-42.3		74	7.8
200	28	11,759	-62.3		309	36.1	27	12,086	-56.5		272	71.5	28	11,422	-54.8		261	66.3	28	11,984	-55.3		262	83.9	28	12,407	-54.4		101	3.5
175	28	12,585	-61.2		303	37.9	27	12,927	-59.7		271	68.4	28	12,278	-54.1		263	60.8	28	12,830	-57.9		265	79.3	28	13,249	-61.3		117	2.1
150	27	13,542	-59.5		302	35.9	27	13,882	-63.9		271	71.9	28	13,268	-54.2		263	58.7	28	13,794	-61.6		261	76.9	28	14,189	-68.6		213	2.7
125	27	14,679	-61.1		304	32.1	26	14,986	-68.8		272	60.4	28	14,436	-55.1		263	55.0	28	14,911	-65.8		263	64.7	28	15,261	-76.4		157	1.6
100	25	16,055	-63.3		318	27.4	25	16,306	-73.8		274	47.6	28	15,855	-57.0		263	47.8	26	16,252	-69.5		265	52.7	27	16,523	-82.9		71	4.5
80	24	17,415	-64.9		323	21.8	24	17,610	-73.0		277	27.2	28	17,266	-57.6		264	36.5	24	17,578	-69.1		266	41.8	26	17,776	-79.5		352	1.4
70	22	18,217	-64.5		335	19.0	23	18,406	-70.7		275	19.4	28	18,106	-58.5		262	35.6	23	18,387	-68.2		263	34.2	26	18,538	-76.8		289	2.5
60	20	19,161	-63.8		344	15.2	22	19,316	-68.1		272	16.1	28	19,079	-57.3		262	35.4	22	19,307	-65.6		261	27.6	26	19,427	-74.7		262	.6
50	20	20,281	-63.1		7	13.8	21	20,421	-63.4		265	11.3	25	20,240	-54.5		261	28.2	21	20,429	-61.4		259	19.2	25	20,497	-70.4		90	16.1
40	16	21,674	-60.5		21	14.4	21	21,807	-59.1		257	10.9	25	21,676	-52.8		257	20.8	20	21,825	-58.3		255	13.8	25	21,838	-65.3		89	46.2
30	14	23,479	-58.1		47	12.6	21	23,625	-56.2		270	7.2	25	23,542	-51.7		244	12.6	20	23,645	-56.5		298	3.5	25	23,619	-58.8		91	62.8
25	13	24,627	-57.0		32	8.9	21	24,789	-54.4		304	.8	25	24,723	-52.4		250	13.2	19	24,798	-54.6		50	7.6	24	24,770	-56.5		91	66.3
20	10	26,034	-56.0				20	26,226	-52.9		79	4.1	24	26,168	-52.6		244	8.2	19	26,231	-52.9		66	6.8	22	26,196	-52.0		90	69.9
15							19	28,089	-50.1		165	1.9	24	28,024	-53.2		253	11.5	18	28,100	-49.3		88	8.2	21	28,098	-44.0		94	46.4
10							15	30,784	-42.6		229	4.7	18	30,677	-50.9				17	30,804	-42.5		252	9.9	20	30,826	-42.1		81	11.5
7							14	33,257	-32.0		229	5.8							12	33,233	-34.4		268	24.3	19	33,262	-39.6		74	19.4
5							5	35,665	-24.8										6	35,612	-27.3				16	35,561	-35.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1963

CAPE HATTERAS, N. C. 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	4	4.3	82	359	7.4
1000	28	132	4.9	80	2	9.9
950	28	545	3.9	72	337	7.4
900	28	989	2.3	70	258	7.2
850	28	1,450	.7	67	249	13.0
800	28	1,935	-.8	58	251	20.0
750	28	2,447	-2.5	50	253	25.8
700	28	2,995	-5.0	51	254	31.1
650	28	3,569	-7.7	47	253	36.1
600	28	4,194	-11.3	45	258	42.4
550	28	4,852	-15.2		260	47.4
500	28	5,571	-19.7		260	52.7
450	28	6,338	-24.9		257	58.9
400	28	7,192	-30.8		258	67.6
350	27	8,121	-37.7		258	72.5
300	27	9,168	-44.9		259	89.4
250	27	10,369	-51.8		259	87.8
200	27	11,799	-55.8		263	94.6
175	27	12,646	-57.2		263	84.7
150	27	13,619	-58.5		265	72.3
125	27	14,758	-60.9		262	67.2
100	27	16,136	-63.3		264	51.3
80	27	17,506	-63.1		259	40.0
70	27	18,337	-62.0		259	35.2
60	27	19,284	-60.6		262	27.2
50	27	20,427	-57.6		259	22.2
40	27	21,843	-55.5		248	13.0
30	27	23,680	-55.0		185	4.1
25	26	24,847	-53.9		128	4.9
20	24	26,283	-51.9		86	5.1
15	21	28,164	-49.9		73	2.5
10	19	30,841	-43.7		271	9.7
7	13	33,269	-38.3			
5	5	35,589	-30.4			

CARIBOU, ME. 987 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	191	-17.2	80	270	5.1
1000	28	83				
950	28	473	-15.0	68	276	13.0
900	28	880	-16.2	67	288	15.9
850	28	1,311	-16.1	64	284	20.2
800	28	1,767	-16.4	61	284	23.1
750	28	2,253	-17.6	61	277	25.1
700	28	2,766	-19.6	60	272	27.8
650	28	3,313	-21.8	56	269	32.1
600	28	3,901	-24.6	51	268	36.1
550	28	4,525	-28.1	49	266	43.3
500	28	5,209	-32.0	47	266	46.4
450	28	5,946	-36.5		262	50.1
400	28	6,756	-41.3		260	56.7
350	28	7,656	-46.4		260	62.2
300	28	8,667	-50.5		259	63.9
250	28	9,851	-51.4		258	61.8
200	28	11,301	-51.0		254	56.7
175	28	12,170	-50.7		254	50.5
150	28	13,173	-51.5		251	51.7
125	28	14,355	-52.0		252	48.0
100	28	15,793	-53.6		252	38.5
80	28	17,231	-53.3		246	35.0
70	27	18,096	-53.0		243	32.1
60	27	19,094	-51.4		241	26.4
50	27	20,282	-50.1		237	21.2
40	26	21,736	-50.5		220	15.2
30	24	23,618	-50.7		216	10.5
25	24	24,803	-51.8		211	6.6
20	23	26,240	-53.0		247	2.3
15	20	28,102	-52.5		221	3.5
10	18	30,739	-49.7		275	8.4
7	16	33,079	-46.9		278	17.1
5	11	35,286	-44.3			

CHARLESTON, S. C. 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	23	13	2.8	71	346	3.7
1000	23	155	3.5	67	349	5.2
950	23	576	4.4	62	320	5.8
900	23	1,013	4.3	58	270	7.6
850	23	1,478	3.4	50	260	15.2
800	23	1,969	1.6	44	260	21.8
750	23	2,485	-.4	40	265	29.0
700	23	3,037	-2.8		264	34.4
650	23	3,618	-5.7		260	38.1
600	23	4,246	-9.5		260	43.5
550	23	4,911	-13.9		261	48.2
500	23	5,631	-18.6		261	56.2
450	23	6,402	-23.7		263	63.3
400	23	7,261	-29.7		257	75.8
350	23	8,200	-36.8		255	74.6
300	23	9,250	-44.3		253	79.9
250	23	10,452	-51.6		251	75.8
200	23	11,878	-57.8		259	73.6
175	23	12,717	-59.4		260	68.6
150	22	13,673	-61.0			
125	22	14,800	-63.4			
100	22	16,160	-66.5			
80	21	17,512	-65.9			
70	21	18,330	-64.5			
60	20	19,270	-62.3			
50	19	20,405	-59.3			
40	18	21,815	-57.3			
30	18	23,642	-55.5			
25	16	24,802	-54.9			
20	14	26,245	-52.5		135	8.5
15	10	28,119	-47.4			
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COLD BAY, ALASKA 997 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	30	-1.8	87	3	7.6
1000	28	5				
950	28	410	-3.9	79	9	16.7
900	28	838	-5.6	72	14	14.0
850	28	1,285	-7.3	64	30	13.6
800	28	1,756	-8.7	58	32	14.4
750	28	2,252	-10.7	48	28	13.0
700	28	2,783	-13.3	44	27	12.6
650	28	3,340	-16.5		17	14.0
600	28	3,943	-20.2		29	10.3
550	28	4,579	-24.2		21	5.8
500	28	5,272	-29.1		36	3.1
450	28	6,007	-34.9		27	3.7
400	28	6,828	-41.3		21	4.5
350	28	7,722	-48.0		317	3.3
300	28	8,726	-53.2		244	6.6
250	28	9,895	-54.2		242	8.9
200	27	11,330	-51.2		173	9.3
175	26	12,195	-50.1		175	10.3
150	26	13,203	-49.9		158	11.1
125	26	14,394	-50.1		156	9.5
100	25	15,854	-51.2		148	9.9
80	25	17,301	-52.2		144	8.9
70	25	18,159	-52.8		138	8.9
60	25	19,155	-53.7		129	8.2
50	25	20,324	-54.5		109	9.1
40	23	21,747	-55.0		113	11.1
30	23	23,584	-55.0		98	12.6
25	23	24,748	-54.9		95	13.2
20	23	26,174	-54.8		88	16.5
15	21	28,022	-54.6		77	18.3
10	18	30,616	-54.6		56	20.6
7	15	32,916	-53.9		45	30.9
5	11	35,117	-51.9			

COLUMBIA, MO. 990 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	238	-4.3	72	259	1.6
1000	28	154				
950	28	560	-3.6	59	268	8.7
900	28	986	-3.8	57	286	14.8
850	28	1,437	-3.9	52	294	19.6
800	28	1,915	-5.2	46	296	22.2
750	28	2,418	-7.2	45	298	25.6
700	28	2,956	-9.7	46	302	30.9
650	28	3,522	-12.3	45	300	34.8
600	28	4,134	-15.5	39	298	40.4
550	28	4,779	-19.5	40	295	43.1
500	28	5,488	-23.7	40	293	46.4
450	28	6,241	-29.1		294	47.2
400	28	7,081	-35.3		289	49.7
350	28	7,998	-42.3		287	52.1
300	28	9,023	-49.7		289	53.6
250	28	10,196	-56.5		288	55.0
200	28	11,601	-58.6		285	57.1
175	28	12,443	-57.2		284	52.5
150	28	13,418	-57.6		283	50.3
125	28	14,565	-58.8		283	48.6
100	28	15,959	-60.9		279	40.8
80	26	17,340	-62.4		280	37.5
70	26	18,168	-62.5		280	33.2
60	24	19,120	-62.6		272	27.4
50	23	20,249	-61.4		266	26.8
40	23	21,644	-57.8		263	24.9
30	22	23,470	-54.2		247	25.1
25	22	24,642	-53.0		242	25.5
20	20	26,077	-53.2		242	21.4
15	15	27,942	-52.4			
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DAYTON, OHIO 982 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	297	-7.5	71	244	2.5
1000	28	152				
950	28	554	-7.0	66	242	8.5
900	28	974	-7.7	64	268	12.6
850	28	1,418	-8.6	60	275	15.9
800	28	1,888	-9.7	58	277	20.2
750	28	2,385	-10.8	54	278	24.9
700	28	2,914	-12.6	49	280	28.4
650	28	3,475	-14.9	47	277	33.0
600	28	4,080	-17.8	44	276	37.7
550	28	4,721	-21.6	45	274	42.2
500	28	5,424	-26.1		272	45.9
450	28	6,170	-31.3		269	49.2
400	28	7,004	-37.2		270	53.6
350	28	7,915	-43.4		271	56.2
300	28	8,936	-50.3		272	62.4
250	28	10,111	-55.4		272	60.2
200	27	11,537	-55.7		270	56.9
175	27	12,388	-55.9		267	58.7
150	27	13,367	-56.2		267	55.0
125	27	14,521	-57.9		266	49.7
100	27	15,921	-59.6		269	45.5
80	27	17,312	-60.7		269	35.9
70	26	18,133	-60.8		266	33.8
60	26	19,095	-59.7		261	34.2
50	26	20,240	-57.8		258	28.4
40	26	21,655	-55.5		247	22.9
30	25	23,502	-53.2		248	20.0
25	25	24,676	-53.4		242	18.5
20	25	26,113	-53.2		244	14.8
15	20	27,963	-53.0		257	15.5
10	11	30,576	-50.6			

DENVER, COLO. 838 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	1,611	-1.6	61	218	3.1
1000	28	181				
950	28	600				
900	28	1,036				
850	28	1,498				
800	28	1,986	1.8	46	294	7.6
750	28	2,502	-1.4	45	303	12.6
700	28	3,049	-5.2	45	306	15.9
650	28	3,620	-9.1	45	317	21.2
600	28	4,242	-12.9	44	319	25.3
550	28	4,893	-17.4	42	319	27.8
500	28	5,607	-22.5	41	314	29.5
450	28	6,366	-28.2	37	310	30.1
400	28	7,205	-34.5		313	32.6
350	28	8,125	-41.7		314	38.1
300	28	9,153	-49.5		314	42.9
250	28	10,325	-57.5		308	46.4
200	27	11,720	-59.6		302	49.2
175	27	12,558	-59.1		302	49.7
150	27	13,523	-59.1		302	48.2
125	27	14,660	-61.2		302	43.5
100	27	16,036	-63.9		301	38.5
80	26	17,401	-64.7		303	33.6
70	26	18,219	-64.9		303	26.4
60	26	19,159	-64.5		305	21.6
50	25	20,280	-64.2		308	17.9
40	23	21,654	-62.8		306	16.1
30	21	23,448	-57.8		305	13.8
25	21	24,606	-55.5		301	8.7
20	19	26,034	-53.5		282	11.5
15	14	27,907	-50.1		275	20.0
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DODGE CITY, KANS. 926 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	792	-2.2	73	290	2.7
1000	28	174				
950	28	585				
900	28	1,020	2.7	53	299	7.0
850	28	1,483	3.3	45	309	12.8
800	28	1,973	.9	45	309	14.0
750	28	2,485	-2.0	44	307	14.2
700	28	3,035	-5.3	42	311	18.8
650	28	3,610	-8.9	42	311	22.2
600	28	4,230	-12.5	42	304	25.8
550	28	4,882	-16.7	40	303	30.9
500	28	5,599	-21.6	40	298	35.6
450	28	6,358	-27.1	42	294	34.4
400	28	7,207	-33.5	39	292	38.1
350	28	8,129	-41.1		288	38.5
300	28	9,157	-49.6		288	45.5
250	28	10,329	-57.2		290	48.2
200	28	11,732	-59.2		290	53.4
175	27	12,560	-58.3		290	51.1
150	26	13,525	-58.7		292	51.5
125	26	14,665	-60.8		290	47.4
100	25	16,052	-62.9		295	40.6
80	23	17,427	-63.9		291	31.9
70	23	18,250	-64.2		294	27.0
60	23	19,188	-64.1		291	24.5
50	23	20,307	-63.2		286	20.8
40	23	21,685	-61.0		270	20.2
30	21	23,492	-55.6		256	21.2
25	20	24,661	-53.2		259	19.0
20	15	26,103	-51.8		258	17.3
15	5	27,991	-49.9			
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EL PASO, TEXAS 884 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	1,193	4.6	59	321	2.5
1000	28	175				
950	28	599				
900	28	1,051				
850	28	1,518	7.5	41	310	4.1
800	28	2,015	5.3	42	303	9.1
750	28	2,538	2.8	39	300	15.7
700	28	3,096	-.2	37	295	16.5
650	28	3,681	-3.9	35	290	16.7
600	28	4,312	-7.9	36	288	19.8
550	28	4,976	-12.4	35	288	22.0
500	28	5,705	-17.5		289	27.0
450	28	6,484	-23.3		289	30.1
400	28	7,337	-30.1		290	34.2
350	28	8,273	-37.4		291	38.3
300	28	9,319	-45.6		288	44.1
250	28	10,512	-53.7		286	50.1
200	28	11,931	-57.2		285	53.8
175	28	12,773	-58.7		284	58.1
150	28	13,738	-60.8		284	59.1
125	28	14,860	-65.2		286	53.6
100	27	16,206	-68.9		286	45.9
80	27	17,535	-70.3		287	35.9
70	27	18,333	-70.1		290	29.5
60	24	19,251	-68.8		291	24.1
50	24	20,349	-66.4		284	20.8
40	24	21,714	-62.4		276	21.6
30	23	23,508	-57.8		260	25.6
25	20	24,673	-55.1		260	27.8
20	19	26,105	-53.1		258	28.0
15	16	27,965	-50.9		265	20.0
10	7	30,622	-47.1			

ELY, NEV. 811 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	1,908	-2.9	77	184	4.3
1000	27	209				
950	27	633				
900	27	1,073				
850	27	1,528				
800	27	2,014	1.0	58	203	3.3
750	27	2,539	.1	50	350	4.3
700	27	3,082	-2.9	49	309	7.4
650	27	3,666	-6.2	49	312	12.6
600	27	4,287	-10.3	49	308	15.7
550	27	4,949	-14.6	47	304	18.7
500	27	5,667	-19.6	46	301	22.3
450	27	6,438	-25.1	43	296	25.5
400	27	7,286	-31.5	42	299	21.0
350	26	8,214	-39.3		308	22.3
300	26	9,251	-47.7		310	28.4
250	26	10,431	-56.2		291	29.0
200	26	11,830	-60.4		297	33.2
175	26	12,664	-59.3		301	38.1
150	26	13,630	-59.7		295	41.2
125	26	14,766	-61.5		300	37.7
100	26	16,137	-64.8		304	29.3
80	26	17,494	-66.1		309	25.1
70	26	18,316	-65.3		312	25.3
60	26	19,244	-65.1		316	21.6
50	25	20,360	-64.6		330	15.7
40	22	21,726	-62.8		346	12.6
30	19	23,523	-58.1		355	8.5
25	18	24,682	-54.9		1	8.7
20	16	26,122	-52.2		359	4.9
15	10	27,991	-49.7			
10	5	30,707	-45.9			

FAIRBANKS, ALASKA 995 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	135	-19.2	76	22	2.1
1000	28	95				
950	28	486	-11.2	64	80	7.6
900	28	900	-10.7	63	112	9.1
850	28	1,340	-9.9	63	130	5.2
800	28	1,807	-11.4	61	176	4.7
750	28	2,296	-13.8	61	189	7.2
700	28	2,822	-16.5	57	179	8.2
650	28	3,371	-19.7	53	194	8.0
600	28	3,966	-23.5	48	203	10.9
550	28	4,589	-28.1	46	208	13.6
500	28	5,274	-33.1	46	209	15.7
450	28	6,001	-38.3		210	17.3
400	28	6,808	-43.9		210	21.8
350	28	7,694	-49.2		213	23.3
300	28	8,694	-53.5		216	21.8
250	28	9,864	-53.7		226	19.2
200	28	11,308	-50.3		242	15.2
175	28	12,181	-49.4		247	14.6
150	28	13,192	-49.5		253	12.8
125	27	14,389	-49.6		257	11.5
100	27	15,845	-50.6		272	11.5
80	27	17,296	-51.5		289	9.7
70	27	18,158	-52.2		285	7.0
60	25	19,165	-52.6		300	5.6
50	25	20,340	-53.2		311	5.2
40	25	21,776	-53.6		359	3.9
30	25	23,621	-54.7		34	5.1
25	22	24,770	-56.1		23	6.2
20	20	26,205	-56.2		29	11.7
15	13	27,995	-57.7		31	9.3
10	11	30,535	-57.9			
7	7	32,841	-58.5			
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FLINT, MICH. 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	234	-10.7	80	264	3.1
1000	28	146				
950	28	540	-10.5	70	274	8.9
900	28	956	-11.7	64	280	14.4
850	28	1,393	-11.8	60	280	17.9
800	28	1,857	-12.7	56	277	22.7
750	28	2,348	-14.4	54	278	24.5
700	28	2,869	-16.5	51	282	27.4
650	28	3,423	-18.8	48	281	30.7
600	28	4,017	-21.7	46	280	34.4
550	28	4,649	-25.2	44	278	39.2
500	28	5,340	-29.5	40	281	43.7
450	28	6,081	-34.2		281	48.4
400	28	6,900	-39.3		279	53.4
350	28	7,803	-45.0		277	58.9
300	28	8,820	-51.0		276	61.8
250	28	9,993	-55.2		275	62.8
200	28	11,419	-54.5		274	54.8
175	28	12,274	-53.9		273	54.8
150	28	13,263	-54.4		272	51.3
125	28	14,427	-55.8		272	47.6
100	28	15,843	-57.2		270	43.9
80	28	17,252	-57.8		269	38.5
70	28	18,097	-58.1		265	35.4
60	27	19,066	-57.8		258	29.0
50	27	20,222	-55.9		254	27.0
40	26	21,657	-52.8		246	23.5
30	25	23,525	-50.9		232	21.2
25	24	24,718	-50.8		225	18.5
20	19	26,168	-51.7		214	9.9
15	13	28,031	-51.9			
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FORT WORTH, TEXAS 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	180	3.4	64	325	1.7
1000	28	165			350	2.3
950	28	587	6.1	50	274	3.7
900	28	1,028	7.0	43	289	4.9
850	28	1,497	5.6	44	305	6.6
800	28	1,991	3.4	41	308	9.7
750	28	2,511	.4	39	304	13.2
700	28	3,062	-2.5	39	300	16.5
650	28	3,645	-5.4	37	294	20.2
600	28	4,271	-9.2		290	22.7
550	28	4,934	-13.6		292	26.4
500	28	5,657	-18.8		288	29.7
450	28	6,428	-24.6		289	35.0
400	28	7,279	-31.5		289	36.5
350	28	8,209	-38.9		289	39.8
300	28	9,248	-46.8		287	43.3
250	28	10,434	-54.6		282	47.8
200	28	11,848	-57.8		278	61.4
175	27	12,693	-58.1		280	65.5
150	27	13,659	-60.4		277	63.9
125	27	14,789	-62.8		280	57.3
100	27	16,151	-66.6		278	48.4
80	26	17,498	-67.1		281	39.8
70	26	18,312	-66.8		277	34.0
60	26	19,236	-65.7		274	30.5
50	24	20,345	-63.7		271	25.6
40	24	21,727	-59.6		263	23.9
30	23	23,544	-55.6		254	29.0
25	22	24,706	-53.4		259	30.5
20	22	26,143	-53.2		264	23.9
15	18	27,999	-51.6		254	17.5
10	5	30,596	-52.8			
7						
5						

GLASGOW, MONT. 935 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	696	-6.7	87	65	2.7
1000	28	162				
950	28	567				
900	28	992	-4.0	70	299	8.0
850	28	1,444	-3.8	65	303	17.5
800	28	1,922	-4.9	61	307	23.3
750	28	2,425	-6.8	59	308	28.0
700	28	2,965	-9.3	55	312	31.3
650	28	3,528	-12.5	51	316	32.6
600	28	4,141	-16.3	50	317	35.9
550	28	4,786	-20.3	47	315	36.5
500	28	5,489	-25.2	46	316	40.8
450	28	6,235	-30.7	44	317	45.7
400	28	7,071	-37.0		316	47.4
350	28	7,980	-44.0		321	48.0
300	28	8,997	-51.4		321	52.5
250	28	10,161	-57.9		325	57.1
200	27	11,563	-59.5		322	55.8
175	27	12,399	-58.7		320	53.2
150	26	13,368	-57.9		328	41.4
125	23	14,522	-58.2		329	39.8
100	22	15,922	-59.6		330	33.0
80	21	17,307	-61.0		329	26.0
70	21	18,134	-61.3		333	23.1
60	21	19,090	-61.5		342	20.2
50	20	20,211	-60.7		354	15.3
40	16	21,615	-59.6		7	13.6
30	13	23,428	-55.9		31	13.8
25	12	24,592	-53.0			
20	7	26,026	-50.7			
15						
10						
7						
5						

GRAND JUNCTION, COLO. 855 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	1,474	-.3	67	106	2.5
1000	28	197				
950	28	616				
900	28	1,058				
850	28	1,520			117	2.9
800	28	2,009	1.4	49	128	3.3
750	28	2,521	-1.7	48	304	3.3
700	28	3,072	-4.8	48	303	8.7
650	28	3,645	-8.3	47	309	13.8
600	28	4,268	-12.0	40	311	17.1
550	28	4,922	-16.3	37	315	20.2
500	28	5,639	-21.1		314	23.9
450	28	6,401	-26.9		316	29.9
400	28	7,247	-33.4		315	34.0
350	28	8,170	-40.8		314	38.3
300	28	9,200	-48.9		316	43.1
250	28	10,375	-57.0		310	45.9
200	28	11,770	-60.3		308	47.0
175	28	12,604	-59.3		304	45.3
150	28	13,569	-59.5		302	43.7
125	28	14,704	-61.7		297	41.8
100	28	16,074	-65.1		303	31.3
80	28	17,429	-66.4		302	31.5
70	28	18,247	-66.3		305	26.0
60	27	19,169	-66.0		309	21.2
50	25	20,278	-65.1		315	15.0
40	24	21,644	-62.8		321	11.5
30	23	23,432	-58.8		303	8.4
25	23	24,584	-56.1		288	9.9
20	22	26,011	-53.7		289	11.1
15	20	27,884	-50.5		276	18.5
10	16	30,533	-48.2		269	27.4
7	15	32,908	-44.8		273	36.1
5	12	35,172	-42.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	GREAT FALLS, MONT. 889 MB						GREEN BAY, WIS. 991 MB						GREENSBORO, N. C. 985 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	27	1,123	- .4	65	229	10.5	28	210	-14.2	77	305	3.1	28	273	- 2.6	75	352	2.5
1000	27	165					28	141					28	155				
950	27	580					28	531	-13.2	66	300	7.4	28	566	+ .8	55	332	5.2
900	27	1,021					28	943	-13.6	66	296	11.5	28	996	+ 1.1	55	308	7.2
850	27	1,480	1.7	48	250	19.4	28	1,378	-13.6	60	294	14.6	28	1,452	+ 1.9	54	289	10.3
800	27	1,967	- .9	53	273	18.5	28	1,839	-13.7	56	289	18.5	28	1,933	+ 3.2	52	275	16.1
750	27	2,473	- 4.1	55	289	19.6	28	2,326	-15.0	51	288	21.8	28	2,445	+ 4.9	51	269	22.0
700	27	3,021	- 7.3	52	302	22.3	28	2,848	-16.8	50	293	24.7	28	2,984	+ 7.0	51	264	27.4
650	27	3,587	-10.9	50	305	23.5	28	3,398	-19.1	47	296	28.2	28	3,560	+ 8.8	46	264	37.3
600	27	4,205	-14.7	48	311	27.4	28	3,994	-22.1	48	297	33.6	28	4,177	-12.0		263	42.9
550	27	4,853	-18.6	43	314	29.9	28	4,625	-25.7	47	298	35.9	28	4,836	-15.9		264	48.4
500	27	5,564	-23.6		317	33.6	28	5,314	-29.9		298	38.7	28	5,551	-20.7		263	51.5
450	27	6,317	-29.1		312	37.5	28	6,052	-34.8		296	42.9	28	6,319	-26.2		264	57.3
400	27	7,159	-35.3		317	41.8	28	6,870	-40.2		295	46.8	28	7,165	-32.4		262	64.3
350	27	8,075	-42.5		321	41.8	28	7,771	-45.7		296	50.9	28	8,093	-39.3		258	70.7
300	27	9,098	-50.4		319	47.4	28	8,785	-51.3		292	53.8	28	9,131	-46.9		257	78.1
250	27	10,266	-57.4		316	48.0	28	9,960	-54.8		283	51.5	28	10,319	-53.9		255	82.0
200	27	11,661	-60.8		317	42.2	28	11,389	-54.2		289	47.2	28	11,738	-57.1		257	78.9
175	27	12,493	-59.8		313	41.0	28	12,246	-54.2		289	46.0	28	12,584	-56.9		260	75.8
150	27	13,459	-58.2		308	37.7	28	13,236	-54.1		287	42.6	27	13,559	-58.1		261	65.5
125	26	14,600	-59.0		312	33.2	28	14,402	-55.6		286	39.2	27	14,701	-60.5		260	61.0
100	26	15,996	-60.0		321	32.6	28	15,818	-57.6		286	36.1	27	16,082	-62.8		262	48.0
80	25	17,382	-61.1		330	25.8	27	17,224	-58.4		281	31.9	26	17,453	-63.3		259	41.2
70	24	18,215	-61.2		335	23.9	27	18,061	-58.7		278	29.5	25	18,288	-63.0		259	37.9
60	24	19,173	-61.0		334	23.1	27	19,032	-57.9		269	26.0	24	19,230	-60.9		261	35.9
50	24	20,306	-60.9		335	17.1	25	20,185	-56.9		264	20.6	24	20,371	-58.5		257	27.6
40	22	21,699	-59.6		353	19.0	22	21,603	-53.9		251	17.9	24	21,783	-55.8		252	20.0
30	21	23,510	-57.6		1	13.0	22	23,461	-51.7		230	14.8	24	23,622	-54.8		253	11.1
25	20	24,663	-57.1		1	14.2	22	24,645	-51.2		225	16.1	23	24,786	-54.8		232	10.1
20	19	26,069	-55.8		357	13.6	10	26,084	-50.6				21	26,220	-54.2		234	7.4
15	15	27,914	-54.6		360	9.5							20	28,076	-52.0		207	5.4
10	13	30,507	-53.4		332	10.9							11	30,707	-49.4			
7	12	32,807	-51.9		327	11.1												
5	8	35,004	-49.2															

Standard pressure surface (mb.)	GUAM, MARIANA IS. 1000 MB						HILO, HAWAII 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	25	111	24.2	89	64	8.0	28	11	19.9	81	236	4.9
1000	25	113			61	8.5	28	133	21.8	76	227	3.7
950	25	562	21.9	83	69	16.9	28	574	18.9	78	163	2.9
900	25	1,032	19.2	82	80	14.6	28	1,040	15.8	79	147	2.9
850	25	1,523	16.9	79	91	11.7	28	1,525	13.1	76	165	1.7
800	25	2,038	14.3	75	105	10.1	28	2,035	12.4	49	191	2.7
750	25	2,580	11.8	63	116	9.9	28	2,575	11.1		238	5.2
700	25	3,157	9.3	52	126	8.2	28	3,149	8.2		261	7.4
650	25	3,770	6.0	51	134	7.4	28	3,755	4.7		269	10.9
600	25	4,420	2.1	52	145	7.8	28	4,404	.4		272	14.8
550	25	5,115	- 1.7	49	151	8.7	28	5,091	- 4.2		272	19.6
500	25	5,871	- 6.5	48	160	7.4	28	5,842	- 8.9		271	22.2
450	25	6,687	-11.0	42	167	7.2	28	6,645	-14.4		274	27.2
400	25	7,584	-16.6	40	172	5.8	28	7,533	-20.8		284	31.1
350	25	8,576	-23.4		175	6.2	28	8,508	-27.4		303	35.6
300	23	9,685	-31.9		193	8.9	28	9,599	-35.6		310	45.9
250	23	10,945	-42.5		196	12.0	28	10,845	-44.3		308	53.8
200	23	12,411	-54.9		204	13.8	28	12,308	-54.5		307	53.6
175	23	13,251	-62.0		207	14.2	28	13,151	-60.6		303	54.0
150	23	14,187	-69.2		198	15.3	28	14,097	-66.5		300	50.9
125	23	15,255	-76.9		189	13.4	28	15,183	-72.8		296	37.5
100	22	16,512	-82.3		179	9.5	28	16,471	-78.7		282	29.5
80	22	17,757	-80.9		140	1.2	28	17,738	-78.6		273	17.7
70	22	18,510	-78.6		216	1.0	28	18,501	-76.1		259	11.7
60	24	19,401	-72.8		130	4.3	28	19,401	-71.4		215	4.3
50	24	20,487	-67.4		109	10.7	28	20,489	-66.7		108	5.1
40	22	21,843	-63.9		101	19.6	28	21,854	-62.3		86	10.1
30	19	23,626	-59.1		85	31.3	28	23,645	-58.7		83	14.0
25	18	24,779	-55.6		86	32.6	26	24,798	-56.6		91	12.8
20	16	26,216	-51.2		83	30.9	24	26,222	-53.1		81	14.4
15	14	28,100	-48.0		77	25.5	20	28,093	-51.2		104	12.6
10	8	30,797	-45.1				11	30,725	-48.6			
7							7	33,105	-40.7			

Standard pressure surface (mb.)	HUNTINGTON, W. VA. 989 MB						INTERNAT. FALLS, MINN. 974 MB						JACKSON, MISS. 1008 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	246	- 5.0	67	193	1.7	28	360	-19.3	69	320	2.9	28	94	2.0	79	8	2.5
1000	28	158					28	161					28	160	2.3	65	26	3.3
950	28	562	- 4.4	57	237	6.8	28	545	-18.0	67	315	4.7	28	577	3.7	53	332	5.8
900	28	988	- 5.9	59	260	11.3	28	948	-17.7	68	306	9.5	28	1,016	3.7	47	312	10.1
850	28	1,435	- 6.4	58	268	17.5	28	1,378	-15.7	60	321	13.6	28	1,481	3.0	38	307	13.8
800	28	1,908	- 7.5	59	270	23.1	28	1,835	-15.6	53	320	18.1	28	1,970	1.6	35	299	16.1
750	28	2,408	- 9.1	57	275	25.5	28	2,318	-16.6	50	317	20.8	28	2,489	- .6	34	293	18.8
700	28	2,941	-10.8	57	274	29.5	28	2,838	-18.0	51	312	24.1	28	3,037	- 3.5	35	286	22.3
650	28	3,505	-13.1	55	274	34.0	28	3,384	-20.5	51	316	27.2	28	3,616	- 6.4	36	281	27.4
600	28	4,115	-15.9	47	273	40.8	28	3,979	-23.4	50	315	30.9	28	4,241	-10.2	37	280	29.7
550	28	4,758	-19.6	44	272	46.6	28	4,607	-26.7	47	315	36.7	28	4,903	-14.3		274	32.6
500	28	5,467	-24.3		270	53.0	28	5,294	-30.3		314	39.4	28	5,623	-19.4		275	34.8
450	28	6,220	-29.3		268	59.5	28	6,028	-35.6		317	43.7	28	6,394	-25.1		275	35.6
400	28	7,059	-35.4		268	66.1	28	6,846	-41.1		317	48.6	28	7,243	-31.6		278	38.9
350	28	7,975	-42.3		266	71.1	28	7,743	-46.6		316	50.7	28	8,174	-38.7		279	39.8
300	28	9,001	-49.9		269	71.5	28	8,755	-51.6		317	53.4	28	9,217	-45.9		282	44.1
250	28	10,175	-55.7		270	71.7	28	9,928	-54.8		317	50.9	28	10,412	-52.6		284	48.4
200	28	11,593	-56.1		267	67.8	28	11,354	-54.4		312	41.4	28	11,841	-56.0		289	55.6
175	28	12,442	-56.0		270	66.1	27	12,206	-53.6		309	41.2	28	12,688	-57.6		280	55.0
150	28	13,420	-57.1		270	62.0	27	13,197	-54.1		306	37.5	28	13,659	-58.8		280	53.4
125	27	14,571	-59.1		273	55.2	27	14,365	-54.8		309	35.0	28	14,796	-62.1		272	49.4
100	26	15,965	-61.5		271	51.5	26	15,780	-55.8		310	27.2	28	16,163	-65.7		273	43.5
80	26	17,349	-61.4		263	40.0	24	17,194	-56.5		314	24.7	27	17,517	-66.0		273	31.5
70	25	18,177	-62.2		269	42.2	24	18,037	-57.2		313	22.5	27	18,333	-66.2		279	27.0
60	25	19,133	-60.8		264	39.4	21	19,006	-57.0		313	17.9	27	19,263	-64.9		274	24.7
50	25	20,275	-58.7		263	32.4	20	20,170	-55.7		340	13.2	26	20,386	-60.8		265	21.8
40	24	21,684	-55.4		252	24.9	19	21,595	-53.5		349	7.4	25	21,786	-57.6		260	18.8
30	24	23,532	-53.3		248	19.4	18	23,455	-51.3		62	2.9	24	23,611	-54.9		271	16.9
25	22	24,695	-54.2		233	14.4	18	24,641	-51.2		130	2.3	24	24,777	-54.3		270	8.7
20	22	26,125	-54.1		242	10.5	16	26,103	-51.4		156	5.8	24	26,209	-53.8		262	7.0
15	20	27,978	-52.2		235	10.5	15	27,969	-52.1		156	5.1	24	28,064	-51.9		260	3.7
10	6	30,632	-48.8				10	30,615	-52.0				14	30,699	-48.2			
7							5	32,942	-51.7									

Standard pressure surface (mb.)	JACKSONVILLE, FLA. 1017 MB						JOHNSTON IS., PACIFIC AREA 1015 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	28	5	7.0	87	310	3.5	28	3	24.4	77	86	4.3
1000	28	144	8.3	78	316	3.9	28	132	23.4	77	71	6.4
950	28	568	8.0	67	311	3.7	28	579	19.9	76	64	10.5
900	28	1,014	7.4	58	256	10.1	28	1,042	16.6	71	67	4.5
850	28	1,484	5.7	54	258	15.0	28	1,526	14.1	60	80	3.7
800	28	1,979	4.2	45	266	19.6	28	2,037	13.4	36	353	2.5
750	28	2,505	2.6		269	24.7	28	2,579	12.3		349	3.5
700	28	3,059	- .3	36	265	27.2	28	3,154	9.8		288	4.9
650	28	3,647	- 3.8	37	262	31.7	28	3,751	6.1		317	7.8
600	28	4,276	- 7.6	34	262	36.9	28	4,414	1.7		316	7.8
550	28	4,944	-11.6	35	261	41.6	28	5,097	- 2.5		300	12.2
500	28	5,673	-15.9		261	47.0	28	5,860	- 6.8		290	13.2
450	28	6,456	-21.4		264	55.6	28	6,664	-12.2		297	14.2
400	28	7,319	-27.3		258	60.2	28	7,564	-18.0		305	18.8
350	28	8,267	-34.3		259	62.6	28	8,550	-24.4		309	26.6
300	28	9,328	-41.7		257	68.0	28	9,654	-32.5		310	28.2
250	28	10,540	-50.2		259	75.6	28	10,913	-42.7		317	32.1
200	28	11,973	-56.6		263	64.1	27	12,380	-54.7		317	31.9
175	28	12,813	-59.1		262	68.0	27	13,222	-61.0		313	30.3
150	28	13,773	-61.9		262	64.7	26	14,164	-68.3		310	28.0
125	27	14,893	-65.3		263	56.3	22	15,242	-75.2		307	19.4
100	26	16,240	-67.7		263	43.1	21	16,517	-80.7		301	15.3
80	24	17,581	-68.3		260	35.8	20	17,770	-81.5		299	8.2
70	23	18,396	-66.5		264	31.5	19	18,518	-79.7		321	4.1
60	22	19,324	-64.1		267	23.3	19	19,404	-73.7		105	1.4
50	22	20,447	-60.8		271	14.6	18	20,489	-67.6		111	6.8
40	24	21,843	-58.5		264	8.4	16	21,850	-64.0		104	12.4
30	23	23,662	-55.4		47	2.7	14	23,623	-60.4		81	22.3
25	22	24,827	-54.1		65	5.4	14	24,770	-56.8		73	25.5
20	21	26,261	-52.8		86	9.7	14	26,197	-53.5		74	23.7
15	18	28,142	-48.5		106	10.1	13	28,060	-51.0		74	20.0
10	14	30,825	-41.6									
7	11	33,234	-32.7									

Standard pressure surface (mb.)	KING SALMON, ALASKA 1000 MB						KOTZEBUE, ALASKA 1015 MB						LAKE CHARLES, LA. 1019 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	15	- 8.4	73	31	7.8	28	5	-17.5	73	64	3.3	28	5	5.5	86	28	3.5
1000	28	16			19	8.0	28	118	-14.8	67	57	4.5	28	162	7.3	68	24	4.7
950	28	418	- 6.8	61	37	13.0	28	510	-12.7	62	75	7.6	28	585	7.4	51	356	2.7
900	28	839	- 5.9	59	48	12.8	28	921	-12.7	61	62	5.4	28	1,030	7.4	40	310	5.8
850	28	1,286	- 6.9	51	60	11.7	28	1,357	-12.8	55	61	4.7	28	1,499	6.0	33	304	9.5
800	28	1,758	- 8.9	46	65	8.5	28	1,818	-14.2	50	68	4.7	28	1,994	4.1	34	304	14.2
750	28	2,256	-11.3	44	74	7.0	28	2,304	-16.3	47	77	2.1	28	2,517	1.7	36	292	17.5
700	28	2,783	-14.1	42	83	7.0	28	2,823	-18.7		19	1.2	28	3,071	- .9		283	22.9
650	28	3,343	-17.6		83	6.2	28	3,369	-21.7		322	1.7	28	3,657	- 4.5	36	279	25.3
600	28	3,938	-21.2		78	6.6	28	3,958	-25.3		315	3.3	28	4,285	- 8.4		277	28.6
550	28	4,573	-25.7		95	5.4	28	4,579	-29.5		312	4.1	28	4,946	-12.9		275	32.3
500	28	5,259	-30.4		154	3.3	28	5,258	-34.0		296	2.7	28	5,675	-17.8		274	39.6
450	28	5,996	-35.9		186	1.4	28	5,984	-39.2		305	3.7	28	6,451	-23.4		271	42.6
400	28	6,808	-41.8		198	3.5	28	6,787	-44.4		259	2.7	28	7,306	-30.0		272	48.4
350	28	7,702	-47.4		213	4.5	28	7,670	-50.0		239	3.9	28	8,244	-36.8		276	51.5
300	28	8,710	-51.8		205	6.6	28	8,667	-53.9		233	8.0	28	9,294	-44.1		274	58.3
250	28	9,888	-52.7		204	8.9	28	9,837	-53.0		231	11.1	28	10,497	-51.4		271	70.5
200	28	11,337	-49.9		191	7.2	28	11,287	-49.8		216	13.4	28	11,929	-55.6		273	74.0
175	28	12,211	-49.2		199	8.4	28	12,162	-49.0		216	14.0	28	12,776	-57.9		272	78.3
150	28	13,223	-48.9		189	7.4	28	13,174	-48.5		213	13.8	28	13,740	-60.9		273	75.0
125	27	14,417	-49.4		188	7.4	28	14,373	-48.7		219	13.0	27	14,855	-64.5		271	64.1
100	26	15,878	-50.8		173	5.6	28	15,837	-49.5		221	12.2	27	16,203	-68.8		271	53.2
80	26	17,328	-51.9		152	6.2	28	17,294	-50.8		225	11.9	27	17,538	-69.0		269	39.1
70	25	18,195	-53.1		138	6.0	28	18,161	-51.3		226	10.1	27	18,342	-68.5		267	31.7
60	25	19,187	-53.8		135	5.2	28	19,164	-51.4		226	8.0	27	19,265	-66.7		264	25.8
50	25	20,357	-54.0		102	8.5	28	20,347	-51.5		212	6.8	27	20,379	-62.2		257	22.5
40	24	21,794	-54.0		106	10.9	28	21,794	-52.0		192	8.4	27	21,770	-58.9		253	20.6
30	23	23,635	-54.3		89	12.8	27	23,651	-52.8		184	8.4	27	23,588	-55.8		261	12.4
25	22	24,804	-55.0		91	14.0	27	24,827	-53.2		179	5.4	27	24,753	-54.4		272	8.2
20	21	26,226	-55.0		86	17.1	25	26,255	-53.9		190	7.2	25	26,184	-54.3		281	6.0
15	16	28,071	-55.0		74	22.3	22	28,108	-55.0		178	8.0	21	28,044	-52.1		288	5.1
10	6	30,690	-53.0				9	30,797	-52.4				13	30,711	-47.4			

Standard pressure surface (mb.)	LANDER, WYO. 829 MB						LAS VEGAS, NEV. 942 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	28	1,696	- 2.6	66	235	3.7	28	660	9.0	51	256	2.1
1000	28	179					28	159				
950	28	591					28	587				
900	28	1,031					28	1,041	12.1	35	3	6.2
850	28	1,493					28	1,517	9.2	37	354	7.2
800	28	1,977	.6	48	228	2.1	28	2,016	6.1	40	338	6.0
750	28	2,493	- 2.0	46	288	6.8	28	2,538	2.8	43	311	6.2
700	28	3,039	- 5.6	44	299	16.1	28	3,097	- .5	40	306	9.5
650	28	3,610	- 9.3	43	303	19.6	28	3,681	- 3.9	36	309	11.3
600	28	4,230	-13.2	40	309	25.5	28	4,313	- 7.9	36	306	14.6
550	28	4,881	-17.1	34	307	29.5	28	4,977	-12.5	34	302	18.7
500	28	5,597	-22.1		302	35.8	28	5,705	-17.6	36	299	22.3
450	28	6,356	-27.9		307	36.7	28	6,475	-23.3		297	25.8
400	28	7,201	-34.3		308	42.7	28	7,337	-30.0		293	27.6
350	28	8,121	-41.6		311	48.2	28	8,274	-37.3		294	31.1
300	28	9,149	-49.5		308	46.2	28	9,320	-45.9		291	35.8
250	28	10,322	-57.3		309	46.0	28	10,509	-54.9		290	42.6
200	28	11,717	-60.5		306	42.7	28	11,914	-59.6		293	50.5
175	28	12,552	-59.0		306	44.9	28	12,749	-59.3		294	51.3
150	28	13,520	-58.4		305	40.6	28	13,712	-60.4		290	53.0
125	27	14,664	-59.6		304	40.8	27	14,835	-63.4		291	49.5
100	26	16,052	-62.2		307	30.7	26	16,196	-67.3		295	40.6
80	26	17,425	-63.4		310	29.0	23	17,542	-69.0		294	30.9
70	25	18,245	-63.1		307	25.3	19	18,327	-68.8		302	29.3
60	25	19,193	-62.9		316	19.6	16	19,253	-67.0		303	25.5
50	25	20,324	-62.6		318	10.1	14	20,363	-65.3		317	14.8
40	24	21,699	-60.2		347	9.5	12	21,737	-63.8		310	15.0
30	23	23,503	-57.0		346	6.2	11	23,523	-59.7		305	12.6
25	22	24,667	-54.2		358	3.5	11	24,673	-55.9		293	11.7
20	21	26,120	-52.7		45	4.1	10	26,113	-51.4		276	13.6
15	18	27,983	-51.2				8	27,966	-48.2			
10												

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1963

LIHUE, HAWAII — 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	36	19.3	81	260	5.2
1000	28	136	20.8	74	261	4.3
950	28	578	18.0	73	264	4.1
900	28	1,040	15.0	72	256	7.8
850	28	1,523	12.7	62	262	10.5
800	28	2,030	10.9	45	262	13.4
750	28	2,566	9.4		262	20.2
700	28	3,137	7.0		264	23.1
650	28	3,737	3.4		264	26.6
600	28	4,386	- 1.1		265	29.7
550	28	5,067	- 5.4		267	33.4
500	28	5,817	-10.2		270	35.4
450	28	6,615	-15.7		273	42.4
400	28	7,502	-21.6		273	46.6
350	28	8,471	-27.9		281	56.2
300	28	9,561	-35.8		288	64.1
250	28	10,804	-44.7		293	70.9
200	28	12,262	-55.3		295	71.9
175	28	13,103	-61.1		292	68.4
150	28	14,047	-67.2		290	66.8
125	28	15,132	-72.5		286	54.2
100	27	16,428	-78.3		276	42.2
80	26	17,700	-78.4		270	29.9
70	26	18,466	-75.4		257	18.3
60	26	19,369	-69.9		237	11.3
50	26	20,467	-65.4		159	2.1
40	25	21,839	-61.8		87	8.9
30	25	23,633	-58.4		79	12.2
25	25	24,787	-55.8		81	9.1
20	23	26,215	-53.5		83	7.4
15	22	28,080	-51.5		99	8.0
10	21	30,728	-48.6		110	3.3
7	19	33,123	-39.0		226	1.9
5	16	35,405	-35.2			

LITTLE ROCK, ARK. — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	79	- .6	75	355	2.3
1000	28	164	.2	59	336	2.9
950	28	576	1.7	52	305	3.9
900	28	1,013	1.5	50	295	8.5
850	28	1,474	1.3	45	303	14.6
800	28	1,961		41	306	18.5
750	28	2,477	- 2.5	38	302	21.4
700	28	3,021	- 5.1	37	305	21.2
650	28	3,593	- 8.0	35	301	23.3
600	28	4,220	-11.4		295	29.0
550	28	4,874	-15.9		294	32.1
500	28	5,594	-20.6		290	37.1
450	28	6,357	-26.4		290	38.3
400	28	7,207	-32.9		289	39.1
350	28	8,132	-40.0		288	43.5
300	28	9,167	-48.0		289	45.3
250	28	10,349	-54.8		291	44.9
200	28	11,761	-57.6		293	43.9
175	28	12,605	-57.6		289	44.7
150	28	13,576	-58.5		290	41.2
125	28	14,716	-60.7		293	36.7
100	28	16,094	-63.5		290	29.9
80	25	17,459	-65.1			
70	24	18,265	-64.5			
60	23	19,209	-63.5			
50	22	20,336	-61.5			
40	21	21,735	-58.0			
30	21	23,562	-55.2			
25	21	24,729	-54.7			
20	19	26,156	-54.5			
15	16	28,006	-52.5			
10	9	30,660	-47.1			
7						
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MCGRATH, ALASKA — 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	103	-18.0	68	19	1.4
1000	28	85				
950	28	477	-12.7	67	55	6.4
900	28	887	-10.7	68	69	9.7
850	28	1,328	- 9.1	57	59	11.5
800	28	1,796	-10.6	51	78	7.8
750	28	2,289	-13.1	46	93	4.9
700	28	2,814	-15.8	43	147	4.9
650	28	3,364	-19.1	44	159	6.8
600	28	3,960	-23.1	43	168	7.8
550	28	4,587	-27.5	43	176	8.5
500	28	5,271	-32.2	41	183	8.4
450	28	5,999	-37.3		215	6.8
400	28	6,812	-42.8		201	11.5
350	28	7,702	-47.9		211	14.6
300	27	8,704	-52.2		214	11.7
250	27	9,884	-51.7		207	11.5
200	27	11,339	-48.8		206	11.7
175	27	12,217	-48.1		204	11.3
150	27	13,234	-47.6		208	9.5
125	27	14,436	-48.3		208	8.5
100	26	15,905	-49.4		200	9.9
80	26	17,363	-50.4		201	7.4
70	26	18,233	-51.4		194	5.8
60	26	19,232	-52.2		179	6.0
50	25	20,414	-52.8		153	5.4
40	25	21,852	-53.4		132	7.0
30	24	23,703	-54.6		99	8.0
25	21	24,876	-54.5		95	10.1
20	18	26,308	-54.8		86	11.1
15	15	28,154	-55.4		85	17.7
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MAJURO, MARSHALL IS. — 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	3	26.7	81	79	9.9
1000	28	99	26.0	81	73	13.2
950	28	547	22.9	82	67	18.8
900	28	1,021	20.0	79	76	18.8
850	28	1,514	17.2	75	84	17.7
800	28	2,031	15.0	66	90	17.7
750	28	2,576	12.4	60	88	20.0
700	28	3,154	9.4	60	93	19.4
650	28	3,765	5.9	58	97	20.4
600	28	4,419	2.4	53	95	22.5
550	28	5,112	- 1.4	44	89	22.9
500	28	5,873	- 5.7	41	89	24.5
450	28	6,691	-10.4		89	27.0
400	28	7,592	-16.2		88	25.8
350	28	8,584	-22.8		81	24.3
300	27	9,696	-31.3		82	22.2
250	27	10,960	-41.7		92	19.8
200	27	12,432	-54.3		91	17.7
175	27	13,275	-61.2		83	16.7
150	27	14,215	-68.6		75	15.2
125	27	15,287	-76.2		74	17.5
100	26	16,553	-82.4		95	19.4
80	26	17,802	-80.7		90	5.1
70	26	18,559	-78.1		240	2.1
60	25	19,448	-74.1		270	2.5
50	24	20,524	-69.5		85	12.8
40	23	21,872	-65.2		88	37.7
30	22	23,648	-58.9		88	52.8
25	20	24,801	-55.7		88	51.5
20	19	26,246	-50.8		91	57.5
15	15	28,133	-46.8		94	43.3
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MEDFORD, OREG. — 973 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	401	4.6	95	151	.8
1000	28	171				
950	28	592	7.7	80	200	1.4
900	28	1,038	7.7	69	176	5.1
850	28	1,508	5.7	62	195	8.4
800	28	2,002	3.0	60	216	11.3
750	28	2,522	.0	53	228	14.8
700	28	3,072	- 2.9	48	237	16.5
650	28	3,654	- 6.5	49	243	18.1
600	28	4,277	-10.7	50	247	19.8
550	28	4,936	-15.1	48	248	21.2
500	28	5,656	-19.7	53	257	20.8
450	28	6,422	-25.5	51	259	22.7
400	28	7,274	-31.9	50	264	23.5
350	28	8,202	-39.2	45	278	27.4
300	28	9,240	-47.0		281	31.7
250	28	10,424	-55.7		274	28.4
200	28	11,823	-61.2		273	33.0
175	28	12,653	-60.3		279	33.2
150	28	13,618	-58.9		280	33.0
125	28	14,757	-60.7		281	29.0
100	28	16,135	-63.3		288	23.1
80	26	17,505	-64.4		296	19.4
70	26	18,323	-64.4		306	15.7
60	25	19,264	-64.3		323	11.1
50	24	20,384	-64.0		340	10.5
40	24	21,755	-62.5		359	10.9
30	23	23,537	-59.9		24	9.9
25	22	24,679	-58.1		23	8.0
20	22	26,090	-56.2		360	7.6
15	19	27,929	-53.2		334	7.0
10	19	30,561	-49.8		283	17.7
7	14	32,914	-47.2		259	23.3
5	11	35,179	-43.5			

MERIDA, MEXICO — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	11	16.3	90	75	3.1
1000	28	156	19.5	80	90	4.9
950	28	593	17.6	73	107	6.8
900	28	1,059	15.5	64	160	1.2
850	28	1,542	13.1	61	254	5.4
800	28	2,051	11.0	53	254	8.2
750	28	2,581	8.6	42	252	10.9
700	28	3,156	5.9		263	11.1
650	28	3,752	3.0		265	14.6
600	28	4,404	- .8		266	18.1
550	28	5,083	- 5.0		262	19.4
500	28	5,837	-10.0		264	23.3
450	28	6,636	-15.1		266	31.1
400	28	7,526	-21.1		260	37.3
350	28	8,499	-28.1		257	34.2
300	27	9,586	-36.4		258	37.7
250	27	10,825	-45.9		255	36.7
200	27	12,278	-55.4		261	43.7
175	27	13,120	-60.6		257	49.9
150	27	14,067	-66.0		265	44.1
125	27	15,158	-71.2		265	44.7
100	27	16,462	-75.8		273	33.4
80	27	17,744	-77.4		268	25.6
70	27	18,526	-74.1		253	14.8
60	25	19,422	-69.0		264	6.2
50	22	20,527	-63.3		273	3.1
40	22	21,906	-60.5		8	5.2
30	22	23,716	-56.3		53	12.8
25	22	24,880	-53.6		78	12.8
20	17	26,322	-51.2		49	14.0
15	9	28,184	-49.3			
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5						

MIAMI, FLA. — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	4	15.7	88	343	1.9
1000	28	146	16.0	81	349	1.4
950	28	583	14.2	77	230	3.9
900	28	1,038	12.2	72	240	8.0
850	28	1,516	10.3	64	248	12.2
800	28	2,019	8.0	56	249	18.3
750	28	2,551	6.2	44	257	20.8
700	28	3,115	3.4	39	255	24.3
650	28	3,705	.2		254	28.8
600	28	4,351	- 3.3		250	34.0
550	28	5,024	- 7.1		250	39.1
500	28	5,773	-12.1		251	42.6
450	28	6,564	-17.6		253	50.7
400	28	7,445	-23.8		253	55.8
350	28	8,407	-30.5		254	62.4
300	28	9,484	-38.7		256	65.1
250	28	10,711	-47.6		254	73.4
200	28	12,157	-56.2		254	74.6
175	28	12,997	-60.4		253	75.6
150	28	13,948	-65.0		254	70.9
125	27	15,049	-70.0		255	60.0
100	27	16,362	-73.6		256	50.3
80	27	17,663	-73.7		256	35.2
70	27	18,458	-70.8		255	25.3
60	27	19,372	-67.2		255	13.6
50	26	20,485	-63.2		272	5.8
40	26	21,871	-59.5		54	3.5
30	26	23,686	-56.2		71	4.7
25	25	24,851	-54.0		71	7.4
20	25	26,290	-52.1		109	3.3
15	22	28,167	-48.9		230	4.5
10	20	30,880	-40.9		257	10.7
7	10	33,327	-34.7			
5						

MIDLAND, TEXAS — 917 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	874	1.9	66	322	2.1
1000	28	169				
950	28	589				
900	28	1,028	5.9	48	260	3.3
850	28	1,499	7.2	39	289	7.6
800	28	1,995	5.2	38	298	11.7
750	28	2,519	2.4	38	301	15.7
700	28	3,074	- .6	36	296	17.3
650	28	3,661	- 3.9	32	288	17.7
600	28	4,290	- 8.0		289	22.7
550	28	4,958	-12.6		290	26.8
500	28	5,681	-17.6		293	29.3
450	28	6,453	-23.5		294	32.4
400	28	7,310	-30.3		291	34.6
350	28	8,245	-37.8		292	39.4
300	28	9,289	-46.0		290	46.6
250	28	10,479	-54.4		290	56.9
200	27	11,897	-57.6		286	63.7
175	27	12,739	-58.3		285	68.0
150	27	13,706	-60.4		286	64.1
125	25	14,842	-64.4		287	58.5
100	24	16,196	-68.2		289	46.2
80	24	17,528	-70.0		289	38.3
70	24	18,335	-69.2		290	29.7
60	23	19,250	-67.6		287	23.3
50	23	20,356	-64.7		285	19.4
40	23	21,728	-61.5		272	19.0
30	23	23,533	-56.2		261	21.4
25	23	24,696	-54.9		262	26.2
20	23	26,126	-53.1		270	21.4
15	23	27,987	-51.7		292	11.5
10	22	30,634	-47.9		269	15.0
7	20	33,031	-42.6		273	19.2
5	16	35,325	-36.6			

MONTGOMERY, ALA. — 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	61	2.1	72	329	2.1
1000	28	155	3.3	63	342	3.1
950	28	571	4.4	54	308	7.0
900	28	1,012	3.9	52	299	10.3
850	28	1,478	3.7	43	291	15.3
800	28	1,969	2.2	40	286	18.7
750	28	2,487	- .3	38	280	22.7
700	28	3,037	- 3.2	37	277	28.4
650	28	3,618	- 6.1	40	272	34.0
600	28	4,244	- 9.7	41	267	37.5
550	28	4,906	-13.8	41	264	45.9
500	28	5,629	-18.5	39	261	54.2
450	28	6,399	-24.0		260	58.5
400	28	7,256	-30.4		258	67.2
350	28	8,193	-37.3		262	71.9
300	28	9,241	-44.7		267	68.4
250	28	10,441	-52.2		265	78.1
200	28	11,871	-55.9		267	68.6
175	28	12,719	-57.4		268	69.4
150	28	13,689	-59.7		264	66.6
125	27	14,821	-62.9		265	49.2
100	27	16,183	-66.2		264	47.8
80	27	17,534	-66.1		264	37.1
70	27	18,349	-65.8		262	28.8
60	25	19,288	-63.8		267	22.9
50	23	20,411	-60.3		261	21.4
40	22	21,810	-57.7		259	14.2
30	22	23,637	-54.9		262	8.7
25	22	24,803	-54.7		273	7.2
20	21	26,233	-53.8		296	2.7
15	17	28,100	-51.2			
10	6	30,815	-46.2			
7						
5						

NANTUCKET, MASS. — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	14	- 3.5	73	298	8.2
1000	28	119			283	10.5
950	28	520	- 5.5	63	284	16.3
900	28	945	- 6.8	57	279	19.4
850	28	1,391	- 7.6	52	271	24.3
800	28	1,861	- 9.1	49	268	29.5
750	28	2,360	-10.4	49	263	34.8
700	28	2,890	-12.1	47	260	41.4
650	28	3,451	-14.7	46	259	44.5
600	28	4,056	-17.8	45	259	51.1
550	28	4,698	-21.7	43	260	54.0
500	28	5,398	-26.2	43	258	57.7
450	28	6,144	-31.3	44	258	62.6
400	28	6,978	-36.6		257	67.8
350	28	7,891	-42.9		257	73.6
300	28	8,916	-49.6		257	78.1
250	28	10,096	-54.1		258	83.2
200	28	11,526	-54.3		261	78.3
175	28	12,382	-54.4		258	72.7
150	28	13,369	-54.8		256	71.3
125	28	14,529	-56.9		257	62.2
100	28	15,939	-58.0		257	53.6
80	28	17,344	-58.3		252	42.4
70	28	18,185	-58.2		250	38.5
60	28	19,159	-56.6		249	31.3
50	28	20,322	-54.4		244	23.3
40	28	21,757	-53.1		238	17.1
30	28	23,611	-52.9		226	8.0
25	25	24,784	-53.6		146	2.1
20	25	26,217	-54.2		64	1.7
15	25	28,070	-52.1		279	1.9
10	21	30,710	-46.4		265	16.3
7	19	33,093	-42.1		274	26.0
5	10	35,388	-39.3			

NASHVILLE, TENN. — 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	177	- 3.2	81	301	1.4
1000	28	159				
950	28	564	- 2.0	62	287	6.4
900	28	996	- 2.6	58	293	11.1
850	28	1,450	- 2.7	54	289	14.4
800	28	1,929	- 4.0	52	281	18.3
750	28	2,439	- 5.1	50	283	22.3
700	28	2,978	- 7.3	47	279	27.4
650	28	3,549	- 9.7	39	278	30.7
600	28	4,167	-13.1	37	279	35.9
550	28	4,818	-17.3		278	40.4
500	28	5,533	-22.3		275	45.7
450	28	6,295	-27.9		270	47.8
400	28	7,133	-34.4		267	49.7
350	28	8,054	-41.4		267	55.2
300	28	9,084	-48.5		268	53.6
250	28	10,265	-55.1		269	56.7
200	28	11,680	-57.1		264	61.2
175	28	12,527	-56.9		261	61.0
150	28	13,502	-57.7		263	60.4
125	27	14,644	-60.3		263	53.0
100	27	16,027	-62.9		264	48.6
80	27	17,397	-63.4		264	38.5
70	27	18,219	-63.4		264	34.4
60	27	19,165	-62.8		263	34.2
50	27	20,294	-60.3		259	27.0
40	27	21,698	-56.8		253	25.1
30	27	23,531	-54.6		246	18.7
25	27	24,700	-54.2		236	8.4
20	27	26,130	-54.0		189	6.2
15	26	27,981	-52.1		251	3.1
10	23	30,632	-48.0		319	.6
7	22	33,015	-43.6		279	14.2
5	20	35,281	-39.8			

N. Y. INT. AP. IDLEWILD — 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	5	- 4.4	59	303	8.7
1000	28	140	- 5.3	55	300	9.9
950	28	543	- 6.3	54	293	12.4
900	28	965	- 7.4	52	291	16.1
850	28	1,410	- 8.1	45	281	21.0
800	28	1,880	- 9.4	47	272	25.5
750	28	2,383	-10.6	46	267	31.9
700	28	2,907	-12.8		264	37.1
650	28	3,471	-15.2	46	263	42.6
600	28	4,071	-18.4	45	264	45.7
550	28	4,714	-22.0	45	259	49.9
500	28	5,412	-26.3	43	259	55.8
450	28	6,163	-31.2	44	259	61.8
400	28	6,991	-36.9		259	66.5
350	28	7,903	-42.9		259	74.2
300	28	8,928	-49.3		260	77.3
250	28	10,110	-53.7		264	83.5
200	27	11,533	-54.7		263	80.8
175	27	12,387	-54.9		262	70.9
150	27	13,373	-55.0		261	65.1
125	27	14,533	-56.7		261	59.8
100	27	15,940	-59.3		262	52.1
80	27	17,342	-58.4		261	44.7
70	27	18,191	-58.6		258	40.8
60	27	19,152	-57.8		259	33.0
50	27	20,309	-54.9		260	30.7
40	26	21,740	-53.6		251	19.6
30	25	23,596	-52.9		247	11.3
25	25	24,770	-53.7		227	4.5
20	24	26,199	-54.4		236	3.5
15	16	28,038	-53.2		273	7.2
10						
7						
5						

NOME, ALASKA — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	7	-12.2	69	41	3.7
1000	28	103	-10.3	54	33	3.5
950	28	502	- 9.9	50	85	5.8
900	28	915	-10.1	51	63	8.0
850	28	1,355	-11.0	47	58	8.0
800	28	1,820	-12.2	43	43	8.0
750	28	2,310	-14.4	42	20	7.0
700	28	2,832	-17.1		20	7.4
650	28	3,380	-20.3		12	6.4
600	28	3,973	-23.7		355	6.0
550	28	4,594	-28.0	38	350	7.8
500	28	5,281	-32.7		338	8.4
450	28	6,008	-38.0		335	9.7
400	28	6,817	-43.6		338	8.4
350	28	7,703	-49.1		316	7.0
300	28	8,703	-53.6		309	4.7
250	28	9,876	-52.8		269	8.4
200	28	11,326	-49.7		262	7.6
175	28	12,202	-48.7		236	6.8
150	28	13,215	-48.5		227	7.2
125	28	14,415	-48.5		219	8.4
100	28	15,879	-49.5		206	8.9
80	28	17,336	-50.7		201	7.4
70	28	18,205	-51.0		202	6.2
60	28	19,207	-51.2		198	6.4
50	28	20,391	-51.7		183	5.8
40	27	21,840	-52.3		163	6.4
30	26	23,706	-52.1		120	3.3
25	25	24,880	-52.4		97	5.6
20	24	26,320	-52.7		87	7.8
15	18	28,163	-53.8		75	6.0
10	5	30,856	-51.0			
7						
5						

NORFOLK, VA. — 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	9	- .9	75	354	6.0
1000	28	148	- .6	64	355	5.8
950	28	557	- .8	59	330	6.0
900	28	989	- 1.6	55	294	8.4
850	28	1,443	- 2.9	51	269	12.2
800	28	1,923	- 4.7	50	270	17.5
750	28	2,428	- 6.2	49	262	25.3
700	28	2,967	- 8.1	45	258	33.4
650	28	3,538	-10.7	43	257	43.3
600	28	4,153	-13.6	43	257	48.8
550	28	4,806	-17.5	42	257	54.2
500	28	5,517	-22.0	39	260	59.8
450	28	6,275	-27.3		259	63.5
400	28	7,123	-33.2		260	71.9
350	28	8,048	-39.8		259	77.9
300	28	9,084	-47.0		257	83.4
250	28	10,272	-54.0		258	87.0
200	28	11,691	-56.5		257	87.6
175	28	12,538	-56.9		263	82.0
150	28	13,513	-57.5		260	74.6
125	28	14,659	-59.6		262	67.4
100	26	16,042	-62.1		264	53.2
80	26	17,420	-62.1		263	44.7
70	26	18,248	-60.7		262	38.5
60	26	19,209	-59.8		255	28.2
50	26	20,357	-57.0		258	26.0
40	26	21,781	-54.4		254	17.5
30	26	23,625	-54.6		254	7.8
25	24	24,792	-54.1		276	1.7
20	21	26,228	-52.5		72	2.9
15	16	28,094	-50.8		114	2.3
10						
7						
5						

NORTH PLATTE, NEBR. — 917 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	848	- 3.7	86	306	4.1
1000	28	159				
950	28	570				
900	28	997	- 1.4	72	304	9.5
850	28	1,455	.4	57	312	19.0
800	28	1,940	- 1.5	54	317	22.7
750	28	2,450	- 4.4	52	315	24.3
700	28	2,992	- 7.6	50	319	29.9
650	28	3,562	-11.3	48	315	33.0
600	28	4,176	-15.0	45	314	35.9
550	28	4,825	-19.3	42	312	38.1
500	28	5,531	-23.8	36	313	38.5
450	28	6,286	-29.4		312	41.6
400	28	7,122	-36.0		312	39.1
350	28	8,035	-43.4		311	39.8
300	28	9,055	-51.2		310	45.7
250	28	10,220	-58.0		310	46.0
200	28	11,620	-58.9		306	47.4
175	28	12,458	-58.7		296	43.9
150	28	13,427	-58.6		298	42.6
125	28	14,569	-59.9		298	43.3
100	28	15,956	-61.9		301	35.2
80	28	17,330	-63.1		301	31.1
70	28	18,149	-63.3		302	24.3
60	28	19,096	-63.6		302	22.3
50	28	20,216	-63.0		296	19.8
40	28	21,597	-60.6		290	12.2
30	27	23,404	-57.1		271	11.1
25	27	24,564	-54.9		275	8.2
20	27	25,998	-52.7		255	11.1
15	27	27,863	-51.1		266	16.3
10	24	30,509	-48.7		266	20.6
7	23	32,881	-45.4		267	28.2
5	20	35,132	-41.1			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	OAKLAND, CALIF. 1019 MB						OKLAHOMA CITY, OKLA. 973 MB						OLYMPIA, WASH. 1011 MB						OMAHA, NEBR. 969 MB						PEORIA, ILL. 996 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	[illegible]	11.6	87	149	1.9	28	392	- .6	73	57	1.4	28	58	4.8	94	209	2.7	28	403	- 5.9	75	279	2.5	24	200	- 9.2	76	251	1.4
1000	28	164	12.4	83	187	1.4	28	171					28	149			209	4.1	28	155					24	164				
950	28	597	12.2	71	298	.8	28	586	1.9	53	167	1.2	28	573	7.6	73	196	8.5	28	557	- 5.4	68	284	5.4	24	565	- 6.7	56	270	8.7
900	28	1,047	10.7	61	290	3.1	28	1,021	3.6	46	280	7.4	28	1,017	5.9	69	205	13.2	28	983	- 3.9	60	306	15.7	24	985	- 6.7	54	290	12.8
850	28	1,522	8.6	53	253	5.8	28	1,485	3.1	45	296	11.5	28	1,483	3.5	65	217	15.7	28	1,435	- 3.9	96	311	21.4	24	1,432	- 6.8	53	286	18.1
800	28	2,021	6.0	49	254	8.4	28	1,974	1.1	43	298	13.4	28	1,973	1.2	58	221	15.2	28	1,912	- 5.4	91	312	25.6	24	1,905	- 7.2	49	290	21.4
750	28	2,547	3.2	42	254	9.9	28	2,490	- 1.6	41	301	15.2	28	2,487	- 1.7	56	227	16.3	28	2,418	- 7.4	50	306	26.8	24	2,407	- 9.0	47	291	26.2
700	28	3,104	.1	37	259	13.0	28	3,037	- 4.6	38	302	18.7	28	3,036	- 4.7	51	234	16.7	28	2,952	-10.1	49	310	33.8	24	2,939	-11.4	48	293	31.1
650	28	3,691	- 3.7		265	16.1	28	3,613	- 7.9	37	297	18.8	28	3,610	- 7.9	43	238	18.7	28	3,516	-12.9	47	307	37.5	24	3,504	-14.3		294	34.0
600	28	4,321	- 8.0		265	19.8	28	4,235	-11.5	37	287	23.9	28	4,233	-12.1	39	240	18.8	28	4,126	-16.4	48	306	40.8	24	4,108	-17.9	51	295	38.3
550	28	4,986	-12.6	41	265	23.7	28	4,891	-15.8	36	286	27.2	28	4,886	-16.8	43	240	19.2	28	4,773	-20.4	40	306	43.1	24	4,750	-22.1	48	290	41.6
500	28	5,713	-17.4	43	267	24.7	28	5,609	-20.7		283	32.1	28	5,602	-21.8	44	245	19.8	28	5,475	-25.3	38	305	45.9	24	5,448	-26.3		290	46.6
450	28	6,488	-23.1	42	274	27.2	28	6,374	-26.5		276	34.8	28	6,363	-27.4	42	258	21.2	28	6,230	-30.4		304	47.8	24	6,198	-31.2		289	54.4
400	28	7,346	-29.5	44	279	27.2	28	7,219	-33.2		280	39.6	28	7,207	-33.7		265	22.5	28	7,061	-36.6		300	53.0	24	7,027	-36.7		289	59.7
350	28	8,284	-37.0		284	27.8	28	8,143	-40.7		285	43.9	28	8,129	-40.9		265	25.3	28	7,973	-43.7		299	55.4	24	7,939	-43.3		288	62.8
300	28	9,332	-45.4		286	30.9	28	9,174	-49.0		289	49.2	28	9,158	-49.2		273	29.9	28	8,992	-51.4		298	56.2	24	8,960	-50.5		287	64.1
250	28	10,524	-54.4		286	39.2	28	10,350	-56.5		280	54.8	28	10,331	-57.4		282	36.3	28	10,158	-57.6		299	57.9	24	10,132	-56.2		287	62.8
200	28	11,931	-60.4		281	46.0	28	11,751	-59.6		282	60.4	28	11,724	-61.2		279	35.9	28	11,564	-57.5		298	55.2	24	11,546	-56.9		285	60.0
175	28	12,763	-60.0		281	51.7	27	12,595	-58.8		282	63.0	28	12,553	-60.3		281	34.8	28	12,408	-57.4		296	54.4	24	12,392	-56.5		284	54.0
150	28	13,728	-59.8		283	49.0	27	13,562	-59.6		281	60.6	28	13,521	-58.0		285	27.2	28	13,383	-57.2		294	50.3	24	13,369	-56.8		283	54.2
125	28	14,860	-62.7		280	41.8	27	14,696	-61.9		282	56.5	27	14,669	-59.9		286	24.5	28	14,533	-58.7		293	45.3	24	14,522	-57.7		285	49.5
100	28	16,226	-66.0		284	35.2	27	16,068	-64.6		283	46.0	27	16,059	-61.4		286	22.2	28	15,930	-60.4		292	40.0	24	15,923	-60.0		283	41.6
80	27	17,566	-67.0		289	27.0	26	17,423	-65.8		283	36.5	26	17,441	-62.6		292	18.3	28	17,315	-61.9		292	33.0	24	17,311	-61.1		280	35.0
70	27	18,377	-66.9		293	24.3	26	18,235	-65.6		280	31.9	24	18,274	-62.6		307	13.6	28	18,138	-62.1		291	29.0	23	18,145	-61.3		277	30.9
60	26	19,301	-66.6		301	19.4	24	19,171	-64.6		277	26.4	24	19,220	-62.7		317	10.7	28	19,092	-62.1		288	24.9	23	19,098	-61.6		272	29.5
50	25	20,402	-66.1		315	14.6	22	20,289	-63.1		269	22.0	23	20,350	-62.1		330	9.9	28	20,220	-61.3		282	22.7	22	20,228	-60.2		262	25.5
40	24	21,761	-64.2		323	13.8	17	21,677	-60.2		256	25.6	23	21,730	-61.0		354	8.0	26	21,608	-59.1		258	15.5	22	21,629	-57.3		259	25.6
30	21	23,539	-60.7		324	13.2	13	23,489	-56.0		263	28.2	19	23,519	-58.6		23	8.9	20	23,434	-54.4		252	13.2	22	23,460	-54.9		244	23.1
25	19	24,680	-58.3		322	11.5	10	24,642	-53.9				19	24,666	-57.7		42	8.5	18	24,609	-52.4		254	10.1	22	24,629	-53.8		237	23.5
20	19	26,093	-55.4		300	10.5	5	26,059	-52.4				16	26,070	-55.5		61	10.1	12	26,051	-51.6		240	9.7	22	26,065	-53.5		241	20.6
15	19	27,941	-52.4		286	19.0							8	27,862	-51.2				5	27,910	-51.7				21	27,917	-52.9		246	18.1
10	18	30,584	-47.9		282	32.4																			20	30,545	-50.3		260	22.3
7	17	32,952	-44.9		279	37.7																			19	32,900	-46.5		265	44.1
5	15	35,203	-41.4																						16	35,141	-42.6			

Standard pressure surface (mb.)	PITTSBURGH, PA. 975 MB						PONAPE, CAROLINE IS. 1006 MB						PORTLAND, ME. 1011 MB						RAPID CITY, S. DAK. 904 MB						ST. CLOUD, MINN. 980 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	353	- 9.2	80	255	2.9	28	39	26.1	83	65	7.2	28	20	-11.0	74	271	6.2	28	966	- 3.4	76	324	5.8	28	316	-14.4	77	321	3.1
1000	28	158					28	88	26.0	82	67	8.9	28	104			268	10.3	28	161					28	162				
950	28	555	- 7.9	65	252	8.0	28	533	23.2	83	75	16.3	28	503	- 9.9	59	285	18.5	28	581					28	552	-13.5	69	343	5.1
900	28	975	- 8.9	65	263	14.8	28	1,012	20.1	83	80	17.7	28	917	-11.4	62	293	17.1	28	1,000	- 3.5	71	340	6.2	28	964	-12.8	68	325	9.3
850	28	1,417	-10.1	63	269	19.0	28	1,505	17.7	78	83	17.5	28	1,354	-12.2	60	290	20.2	28	1,457	- 1.3	58	317	19.6	28	1,401	-12.0	61	316	13.2
800	28	1,884	-11.2	60	271	23.9	28	2,022	15.3	72	86	15.2	28	1,818	-12.5	54	280	23.3	28	1,938	- 3.8	59	319	24.5	28	1,865	-12.2	58	309	19.2
750	28	2,381	-12.6	59	275	28.6	28	2,563	12.5	67	89	17.1	28	2,310	-13.5	49	272	29.1	28	2,443	- 6.0	57	321	28.2	28	2,359	-13.0	51	311	24.1
700	28	2,904	-14.2	58	272	35.6	28	3,146	9.4	67	97	16.7	28	2,833	-15.8	51	266	33.8	28	2,983	- 8.9	56	319	31.3	28	2,882	-15.1	50	314	27.4
650	28	3,463	-16.3	56	271	38.1	28	3,753	5.9	67	94	20.0	28	3,387	-18.3	52	266	40.6	28	3,547	-12.5	51	319	33.2	28	3,438	-17.8	50	313	32.1
600	28	4,064	-19.2	53	271	41.4	28	4,410	2.3	58	91	21.2	28	3,984	-21.0	52	263	44.5	28	4,160	-16.3	47	317	34.0	28	4,034	-20.9	47	313	34.8
550	28	4,702	-22.8	48	272	45.3	28	5,104	- 1.6	56	87	23.3	28	4,618	-24.5	48	262	53.4	28	4,808	-20.4	42	316	37.5	28	4,671	-24.8	45	316	36.9
500	28	5,401	-26.9	44	271	50.9	28	5,863	- 6.0	58	93	23.1	28	5,312	-28.7	45	262	57.9	28	5,509	-25.2	43	315	38.7	28	5,360	-28.9	41	318	38.1
450	28	6,146	-31.9		268	58.7	28	6,679	-10.7	52	96	25.8	28	6,056	-33.2	46	261	63.5	28	6,257	-30.8	40	312	42.0	28	6,099	-33.8		317	42.7
400	28	6,978	-37.5		267	64.9	28	7,579	-16.1	41	94	25.3	28	6,878	-38.9		259	62.8	28	7,091	-37.0		310	46.2	28	6,922	-39.6		317	48.2
350	28	7,888	-43.3		268	73.6	28	8,572	-23.0		92	25.3	28	7,783	-44.7		261	68.6	28	8,000	-44.2		312	47.4	28	7,823	-46.1		315	48.2
300	28	8,911	-49.9		264	75.0	28	9,683	-31.3		91	23.7	28	8,804	-49.7		258	73.3	28	9,017	-51.6		314	53.2	28	8,834	-52.3		317	49.0
250	28	10,088	-54.9		262	75.0	28	10,947	-41.6		98	21.6	28	9,986	-53.1		255	70.1	28	10,181	-58.4		314	52.7	28	10,001	-56.3		313	50.7
200	28	11,510	-55.6		261	77.1	28	12,420	-54.3		102	21.4	28	11,424	-52.8		256	67.8	28	11,579	-59.6		313	51.1	28	11,418	-55.6		306	44.1
175	28	12,360	-55.3		265	72.3	28	13,262	-61.3		101	19.2	28	12,286	-52.6		254	64.9	28	12,417	-58.4		310	48.8	28	12,269	-55.6		306	44.7
150	28	13,342	-56.0		263	67.2	28	14,202	-68.9		96	20.4	28	13,281	-53.0		254	64.3	28	13,388	-58.1		307	42.0	28	13,251	-55.7		303	41.8
125	28	14,498	-57.4		262	62.4	27	15,269	-76.9		94	22.2	28	14,453	-54.4		252	56.0	28	14,533	-59.6		307	39.4	28	14,409	-56.8		304	39.8
100	28	15,903	-58.9		264	50.3	26	16,527	-82.8		101	21.4	28	15,877	-55.7		254	49.0	28	15,925	-61.2		309	33.6	27	15,818	-58.7		307	32.8
80	28	17,301	-59.0		261	38.1	25	17,777	-80.4		111	7.2	28	17,299	-55.6		252	39.6	27	17,305	-62.3		312	30.9	26	17,220	-59.7		302	29.5
70	28	18,136	-59.4		258	35.6	23	18,535	-78.7		266	2.5	28	18,150	-55.7		248	37.3	27	18,136	-62.5		311	25.6	26	18,060	-60.0		301	26.0
60	28	19,101	-59.9		254	32.6	22	19,422	-75.2		296	2.5	28	19,133	-54.3		245	30.9	27	19,083	-62.7		315	21.0	25	19,016	-60.3		305	22.3
50	28	20,247	-56.8		256	34.0	21	20,489	-70.7		86	10.5	28	20,308	-52.1		236	21.0	27	20,206	-62.0		316	17.3	25	20,156	-59.3		301	17.7
40	28	21,671	-54.1		245	23.9	20	21,823	-66.7		87	32.3	26	21,747	-50.9		234	16.9	26	21,592	-59.8		320	12.2	25	21,561	-56.7		293	14.8
30	28	23,522	-53.0		236	20.0	20	23,589	-60.5		91	52.1	26	23,621	-51.3		220	9.7	24	23,413	-56.5		333	6.2	24	23,395	-54.6		275	7.6
25	28	24,697	-53.5		221	12.6	19	24,736	-56.9		90	53.2	25	24,800	-52.8		212	6.8	24	24,576	-54.5		345	3.3	24	24,567	-53.0		261	8.7
20	28	26,132	-53.6		222	9.7	17	26,173	-52.3		91	53.0	22	26,240	-53.3		212	5.2	21	26,008	-53.2		322	3.5	24	26,009	-52.5		223	9.9
15	27	27,989	-52.7		240	7.6	15	28,048	-47.4		93	47.4	13	28,100	-51.9				16	27,879	-52.1		280	8.9	21	27,887	-52.2		223	12.2
10	25	30,620	-51.0		256	11.1	10	30,735	-44.0										8	30,514	-50.3				20	30,511	-51.2		252	14.0
7	23	32,976	-46.8		260	26.2																			16	32,847	-49.1		273	18.7
5	18	35,205	-43.0																						14	35,034	-47.4			

Standard pressure surface (mb.)	ST. PAUL IS., ALASKA 1006 MB						SALEM, OREG. 1011 MB						SALT LAKE CITY, UTAH 876 MB						SAN ANTONIO, TEXAS 990 MB						SAN DIEGO, CALIF. 1003 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	28	10	- 6.1	82	26	14.0	28	61	6.5	91	185	3.3	28	1,288	.1	72	167	5.6	28	243	5.9	75	4	3.1	28	124	12.0	87	36	1.4
1000	28	54			21	13.8	28	153	7.8	84	193	5.4	28	208					28	163					28	151			48	1.6
950	28	455	- 7.8	77	27	17.5	28	576	9.1	70	199	7.8	28	623					28	584	8.8	53	33	1.7	28	584	14.0	64	346	3.1
900	28	875	- 7.7	59	27	15.7	28	1,025	7.2	63	209	12.6	28	1,066					28	1,033	8.7	41	327	1.0	28	1,040	13.6	49	331	6.4
850	28	1,319	- 8.3	51	29	12.6	28	1,494	4.8	64	218	15.3	28	1,527	4.0	56	171	5.8	28	1,505	8.1	35	266	3.9	28	1,520	11.4	43	319	7.8
800	28	1,788	- 9.7	44	29	9.7	28	1,986	2.2	60	219	16.9	28	2,019	2.0	51	218	3.3	28	2,004	5.9		276	7.4	28	2,024	8.4	41	317	8.9
750	28	2,283	-11.7		22	10.9	28	2,504	- .9	58	228	18.3	28	2,538	- 1.4	47	286	5.8	27	2,530	3.2		285	13.4	28	2,549	5.5	34	315	9.1
700	28	2,810	-14.4		21	11.3	28	3,053	- 3.9	50	234	18.5	28	3,083	- 5.0	45	302	10.7	27	3,088	.1		290	17.5	28	3,116	2.3	28	309	10.9
650	28	3,366	-17.7		12	11.1	28	3,631	- 7.4	45	236	18.8	28	3,661	- 8.2	43	306	15.2	27	3,675	- 3.0		288	22.9	28	3,701	- 1.5		304	14.2
600	28	3,963	-21.4		9	10.1	28	4,253	-11.8	43	240	19.6	28	4,280	-11.9	40	308	19.2	27	4,308	- 7.2		285	25.3	28	4,345	- 5.6		301	16.3
550	28	4,594	-25.9		3	10.1	28	4,909	-16.1	42	243	19.4	28	4,937	-16.4	42	305	24.1	27	4,977	-11.7		282	29.0	28	5,010	-10.3		299	19.8
500	28	5,283	-30.4		347	13.0	28	5,626	-20.9	43	246	20.4	28	5,651	-21.4	42	302	27.4	27	5,703	-17.0		284	29.5	28	5,749	-15.7		295	21.4
450	28	6,021	-35.4		345	15.9	28	6,390	-26.2		250	24.9	28	6,414	-27.1	43	309	27.6	27	6,479	-22.9		280	35.0	28	6,524	-21.9		290	23.5
400	28	6,836	-41.4		343	16.5	28	7,238	-32.7	44	258	25.1	28	7,258	-33.4	40	307	30.3	27	7,337	-29.3		281	41.2	28	7,392	-28.6		287	27.6
350	28	7,730	-47.7		340	16.9	28	8,164	-40.1		260	28.0	28	8,181	-40.5		305	32.6	27	8,277	-36.1		280	48.6	28	8,335	-35.6		285	31.7
300	28	8,734	-53.4		338	16.7	28	9,199	-48.2		265	32.1	28	9,214	-48.4		306	37.3	27	9,329	-44.0		278	55.0	28	9,389	-43.9		287	37.1
250	27	9,893	-55.9		337	10.7	28	10,377	-56.6		278	39.2	28	10,390	-57.0		306	37.5	27	10,531	-52.1		275	67.0	28	10,591	-52.3		292	45.5
200	27	11,321	-52.9		328	3.5	28	11,774	-61.3		280	38.3	28	11,784	-61.4		302	41.0	27	11,960	-56.6		273	79.9	28	12,013	-57.3		291	54.6
175	27	12,186	-51.1		155	1.6	28	12,603	-60.2		276	36.5	28	12,614	-59.9		300	42.7	27	12,802	-59.0		273	80.8	28	12,856	-58.1		288	55.6
150	27	13,189	-50.6		161	3.9	28	13,571	-58.5		275	33.8	28	13,578	-59.7		299	42.6	27	13,763	-61.4		275	74.2	28	13,821	-60.9		285	56.2
125	27	14,378	-50.2		139	5.6	28	14,714	-60.0		279	29.3	28	14,712	-62.2		300	38.3	26	14,878	-65.6		278	61.0	28	14,943	-65.3		284	48.4
100	26	15,827	-50.0		150	8.0	28	16,101	-62.6		284	22.9	28	16,082	-64.7		302	32.4	26	16,220	-69.7		277	49.4	28	16,285	-69.2		293	40.4
80	26	17,280	-51.2		144	8.9	28	17,472	-63.5		299	17.5	27	17,439	-65.4		303	28.4	25	17,546	-71.0		272	37.3	27	17,611	-70.7		293	30.5
70	26	18,150	-51.8		139	9.1	27	18,294	-63.7		316	14.2	27	18,257	-65.4		308	25.3	25	18,348	-69.8		273	33.0	27	18,407	-69.3		298	26.6
60	25	19,142	-52.6		136	8.5	26	19,244	-64.0		330	10.5	25	19,184	-65.1		313	19.6	24	19,262	-67.7		273	25.6	27	19,326	-68.3		304	19.6
50	24	20,319	-53.5		125	8.2	25	20,367	-63.4		357	11.5	25	20,296	-64.9		319	16.7	22	20,376	-63.9		267	20.0	26	20,422	-66.7		307	15.2
40	23	21,748	-54.2		119	9.9	23	21,750	-62.1		20	11.7	20	21,663	-63.6		335	12.0	20	21,760	-59.4		262	22.5	24	21,782	-63.5		300	13.6
30	22	23,595	-54.2		103	11.7	23	23,538	-59.7		34	12.2	18	23,455	-58.8		353	11.9	16	23,577	-55.9		254	23.7	24	23,570	-58.4		281	15.2
25	18	24,753	-54.3		98	11.9	21	24,677	-58.2		36	11.5	16	24,606	-57.5		357	9.5	15	24,743	-54.3		256	16.7	22	24,725	-55.2		271	18.1
20	15	26,191	-54.7		74	16.5	21	26,087	-56.8		32	10.3	14	26,011	-55.4		315	8.5	15	26,177	-53.7		258	10.5	21	26,154	-51.8		271	24.3
15	10	28,025	-54.2				20	27,923	-54.4		15	8.0	10	27,871	-52.5				[illegible]	28,002	-55.0				12	28,016	-49.1			
10							12	30,519	-52.8																7	30,673	-44.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

FEBRUARY 1963

SAN JUAN, P. R. — 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	6	21.7	88	122	2.7
1000	28	148	22.6	83	105	9.3
950	28	588	19.9	81	99	13.6
900	28	1,059	16.8	79	97	13.4
850	28	1,544	13.7	73	96	12.4
800	28	2,053	11.5	64	93	10.7
750	28	2,586	10.1	44	98	10.7
700	28	3,163	7.4		94	8.2
650	28	3,763	4.7		110	7.4
600	28	4,420	1.6		122	5.8
550	28	5,106	-2.5		165	3.3
500	28	5,864	-7.2		211	4.5
450	28	6,671	-12.6		251	6.8
400	28	7,566	-19.3		274	11.1
350	28	8,544	-26.4		269	18.3
300	28	9,640	-34.6		269	22.2
250	28	10,888	-44.5		258	31.1
200	28	12,346	-55.8		261	36.5
175	28	13,183	-62.0		266	37.1
150	27	14,119	-68.7		268	34.4
125	27	15,195	-74.3		265	22.3
100	27	16,480	-78.4		261	17.5
80	27	17,746	-78.9		255	7.8
70	27	18,517	-77.2		269	2.9
60	26	19,406	-72.8		31	1.0
50	26	20,495	-66.0		56	3.5
40	26	21,866	-61.3		45	5.6
30	26	23,669	-57.3		71	13.2
25	25	24,831	-54.3		79	15.0
20	21	26,257	-52.1		99	16.5
15	18	28,109	-51.5		103	6.4
10	14	30,756	-45.8		274	3.9
7	7	33,034	-42.9			
5						

SANTA MONICA, CALIF. — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	38	13.7	78	28	1.9
1000	28	151	15.2	70	29	1.7
950	28	586	14.9	57	13	3.5
900	28	1,043	14.1	44	336	4.7
850	28	1,523	11.5	42	310	6.2
800	28	2,027	8.7	41	301	7.0
750	28	2,556	5.6	37	298	9.7
700	28	3,119	2.0		299	12.8
650	28	3,706	-2.0		299	14.6
600	28	4,344	-6.3	33	298	17.9
550	28	5,011	-11.1	30	293	18.7
500	28	5,744	-16.4	31	288	20.6
450	28	6,519	-22.4		291	21.0
400	28	7,383	-29.0		286	24.5
350	28	8,325	-36.0		289	28.6
300	28	9,377	-44.1		294	32.8
250	28	10,569	-52.7		292	42.2
200	28	11,995	-58.3		288	51.1
175	28	12,834	-58.5		291	51.3
150	28	13,799	-60.7		287	49.9
125	28	14,921	-64.9		287	45.9
100	28	16,269	-68.3		290	38.5
80	28	17,599	-70.1		295	30.5
70	28	18,399	-69.5		300	27.8
60	28	19,318	-68.3		308	22.5
50	26	20,419	-67.0		304	20.0
40	23	21,785	-64.4		308	14.2
30	23	23,562	-60.0		297	15.7
25	22	24,707	-56.4		290	15.0
20	21	26,134	-52.6		278	18.3
15	21	28,005	-49.7		271	24.1
10	16	30,675	-46.3		269	16.9
7	6	33,081	-43.2			
5						

SAULT STE. MARIE, MICH. — 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	221	-16.3	74	321	1.9
1000	28	127				
950	28	513	-14.9	68	309	5.8
900	28	924	-15.4	68	309	9.1
850	28	1,355	-16.0	64	296	13.4
800	28	1,811	-16.6	64	294	20.4
750	28	2,297	-17.2	56	294	21.8
700	28	2,811	-19.1	50	298	23.5
650	28	3,359	-21.9	45	297	25.6
600	28	3,945	-25.2	45	299	28.2
550	28	4,570	-28.6	42	295	28.4
500	28	5,250	-32.5		294	33.6
450	28	5,986	-37.2		293	35.2
400	28	6,791	-42.3		293	39.1
350	28	7,684	-47.7		291	42.2
300	28	8,692	-51.8		286	45.9
250	28	9,867	-54.0		286	47.6
200	28	11,302	-53.0		284	43.9
175	27	12,151	-52.9		289	41.0
150	26	13,144	-53.3		284	39.1
125	26	14,316	-54.3		283	37.1
100	26	15,743	-55.7		279	34.8
80	26	17,160	-56.8		277	30.7
70	26	18,017	-56.6		275	28.4
60	26	18,986	-55.9		270	25.5
50	26	20,149	-54.6		257	20.4
40	26	21,584	-52.5		247	17.3
30	26	23,453	-50.5		233	17.7
25	26	24,643	-50.7		226	14.4
20	24	26,097	-51.4		217	13.6
15	24	27,961	-52.5		232	12.2
10	21	30,602	-51.9		262	11.3
7	21	32,937	-49.0		269	17.3
5	21	35,153	-45.2			

SHEMYA, ALASKA — 1001 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	38	.9	85	84	12.6
1000	28	43			89	12.2
950	28	450	-2.2	76	86	16.5
900	28	881	-5.5	79	94	16.7
850	28	1,327	-8.2	75	106	16.5
800	28	1,796	-10.5	65	107	16.3
750	28	2,292	-12.3	48	107	14.0
700	28	2,816	-14.7	39	108	15.0
650	28	3,372	-17.9	36	108	15.3
600	28	3,969	-21.6		114	15.2
550	28	4,601	-25.9		120	15.5
500	28	5,289	-30.7		118	15.9
450	28	6,022	-36.2		126	15.9
400	28	6,837	-42.5		134	19.4
350	28	7,726	-48.8		138	22.2
300	28	8,724	-55.6		139	22.0
250	28	9,874	-58.7		145	21.0
200	28	11,288	-54.3		152	16.1
175	27	12,146	-52.3		155	13.6
150	27	13,146	-51.2		162	11.3
125	26	14,334	-50.3		169	10.1
100	25	15,789	-50.3		173	8.9
80	23	17,247	-50.3		172	9.5
70	22	18,119	-50.9		160	9.9
60	22	19,121	-51.1		151	9.3
50	20	20,301	-51.5		146	9.7
40	19	21,748	-52.6		130	13.0
30	18	23,609	-52.7		118	12.6
25	18	24,785	-53.0		108	14.6
20	18	26,223	-53.2		95	18.3
15	15	28,080	-51.8		93	24.1
10	8	30,757	-50.0			
7	6	32,980	-50.5			
5						

SHREVEPORT, LA. — 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	79	3.7	74	55	1.4
1000	28	168	3.7	64	62	1.9
950	28	590	4.6	55	288	.8
900	28	1,027	5.1	42	295	7.4
850	28	1,492	3.8	36	302	11.9
800	28	1,983	1.5	38	303	14.0
750	28	2,498	-1.3	38	298	18.5
700	28	3,048	-4.1	36	295	21.0
650	28	3,627	-7.1	35	289	24.9
600	28	4,250	-10.6		286	28.0
550	28	4,911	-14.8		285	30.9
500	28	5,629	-19.9		288	34.2
450	28	6,396	-25.8		290	37.7
400	28	7,244	-32.3		282	39.8
350	28	8,172	-39.4		276	42.6
300	28	9,210	-47.0		273	47.4
250	28	10,398	-54.2		271	59.3
200	28	11,815	-57.1		271	73.6
175	27	12,648	-57.8		271	74.8
150	27	13,616	-59.7		271	73.1
125	26	14,752	-63.0		270	64.5
100	23	16,116	-65.9		268	53.8
80	23	17,464	-67.1		270	39.6
70	23	18,278	-67.2		271	32.3
60	23	19,201	-65.4		267	29.3
50	22	20,316	-62.4		262	25.5
40	22	21,704	-58.7		257	25.6
30	22	23,529	-55.8		256	25.3
25	22	24,692	-55.1		261	19.0
20	21	26,131	-53.7		264	16.9
15	21	27,983	-52.2		258	15.9
10	20	30,633	-47.9		269	18.3
7	16	33,030	-42.6		265	35.9
5	12	35,287	-39.4			

SPOKANE, WASH. — 934 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	722	.4	85	165	2.1
1000	28	174				
950	28	588				
900	28	1,026	3.0	75	197	7.0
850	28	1,489	2.5	64	231	8.7
800	28	1,978	.6	58	254	9.9
750	28	2,490	-2.2	54	270	11.7
700	28	3,038	-5.6	54	273	14.2
650	28	3,611	-8.8	52	280	19.2
600	28	4,232	-12.4	48	288	21.2
550	28	4,883	-16.6	46	287	24.1
500	28	5,601	-21.8	42	287	25.1
450	28	6,359	-27.4		288	24.1
400	28	7,204	-34.0		288	28.2
350	28	8,124	-41.6		287	29.0
300	28	9,152	-49.5		293	33.2
250	28	10,324	-56.9		292	37.5
200	28	11,720	-60.9		291	44.1
175	27	12,551	-59.4		299	37.9
150	27	13,521	-57.7		297	34.6
125	27	14,667	-58.8		298	30.9
100	27	16,062	-60.8		304	26.4
80	27	17,446	-62.0		319	19.4
70	27	18,274	-62.2		326	17.5
60	27	19,224	-62.2		332	16.1
50	27	20,353	-60.9		350	13.4
40	26	21,743	-60.2		355	10.7
30	24	23,552	-58.2		22	10.5
25	22	24,721	-56.3		27	11.7
20	17	26,146	-55.0		34	5.2
15	12	27,970	-53.0			
10						
7						

SWAN ISLAND, W. I. — 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	10	24.7	78	60	6.2
1000	28	130	23.9	77	62	7.2
950	28	579	20.5	77	78	8.5
900	28	1,042	17.5	72	105	6.6
850	28	1,530	14.7	61	118	5.6
800	28	2,041	11.9	59	133	3.5
750	28	2,582	9.3	52	173	3.3
700	28	3,149	7.2	42	196	3.1
650	28	3,759	4.7		222	3.5
600	28	4,406	1.6		232	7.4
550	28	5,093	-2.4		249	10.1
500	28	5,853	-7.3		251	14.8
450	28	6,658	-13.1		248	20.8
400	28	7,554	-19.7		249	27.6
350	28	8,531	-27.0		251	30.3
300	28	9,625	-35.2		258	33.4
250	28	10,870	-44.9		247	43.9
200	27	12,325	-55.7		249	55.0
175	27	13,164	-61.5		251	54.6
150	26	14,110	-68.0		255	47.4
125	26	15,188	-74.1		257	37.1
100	24	16,477	-79.0		261	28.4
80	23	17,740	-79.9		255	16.9
70	23	18,505	-77.9		249	13.4
60	22	19,392	-72.3		270	6.6
50	22	20,482	-66.3		357	3.5
40	22	21,849	-61.7		69	10.7
30	22	23,648	-57.5		80	16.9
25	22	24,807	-54.3		77	19.6
20	21	26,248	-50.9		78	21.2
15	9	28,091	-50.2			
10						
7						

TAMPA, FLA. — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	8	11.0	88	78	1.6
1000	28	149	11.5	84	74	1.0
950	28	575	10.6	76	249	3.7
900	28	1,028	9.8	65	255	10.1
850	28	1,502	8.4	55	262	14.2
800	28	2,002	7.0	50	266	20.2
750	27	2,527	4.2	44	268	22.9
700	27	3,089	1.3		265	24.9
650	27	3,676	-1.8		262	29.5
600	27	4,315	-5.6		261	33.4
550	27	4,987	-9.4		255	37.5
500	27	5,724	-14.1		254	41.6
450	27	6,510	-19.8		253	45.5
400	27	7,380	-26.0		255	53.2
350	27	8,333	-32.6		255	62.2
300	27	9,401	-40.5		253	67.2
250	27	10,620	-49.0		252	76.4
200	27	12,059	-56.2		252	83.4
175	27	12,901	-59.6		254	79.9
150	24	13,851	-63.1		255	77.9
125	24	14,961	-67.2		258	60.2
100	21	16,287	-71.1		257	50.3
80	21	17,612	-70.5		256	35.6
70	20	18,418	-68.4		256	26.6
60	20	19,340	-65.4		256	18.8
50	19	20,456	-62.3		265	13.0
40	19	21,847	-59.4		283	4.7
30	15	23,663	-56.7		55	6.4
25	14	24,824	-54.6		40	5.1
20	9	26,252	-52.5			
15						
10						
7						

TATOOSH IS., WASH — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	31	8.8	86	110	9.5
1000	28	136			128	8.5
950	28	559	7.3	76	171	12.4
900	28	1,003	4.9	75	186	15.9
850	28	1,468	2.9	65	201	18.7
800	28	1,957	.5	62	212	19.4
750	28	2,471	-2.2	60	217	19.2
700	28	3,018	-5.3	56	218	20.2
650	28	3,591	-9.0	51	221	21.2
600	28	4,210	-13.0	51	230	22.3
550	28	4,864	-17.1	50	234	25.5
500	28	5,576	-22.1	50	235	25.5
450	28	6,332	-27.7	48	240	26.2
400	28	7,178	-34.2		241	28.4
350	28	8,098	-41.4		246	31.9
300	28	9,126	-49.4		254	34.6
250	28	10,298	-57.4		265	44.1
200	28	11,691	-61.0		266	38.1
175	28	12,524	-58.9		266	35.2
150	28	13,496	-57.3		273	29.7
125	28	14,645	-58.7		275	25.3
100	26	16,048	-60.2		282	20.8
80	26	17,435	-61.3		292	15.3
70	25	18,266	-61.7		310	13.2
60	25	19,220	-61.9		325	11.1
50	25	20,349	-61.6		352	10.3
40	23	21,733	-60.7		1	8.7
30	20	23,530	-58.3		22	8.5
25	20	24,679	-57.3		34	8.9
20	20	26,094	-56.1		43	9.9
15	16	27,919	-54.8		20	2.9
10	11	30,556	-52.4		294	3.1
7	8	32,927	-51.0			

TOPEKA, KANS. — 987 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	269	-3.4	75	287	2.1
1000	28	165				
950	28	571	-3.3	63	293	7.8
900	28	999	-2.7	57	293	13.2
850	28	1,453	-2.0	54	301	19.2
800	28	1,934	-3.5	52	305	22.0
750	28	2,439	-6.1	52	303	26.0
700	28	2,980	-8.9	49	305	29.3
650	28	3,545	-12.1	47	305	32.8
600	28	4,159	-15.5	40	302	38.1
550	28	4,808	-19.3		299	39.1
500	28	5,514	-23.9	39	297	42.4
450	28	6,269	-29.3	42	294	43.1
400	28	7,107	-35.6		294	45.3
350	28	8,022	-43.0		290	48.6
300	28	9,044	-51.2		290	54.4
250	28	10,211	-57.8		286	56.9
200	28	11,612	-59.0		285	50.9
175	28	12,451	-58.5		284	52.5
150	27	13,410	-58.0		286	49.5
125	27	14,556	-59.4		287	45.5
100	27	15,947	-61.7		285	40.8
80	27	17,322	-63.2		283	36.3
70	27	18,143	-63.3		282	29.3
60	26	19,087	-63.3		279	25.6
50	25	20,212	-62.2		275	22.5
40	24	21,597	-59.9		271	21.0
30	18	23,409	-55.1		253	23.7
25	18	24,580	-52.7		258	23.9
20	16	26,023	-51.7		250	21.4
15	12	27,870	-52.6		254	26.0
10	7	30,479	-49.9			
7						

TRUK, CAROLINE IS. — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	2	26.9	80	58	5.2
1000	28	93	26.4	89	63	8.0
950	28	542	23.5	81	82	16.1
900	28	1,018	20.5	80	87	17.3
850	28	1,512	17.7	78	92	15.2
800	28	2,030	15.3	71	94	16.7
750	28	2,579	12.6	67	93	17.9
700	28	3,153	9.4	66	96	17.9
650	28	3,769	5.9	64	99	19.6
600	28	4,418	2.3	62	99	21.0
550	28	5,113	-1.5	60	100	21.6
500	28	5,872	-5.9	61	101	21.2
450	28	6,688	-10.6	56	105	21.8
400	28	7,591	-16.1	45	105	23.1
350	28	8,583	-22.8		103	23.3
300	28	9,695	-31.2		105	22.3
250	28	10,960	-41.5		113	22.2
200	28	12,434	-54.0		115	21.2
175	28	13,277	-61.1		116	21.2
150	28	14,217	-68.7		112	19.2
125	28	15,287	-76.5		109	20.4
100	27	16,554	-81.7		112	19.8
80	25	17,808	-79.9		110	10.7
70	25	18,572	-76.8		77	3.1
60	25	19,459	-74.5		59	2.5
50	25	20,531	-70.1		92	11.1
40	24	21,872	-65.3		97	36.1
30	23	23,649	-59.7		94	50.1
25	23	24,799	-55.9		97	49.7
20	22	26,229	-51.6		100	56.9
15	22	28,114	-47.3		101	42.9
10	17	30,811	-42.5		90	13.2
7	6	33,137	-41.9			
5						

TUCSON, ARIZ. — 926 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	789	8.2	59	144	6.6
1000	28	148				
950	28	577				
900	28	1,030	13.9	40	144	4.9
850	28	1,509	11.3	37	315	.6
800	28	2,012	7.8	48	292	4.1
750	28	2,536	4.5	37	289	7.8
700	28	3,101	1.2	34	291	10.5
650	28	3,686	-2.6	29	299	12.4
600	28	4,323	-6.8		301	16.7
550	28	4,987	-11.2		296	19.0
500	28	5,722	-16.2		299	22.7
450	28	6,499	-21.9		299	25.6
400	28	7,364	-28.5		297	28.4
350	28	8,306	-36.1		291	32.4
300	28	9,357	-44.6		292	37.3
250	28	10,554	-53.2		291	46.0
200	28	11,977	-56.9		286	54.8
175	28	12,821	-57.8		286	56.5
150	28	13,789	-59.9		287	57.7
125	28	14,915	-65.0		289	46.6
100	28	16,261	-68.7		292	44.5
80	27	17,595	-69.7		294	32.1
70	26	18,398	-68.5		296	28.0
60	26	19,317	-67.2		303	22.7
50	26	20,422	-65.1		299	15.2
40	26	21,793	-61.5		282	16.9
30	24	23,597	-56.9		271	20.4
25	24	24,762	-53.6		263	21.6
20	24	26,208	-50.6		260	23.1
15	23	28,094	-48.4		275	12.6
10	21	30,806	-42.2		255	11.7
7	14	33,261	-35.6		272	19.8
5	7	35,605	-31.8			

WAKE IS., PACIFIC AREA — 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	5	24.5	74	60	4.1
1000	28	136	23.5	73	63	5.4
950	28	582	19.8	77	68	4.3
900	28	1,047	16.5	77	19	.8
850	28	1,532	13.9	71	266	2.1
800	28	2,043	11.9	55	272	7.0
750	28	2,580	11.3	31	273	11.7
700	28	3,156	8.8		272	15.5
650	28	3,760	5.8		269	19.6
600	28	4,416	2.0		265	21.8
550	28	5,107	-2.1		265	24.5
500	28	5,864	-6.8		269	26.8
450	28	6,673	-11.2		272	32.1
400	28	7,575	-16.5		269	33.6
350	28	8,566	-23.2		267	32.8
300	28	9,675	-32.0		273	33.8
250	28	10,934	-42.8		280	35.8
200	28	12,401	-54.6		282	36.3
175	28	13,242	-61.1		279	32.1
150	28	14,183	-68.2		277	31.1
125	26	15,256	-75.5		269	27.0
100	26	16,524	-81.7		264	23.7
80	24	17,770	-81.5		259	16.7
70	23	18,523	-78.1		263	10.9
60	23	19,419	-71.5		247	1.4
50	22	20,512	-65.4		86	5.8
40	22	21,881	-61.9		82	13.8
30	22	23,672	-58.6		94	16.9
25	22	24,825	-55.5		87	15.0
20	21	26,258	-52.6		80	13.0
15	19	28,127	-49.9		73	11.9
10	19	30,804	-44.7		87	6.6
7	18	33,197	-39.9		83	3.3
5	14	35,497	-35.8		231	7.0

WASHINGTON, D. C. — 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	84	-6.1	67	310	4.1
1000	28	152			300	4.5
950	28	557	-4.5	50	291	10.1
900	28	980	-5.9	48	288	15.2
850	28	1,426	-7.2	51	287	17.5
800	28	1,898	-7.6	47	281	22.7
750	28	2,402	-9.2	47	273	26.2
700	28	2,931	-11.3	49	269	30.5
650	28	3,497	-14.1	47	264	35.4
600	28	4,101	-16.8	45	264	38.1
550	28	4,753	-20.4	47	264	45.9
500	28	5,451	-24.7	48	262	50.1
450	28	6,206	-29.6	45	262	58.5
400	28	7,041	-35.2		262	65.3
350	28	7,959	-41.6		261	72.7
300	28	8,987	-48.8		262	79.9
250	28	10,170	-54.3		259	81.6
200	28	11,591	-55.8		261	81.0
175	28	12,441	-55.5		260	72.9
150	28	13,422	-56.6		261	69.0
125	28	14,574	-58.2		263	62.8
100	28	15,970	-60.5		263	50.9
80	28	17,358	-60.6		260	42.7
70	28	18,197	-60.6		260	40.8
60	27	19,150	-59.2		259	35.6
50	26	20,296	-57.3		252	28.4
40	25	21,720	-54.3		251	22.9
30	25	23,567	-54.2		238	18.3
25	25	24,735	-54.5		231	11.5
20	23	26,166	-54.0		236	10.1
15	18	28,019	-53.6		231	8.0
10	12	30,669	-50.1		245	6.8
7	9	33,037	-45.3			
5	6	35,269	-42.3			

WINNEMUCCA, NEV. — 872 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	1,310	1.9	80		.0
1000	28	193				
950	28	614				
900	28	1,060				
850	28	1,523	5.2	56	188	2.3
800	28	2,017	3.5	51	239	5.6
750	28	2,539	.4	52	264	8.7
700	28	3,088	-3.1	51	267	13.2
650	28	3,668	-6.6	48	269	13.8
600	28	4,292	-10.5	45	275	17.3
550	28	4,948	-14.9	45	285	19.8
500	27	5,674	-19.9	45	288	22.7
450	27	6,444	-25.2	42	288	24.5
400	27	7,292	-31.6		289	26.6
350	27	8,222	-39.1		294	28.6
300	27	9,260	-47.4		297	33.0
250	27	10,443	-55.6		303	37.5
200	27	11,843	-60.9		307	40.0
175	27	12,673	-59.7		301	43.1
150	27	13,638	-59.9		301	38.5
125	27	14,771	-62.1		302	35.2
100	27	16,141	-64.8		304	29.1
80	26	17,496	-65.7		314	21.4
70	25	18,309	-65.6		320	17.9
60	24	19,245	-65.3		321	15.0
50	24	20,358	-64.6		341	12.2
40	22	21,724	-63.1		5	11.5
30	19	23,502	-58.9		15	8.9
25	16	24,652	-56.8		25	7.2
20	15	26,078	-55.1		91	3.7
15	8	27,976	-49.3			
10						
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	WINSLOW, ARIZ. 855 MB						YAKUTAT, ALASKA 1004 MB						YUCCA FLAT, NEV. 884 MB						YUMA, ARIZ. 1001 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	24	1,492	- .5	79	194	2.5	28	12	1.1	87	98	5.1	27	1,196	2.2	67	348	1.7	28	131	12.4	32	47	2.5
1000	24	215					28	46			111	7.2	27	186					28	135			47	3.3
950	24	632					28	461	.9	76	123	15.2	27	610					28	571	18.2	29	329	7.0
900	24	1,074					28	893	- 1.4	74	132	16.1	27	1,054					28	1,034	15.5	29	326	7.8
850	24	1,537	.4	70	216	2.1	28	1,347	- 3.4	76	141	15.7	27	1,521	8.2	41	347	3.7	28	1,515	12.2	31	335	6.8
800	24	2,028	3.5	48	316	5.6	28	1,825	- 6.0	75	155	15.5	27	2,020	5.6	42	351	2.7	28	2,020	9.0	30	317	8.0
750	24	2,548	.9	45	329	9.1	28	2,326	- 9.0	74	163	16.7	27	2,541	2.5	41	331	3.7	28	2,544	5.6	30	320	8.4
700	24	3,101	- 2.2	41	328	12.8	28	2,859	-12.3	71	170	17.7	27	3,100	- .2	36	309	7.2	28	3,111	2.2	26	311	10.7
650	24	3,681	- 5.6	36	319	16.7	28	3,420	-15.7	64	183	17.3	27	3,684	- 4.1	34	294	8.5	28	3,699	- 1.6	23	305	12.6
600	24	4,311	- 9.3		316	19.6	28	4,022	-19.6	57	187	17.7	27	4,315	- 8.4	35	300	13.0	28	4,337	- 5.9	26	301	14.2
550	24	4,971	-13.7		314	24.5	28	4,659	-24.1	54	204	19.8	27	4,977	-12.9	34	300	19.0	28	5,005	-10.6	26	305	16.7
500	24	5,696	-18.7		314	27.0	28	5,352	-29.0	50	207	23.7	27	5,704	-18.2		296	23.5	28	5,739	-15.9	24	305	21.2
450	24	6,465	-24.3		315	31.5	28	6,091	-34.6		211	28.6	27	6,473	-23.9	36	292	26.4	28	6,516	-21.9	23	298	24.1
400	24	7,321	-30.8		312	39.1	28	6,911	-40.4		212	31.9	27	7,333	-30.3		292	28.8	28	7,380	-28.7	25	298	27.4
350	24	8,255	-38.1		306	41.6	28	7,809	-46.7		212	36.7	27	8,267	-38.0		294	26.6	28	8,322	-36.0	26	292	33.2
300	24	9,297	-46.3		309	47.4	28	8,817	-52.3		212	35.4	27	9,310	-46.3		286	33.4	28	9,373	-44.5		295	36.5
250	24	10,484	-55.0		306	53.0	28	9,986	-55.0		224	31.5	27	10,499	-54.7		288	37.7	27	10,575	-52.9		295	42.7
200	24	11,888	-59.8		298	58.1	28	11,420	-52.4		238	25.3	27	11,906	-60.0		290	49.0	27	11,994	-57.7		296	52.1
175	24	12,725	-59.4		299	55.4	28	12,285	-51.5		238	20.8	27	12,741	-58.8		297	49.5	25	12,856	-57.6		286	54.0
150	24	13,686	-61.2		295	56.9	28	13,286	-51.2		252	20.6	27	13,707	-60.2		297	46.2	25	13,824	-59.9		288	54.8
125	24	14,813	-63.6		296	56.2	28	14,469	-52.0		257	12.6	27	14,837	-63.2		296	45.5	23	14,943	-65.0		282	51.5
100	24	16,170	-66.9		294	40.6	28	15,909	-53.6		261	14.4	26	16,197	-66.5		296	35.0	21	16,283	-68.8		289	44.5
80	23	17,516	-68.5		296	33.6	28	17,344	-54.0		272	10.3	26	17,540	-68.4		299	29.3	17	17,606	-70.0		299	39.1
70	23	18,323	-68.4		299	29.0	28	18,201	-54.6		289	9.9	24	18,346	-67.7		300	26.8	16	18,398	-69.1		302	33.8
60	21	19,236	-66.9		301	22.5	28	19,185	-54.8		327	8.7	23	19,268	-66.6		306	23.5	13	19,322	-68.5		306	22.7
50	20	20,341	-65.3		303	16.7	28	20,350	-54.7		341	8.2	23	20,373	-65.5		319	20.8	12	20,411	-66.8			
40	18	21,711	-63.2		291	15.2	26	21,778	-54.2		10	8.4	21	21,728	-64.0		330	14.4	9	21,761	-64.8			
30	18	23,497	-59.0		285	13.6	25	23,628	-55.0		50	7.8	20	23,508	-59.1		322	13.8	9	23,534	-59.9			
25	18	24,650	-56.1		281	16.1	20	24,779	-55.0		31	10.3	20	24,656	-57.0		323	11.1	9	24,680	-56.7			
20	18	26,080	-52.7		271	24.9	18	26,213	-55.0		33	14.4	19	26,086	-52.8		297	9.7	9	26,109	-51.9			
15	12	27,955	-50.0				12	28,053	-54.6		41	23.1	17	27,953	-49.8		273	16.3	7	27,970	-49.2			
10	5	30,626	-46.3				6	30,658	-54.3				9	30,646	-47.2				5	30,644	-44.2			

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes: dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. **FEBRUARY 1963**

ALBUQUERQUE, NEW MEX.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Feb.									
2	1.05	1.13	1.23	----	----	----	1.20	1.11	1.03
3	1.05	1.13	1.21	1.37	1.44	----	----	----	----
4	1.01	1.11	1.22	1.35	1.41	1.35	1.17	----	----
5	(.57)	(.85)	(.85)	1.34	(1.33)	(1.26)	(1.01)	----	----
6	1.02	1.13	1.22	1.36	1.37	1.34	----	----	----
7	1.08	1.18	1.27	1.39	1.43	1.31	1.21	1.13	1.03
12	.93	1.03	1.18	1.28	1.35	1.33	1.19	1.09	.98
13	----	----	1.13	1.34	1.46	1.33	1.19	1.07	1.01
14	1.04	1.13	1.23	1.39	1.44	(1.25)	(1.18)	(1.07)	(.97)
16	.95	1.05	1.18	(1.28)	1.41	(1.29)	1.18	1.07	(.92)
17	----	----	----	(1.36)	----	----	(1.13)	----	----
18	.99	1.10	1.21	1.34	(1.34)	1.37	1.24	1.13	1.02
19	----	(1.09)	(1.13)	(1.35) D	(1.39)	(1.23)	(1.19)	----	(1.02)
23	----	(1.02)	1.15	1.29	(1.40)	1.23	1.01	(.89)	(.79)
24	.95	1.03	1.14	(1.25)	(1.27)	----	----	----	----
26	1.08	1.18	1.27	1.37	1.48	----	----	----	----
28	.99	1.09	1.21	1.37	1.49	1.40	1.25	1.16	1.07
Averages	1.01	1.11	1.20	1.35	1.43	1.33	1.18	1.11	1.02

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Feb.									
2	----	----	----	----	1.41	1.41	1.23	1.10	1.00
11	----	----	----	----	S 1.33	S 1.31	S 1.17	S 1.03	S .88
21	----	----	----	----	S 1.37	----	----	----	----
24	S .99	S 1.08	S 1.22	S 1.38	S 1.42	1.33	----	----	----
26	----	S 1.07	S 1.20	S 1.35	S 1.43	1.33	----	----	----
Averages	0.99	1.08	1.21	1.37	1.39	1.35	1.20	1.07	0.94

TUCSON, ARIZ.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Feb.									
2	0.90	----	----	----	----	----	----	----	----
4	.90	1.00	1.10	----	----	----	----	----	----
6	.90	----	----	----	----	----	----	----	----
7	1.00	1.10	1.20	----	----	----	----	----	----
18	.80	----	----	----	----	----	----	----	----
21	.90	----	----	----	----	----	----	----	----
22	.90	1.00	1.10	----	----	----	----	----	----
23	.60	.70	----	----	----	----	----	----	----
24	.80	.90	1.10	1.30	----	----	----	----	----
27	1.00	----	----	----	----	----	----	----	----
Averages	0.90	0.90	1.10	1.30	----	----	----	----	----

OMAHA, NEBR.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Feb.									
2	----	----	----	HM 1.25	HM 1.26	HS 1.26	HS 1.06	HS 0.98	HS 0.80
4	HS 0.86	HS 0.92	HS 1.02	HS 1.15	----	----	HS 1.09	----	----
12	HM .90	HM .99	HM 1.12	HM 1.24	HM 1.30	HM 1.24	HM 1.12	HS .98	----
17	H .73	H .81	HM .95	HM 1.14	HS 1.23	HS 1.19	----	----	----
21	HS .86	HS .96	HS 1.06	HS 1.23	HS 1.34	HS 1.27	HS 1.09	HS .93	HS .80
26	----	----	.81	1.20	HS 1.32	----	----	----	----
28	----	----	----	----	----	HS 1.17	HS 1.00	----	HS .63
Averages	0.84	0.92	0.99	1.04	1.29	1.02	1.07	0.96	0.75

BLUE HILL OBS., MASS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Feb.									
1	----	----	----	----	----	----	0.99	0.84	0.74
3	----	----	----	----	----	----	1.27	1.15	1.05
4	1.01	1.11	1.22	1.35	1.35	----	----	----	----
8	1.00	1.11	1.23	1.35	1.40	1.39	1.20	1.06	.98
9	1.06	1.16	1.27	1.41	1.44	1.41	1.24	1.08	.91
10	----	----	----	----	----	----	.95	.82	.72
14	.75	.90	1.01	1.23	1.24	----	----	----	----
15	----	----	----	----	1.36	1.30	1.15	1.01	.90
16	1.03	1.13	1.27	1.41	1.49	1.41	1.27	1.14	1.05
17	1.03	1.08	1.17	1.30	1.39	1.29	----	----	----
18	----	----	----	1.05	1.21	1.15	.94	.77	.65
20	----	----	1.05	1.18	----	----	----	----	----
21	----	----	----	----	----	1.35	1.20	1.04	.94
22	.93	1.00	1.11	1.29	1.40	1.30	1.07	.96	.83
23	.87	.99	1.12	1.30	1.37	1.24	1.01	.86	.75
25	1.00	1.05	1.13	1.30	1.39	1.30	1.16	.95	.78
26	.84	.95	1.10	1.29	1.39	1.25	1.05	.91	.83
27	.87	.95	1.10	1.30	1.46	1.37	1.21	1.10	1.00
Averages	0.94	1.04	1.15	1.29	1.38	1.31	1.12	0.98	0.87

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Feb.									
1	----	----	----	----	----	1.55	1.44	1.34	1.27
2	1.25	1.33	1.42	1.53	1.62	1.50	1.39	1.28	1.21
3	1.23	1.30	1.39	1.51	1.61	1.52	1.42	1.32	1.24
4	1.27	1.34	1.44	1.55	1.64	1.54	1.44	1.34	1.27
5	1.24	1.31	----	1.52	1.61	1.51	1.40	1.31	1.24
6	1.22	1.30	1.40	1.50	1.60	1.49	1.38	1.29	1.20
7	1.23	1.30	1.40	1.52	1.62	1.50	1.38	1.29	1.21
8	1.27	1.34	1.42	1.54	1.63	1.50	1.40	1.32	1.24
9	1.30	1.36	1.46	1.57	1.64	1.53	1.41	1.32	1.25
10	----	----	----	----	1.58	----	----	----	----
11	----	1.26	1.36	1.48	1.59	----	----	----	1.19
12	----	----	1.37	1.49	1.60	----	----	----	1.16
14	----	----	1.42	1.53	1.62	----	1.41	1.32	1.25
15	1.25	1.32	1.42	1.52	1.62	1.50	1.39	1.30	1.21
16	1.22	1.31	1.39	1.50	1.62	----	1.36	1.26	1.17
17	1.23	1.32	1.41	1.51	----	----	----	----	----
18	1.23	1.30	1.40	1.51	----	----	----	----	----
19	1.22	1.32	1.41	1.53	1.61	----	----	----	----
20	1.24	1.32	1.41	1.51	1.58	----	----	----	----
21	1.21	1.29	1.39	1.50	1.60	----	----	----	----
22	1.19	1.27	1.36	1.47	1.60	1.46	1.34	1.25	1.17
23	1.21	1.29	1.38	1.48	1.58	----	----	1.21	1.15
24	1.23	1.29	1.39	1.49	1.59	----	----	----	----
25	1.22	1.30	1.39	1.49	1.60	1.46	1.35	1.26	1.18
26	1.21	1.28	1.37	1.48	1.58	----	1.39	1.30	----
27	----	----	----	----	----	1.49	----	----	----
Averages	1.23	1.31	1.40	1.51	1.61	1.50	1.39	1.29	1.21

GUAM, M. I.

	Air mass 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observations due to cloudiness.								

D Dust
H Haze
S Slight haze - indeterminable
HM Moderate haze
HS Slight haze
( ) Clouds present
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

FEBRUARY 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	342	390	395	400	396	397	416	366	179	117	132	457	466	466	163	464	465	466	471	332	335	220	485	465	499	505	436	562				385
AMES IOWA	75	314	292	284	287	65	33	97	120	248	357	260	288	376	244	313	327	221	146	285	390	402	132	254	436	445	232	420				262
ANNETTE ALASKA	36	35	49	36	16	16	93	26	121	188	188	191	83	19	83	57	47	120	40	18	80	28	107	37	52	201	20	222				79
APALACHICOLA FLORIDA	253	292	80	254	175	347	429	320	308	229	47	---	493	507	499	196	348	291	179	498	502	433	421	422	466	198	578	445				341
ASTORIA OREGON	104	12	50	33	46	83	170	87	270	286	281	255	121	78	84	128	42	86	102	289	231	294	237	182	27	233	173	130				147
ATLANTA GEORGIA	44	92	428	---	283	408	349	382	330	245	37	165	494	461	477	472	454	263	67	399	266	542	467	447	435	344	530	375				343
BARROW ALASKA	5	1	3	6	9	12	18	9	19	17	25	25	42	47	36	44	39	29	23	27	41	40	59	66	52	46	52	66				31
BETHEL ALASKA	129	145	94	96	129	134	124	78	125	95	71	120	171	146	56	78	64	66	60	179	212	210	146	80	49	75	89	201				115
BISMARCK N.DAK.	110	273	96	235	124	108	256	52	121	278	251	---	126	98	86	133	169	110	238	357	314	283	334	150	---	211	245	149				189
BLUE HILL MASS.	274	38	230	296	116	229	108	341	340	204	92	24	173	271	325	387	337	321	78	308	264	411	402	185	363	418	431	237				257
BOISE IDAHO	24	168	61	71	209	193	226	237	318	321	309	340	110	318	322	116	232	126	141	167	327	379	330	389	382	212	397	165				235
BOSTON MASSACHUSETTS	287	36	236	292	93	236	100	358	340	212	81	18	179	290	350	395	346	310	73	299	259	401	390	185	326	414	420	251				256
BROWNSVILLE TEXAS	---	---	447	476	477	479	472	474	437	437	183	297	508	510	---	133	241	490	520	525	487	76	147	204	356	524	492	183				383
CANTON ISLAND P.I.	682	721	732	680*	731	---	715*	701	722*	715	706	689	696	720*	720	---	706*	---	693	690	669	687*	---	709*	712	695	697	703				292
CAPE HATTERAS N.C.	36	186	72	180	114	139	286	193	68	375	321	44	352	436	456	442	133	447	71	442	277	416	482	39	468	78	502	483				269
CARIBOU MAINE	262	213	100	251	200	212	194	276	286	295	165	110	192	287	292	266	290	223	242	168	277	351	306	191	266	392	396	339				251
CHARLESTON S.C.	94	204	59	73	39	64	446	288	108	401	301	286	487	447	449	326	78	437	247	452	336	499	501	176	468	59	543	510				299
CLEVELAND OHIO	134	108	248	92	235	222	33	273	107	92	87	122	240	187	245	300	157	277	103	128	252	336	301	277	170	327	---	218				195
COLUMBIA MISSOURI	243	235	350	276	343	290	41	78	43	221	346	174	307	424	365	343	349	380	323	141	465	293	97	298	158	489	218	249				269
CORVALLIS OREGON	---	---	65	53	62	116	139	186	295	304	306	230	144	178	98	197	80	57	54	106	142	240	203	146	120	260	214	80				157
DAVIS CALIFORNIA	245	159	214	95	208	291	153	193	47	205	351	79	212	259	266	185	380	411	208	418	341	452	426	400	371	335	478	431				279
DODGE CITY KANSAS	280	---	337	309	---	369	373	290	194	104	391	415	378	398	343	164	419	413	432	300	418	408	282	410	433	464	447	407				353
E. LANSING MICHIGAN	127	59	303	101	179	124	280	303	217	161	296	293	217	237	276	319	145	318	269	174	281	310	285	451	295	332	194	409				248
EL PASO TEXAS	408	438	438	438	449	452	468	457	341	227	154	457	518*	483*	483	435	436	515	519	526	524	529	521	540	548	565	552	567				392
ELY NEVADA	161	---	156	182	358	364	348	380	339	149	418	411	---	251	364	423	259	225	317	229	356	---	---	412	446	265	466	452				322
EPPLEY.NEWPORT R.I.	247	48	210	292	254	261	150	339	333	230	174	30	147	259	341	379	353	326	80	328	191	396	381	159	308	328	411	160				254
FAIRBANKS ALASKA	68	53	73	79	51	33	14	100	34	120	90	55	42	53	62	61	108	103	60	170	---	105	---	51	84	139	191	184				84
FLAMING GORGE UTAH	166	242	114	330	260	354	287	364	228	179	390	401	393	339	---	---	---	---	---	266	427	410	422	402	446	170	287	294				312
FORT WORTH TEXAS	335	207	418	395	401*	297	423	300	100	170	195	381	464	448	358	155	378	126	213	458	218	347	61	482	351	488	491	54				283
FRESNO CALIFORNIA	---	---	---	---	304	214	294	258	36	221	181	146	176	369	190	219	320	258	319	122	211	189	393	370	393	400	284	404				261
GLASGOW MONTANA	155	234	103	198	235	222	196	72	101	281	287	193	96	79	76	283	88	86	238	161	141	157	159	194	239	128	---	176				169
GRAND JUNCTION COLO.	109	348	356	355	221	389	370	347	365	407	189	444	446	408	358	457	394	327	460	196	481	486	482	386	536	---	497	514				382
GREAT FALLS MONTANA	230	209	195	172	215	150	236	249	246	94	280	266*	272	167	227	252	189	198	---	201	297	149	161	126	272	216	135	153				186
GREENSBORO N.C.	86	105	475	453	348	---	---	---	---	---	---	---	---	---	---	---	---	---	45	443	182	514	477	223	469	59	545	---				---
GRIFFIN EXP.STA.GA.	53	151	483	496	333	448	393	442	287	340	36	251	526	525	546	531	531	311	63	488	282	591	493	493	478	280	590	572				393
INDIANAPOLIS INDIANA	216	70	371	136	339	238	31	150	224	85	247	393	252	290	445	404	315	386	323	267	413	428	226	484	261	511	182	321				286
ITHACA NEW YORK	268	8	226	111	147	302	92	214	293	170	43	56	223	125	257	296	227	227	104	220	390	380	311	171	185	360	426	225				216
LAKE CHARLES LA.	145	126	445	414	---	---	---	389	427	358	55	519	525	508	517	516	217	49	188	490	320	409	73	536	253	576	553	254				354
LANDER WYOMING	134	299	221	193	277	315	309	323	268	133	378	371	364	301	291	317	302	291	379	350	393	383	335	373	404	262	316	381				309
LARAMIE WYOMING	135	276	75	214	201	303	275	301	180	165	347	368	327	288	256	282	300	281	368	192	357	385	206	361	393	262	217	360				274
LAS VEGAS NEVADA	300	364	325	309	382	385	354	326	340	189	368	430	351	349	437	353	445	420	440	430	460	259	478	473	477	445	474	491				388
LITTLE ROCK ARKANSAS	51	33	386	226	341	270	79	54	325	32	141	380	394	394	421	398	353	118	364	404	412	423	157	440	226	492	480	101				282
LOS ANGELES CALIF.WB	47	284	317	329	371	341	209	174	29	83	399	383	269	375	340	215	351	229	308	278	429	403	475	461	439	370	414	491				315
LOS ANGELES CALIF.CO	61	272	329	321	316	343	286	187	28	102	340	361	267	357	362	192	345	204	364	358	400	349	474	470	450	418	422	475				316
MANHATTAN KANSAS	197	325	319	321	328	338	45	133	251	89	366	325	137	393	316	265	377	369	294	136	435	358	151	344	325	399	377	372				289
MATANUSKA ALASKA	103	59	87	91	89	65	12	44	103	39	121	23	31	47	67	104	122	101	164	177	120	---	---	---	156	93	193	229				98
MAUNA LOA OB.HAWAII	619	619	618	633	628	629	636	645	653	575	638	642	133	665	665	649	434	410	632	459	584	671	651	667	687	624	640	545				595
MEDFORD OREGON	88	101	93	71	167	265	168	181	128	293	312	78	293	233	193	102	212	104	96	164	284	---	280	231	143	399	351	176				193
MIAMI FLORIDA	500	---	489	135	185	401	---	---	---	---	---	---	79	512	416	453	92	145	181	394	531	524	239	227	420	458	492	601	333				355
MIDLAND TEXAS	290	385	450	438	437	397	447	---	401	---	235	---	---	---	523	356	396	247	347	495	477	---	---	---	---	---	---	---	---				---
NASHVILLE TENNESSEE	61	8	368	237	343	327	7	279	221	11	181	300	379	313	413	349	336	243	161	397	434	398	362	238	359	479	399	147				277
NORTH OMAHA NEBRASKA	237	341	302	314	319	63	65	40	74	219	336	326	135	381	237	293	382	258	285	262	435	349	212	150	456	330	220	466				267
OAK RIDGE TENNESSEE	39	18	349	325	329	331	141	196	134	55	53	182	376	201	396	380	350	297	97	401	359	405	373	155	389	347	387	164				258
OKLAHOMA CITY OKLA.	265	187	372	350	367	303	374	192	252	53	294	415	427	415	382	150	208	303	394	389	289	449	352	450	241	457	460	76				316
PAGE ARIZONA	244	325	290	288	305	326	324	330	193	51	155	409	397	233	409	385	365	379	373	280	401	276	423	410	416	337	415	435				328

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

FEBRUARY 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PHOENIX ARIZONA	356	387	411	386	371	414	414	384	295	159	84	442	459	352	442	257	452	463	467	471	467	476	494	489	505	502	338	539				403
PORTLAND MAINE	298	71	240	244	104	179	123	317	324	208	70	58	213	302	331	354	347	381	132	197	232	---	371	109	386	421	13	354				236
PROSSER WASHINGTON	---	176	335	164	229	99	302	---	327	312	153	69	111	102	108	89	114	119	166	367	361	353	198	186	218	399	362	326				221
PULLMAN WASHINGTON	146	100	95	52	204	98	250	259	288	284	303	305	83	151	217	72	70	49	80	269	305	244	279	337	279	185	374	200				199
RAPID CITY S.DAK.	145	279	159	224	95	282	267	201	108	324	314	316	110	200	140	217	226	253	254	290	320	282	313	349	277	178	126	329				235
RIVERSIDE CALIFORNIA	103	291	371	389	411	400	378	148	134	103	280	431	243	247	437	393	367	381	430	283	431	497	518	515	501	437	521	539				364
SAINT CLOUD MINN.	70	286	90	186	210	88	92	82	286	229	162	328	242	360	228	176	110	218	179	344	387	376	360	347	415	385	302	302				244
SALT LAKE CITY UTAH	132	274	123	234	316	335	252	335	327	313	381	387	381	122	187	384	98	135	170	126	390	406	430	446	457	262	340	414				291
SAN ANTONIO TEXAS	351	384	471	463	448	452	470	455	397	327	189	260	507	479	346	265	82	117	497	510	408	183	86	444	243	549	531	280				364
SANTA MARIA CALIF.	---	285	255	283	---	---	---	227	---	---	---	---	---	---	---	---	---	398	413	319	432	438	453	462	448	---	471*	---				---
SAYVILLE NEW YORK	167	11	197	212	126	185	117	268	242	157	147	11	206	158	272	303	267	256	25	235	186	306	283	78	162	205	349	92				186
SEATTLE WASH. UNIV.					48	104	174	211	235	241	224	248	111	137	87	152	80	78	61	176	217	183	74	98	52	274	206	202				153
SEATTLE TACOMA WASH.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---				---
SHREVEPORT LOUISIANA	263	60	432	342	403	357	405	143	395	97	58	407	464	460	381	436	454	23	321	409	122	481	213	435	274	495	498	---				327
SPOKANE WASHINGTON	172	61	154	37	186	37	215	231	277	275	278	284	119	70	108	50	104	112	46	205	114	104	204	182	206	237	348	144				163
STATE COLLEGE PENN.	183	37	349	237	310	318	26	367	245	105	73	94	310	216	309	388	317	375	43	341	346	418	416	178	214	473	423	161				260
STERLING VIRGINA	153	71	346	354	343	---	75	364	263	195	61	66	356	106	417	429	343	403	71	440	454	461	474	92	304	199	476	162				277
STILLWATER OKLAHOMA	176	183	347	330	348	315	100	146	105	69	260	375	389	382	383	236	376	329	389	370	362	409	264	414	212	414	439	55				292
SWAN ISLAND W.I.	457	557	519	316	363	367	587	516	585	636	558	555	288	150	528	571	587	580	581	442	390	357	224	580	480	585	381*	507				446
TAMPA FLORIDA	382	409	102	57	82	97	548	437	446	313	386	162	462	210	487	79	469	423	267	512	363	532	558	221	550	55	598	519				347
TUCSON ARIZONA	383	389	409	407	404	399	433	411	337	60	153	467	473	383	464	317	351	469	476*	483	478	484	475	496	501	512	467	533				381

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month FEBRUARY 1963

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys	-66	50	56	114	125	74	76	99	70	16	7	39	103	43	81	79	78	58	45	-16	34	44	39	65	129	40	29	42				55

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

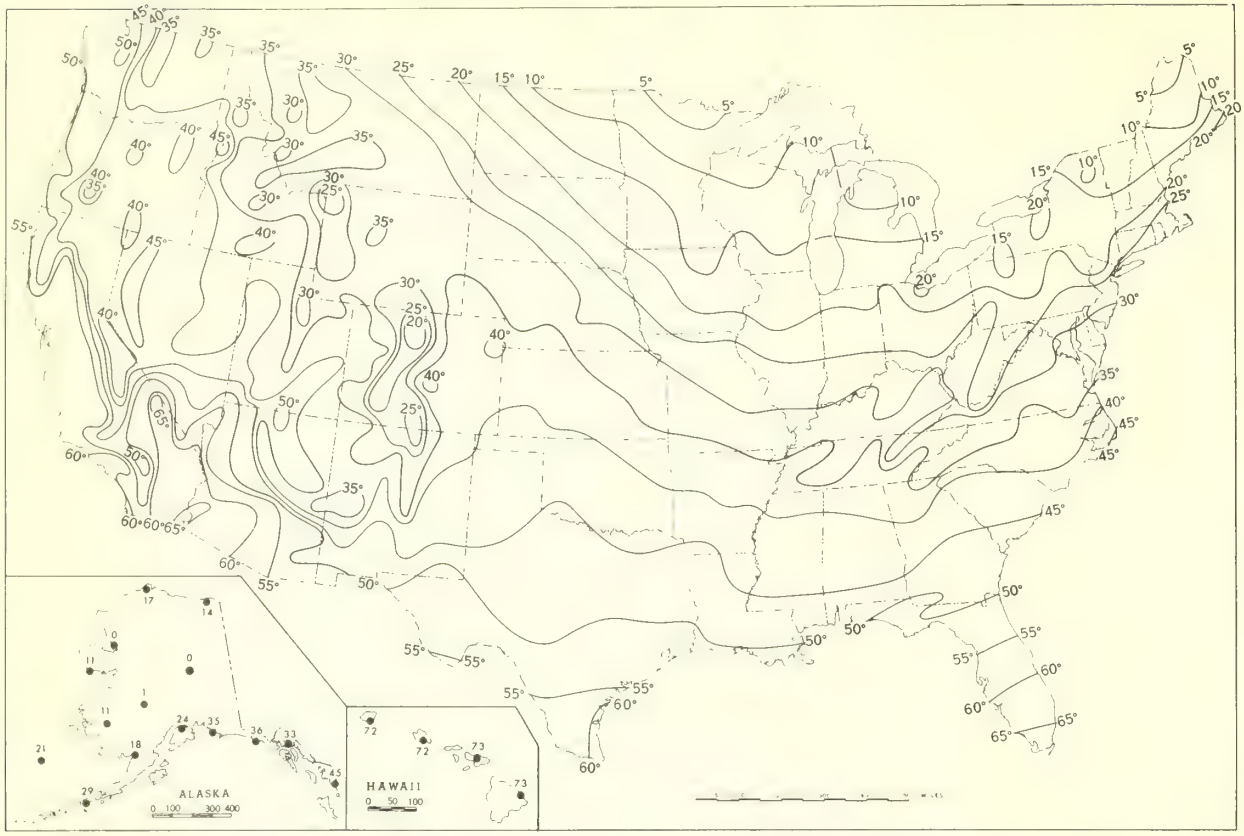
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $A S \Omega \Omega \Omega$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

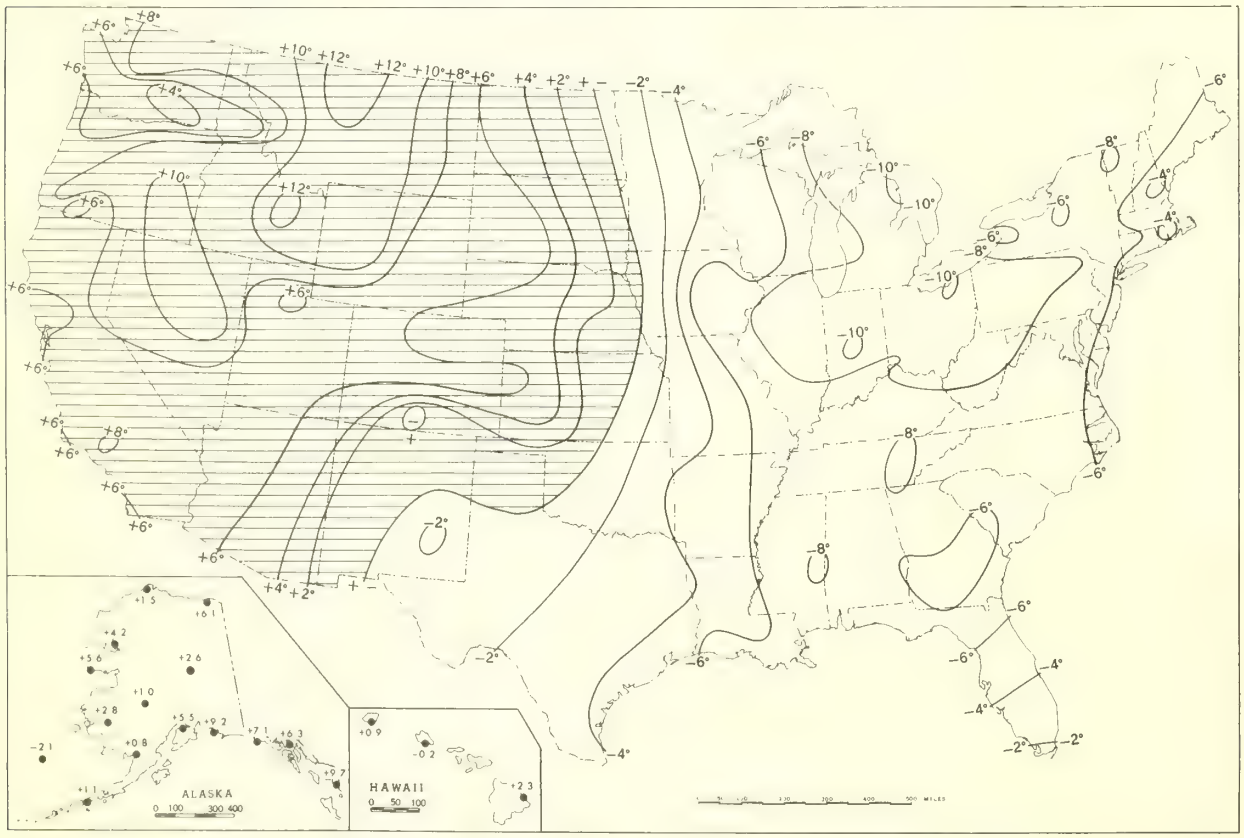
Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	00364	00417	35321	33316	04308	35315	00313	36408	36426	00423	06421	06419	36391	35386	06389	34413	00402	06439	05426	00419	00446	00435	00441	06426	00413	04352	00380	06409				394
Caribou, Maine	-----	00411	35411	00430	00442	05418	36436	00499	00441	00454	04489	04418	34425	00458	00457	-----	00407	05417	00411	-----	05455	00474	05535	04473	05463	00460	00423	00433				445
Green Bay, Wis.	35391	00395	34437	35393	05422	34400	05339	04363	00464	-----	00487	00438	04434	00450	00431	04409	35427	04424	04444	00469	00494	00496	00467	00461	00483	00448	36394	00406				431
Mauna Loa, Hawaii	-----	00228	00241	00235	00239	00238	00238	00234	00240	00244	00242	00247	-----	00268	00259	00258	00251	00254	00267	00266	00267	00256	00252	00256	00254	00254	00264	00269				251
Midland, Texas	05248	00264	00267	00249	00276	03282	00266	00266	03274	05269	-----	05348	00352	00314	04327	06336	05345	00387	00381	00299	04288	00325	00336	00327	00358	00310	00311	06383				310
Nashville, Tenn.	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	00455	34376	04383				---
Sterling, Va.	06416	-----	-----	00354	00354	00322	05375	00361	-----	-----	06347	06389	00357	05424	00381	-----	-----	00404	06394	-----	00376	-----	00428	04450	-----	05400	00387	04369				384

The spectrophotometer measures the total amount of ozone in the atmosphere, i e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station The amount of ozone in this column (coded $\Omega \Omega \Omega$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code $A S$ designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, February 1963.



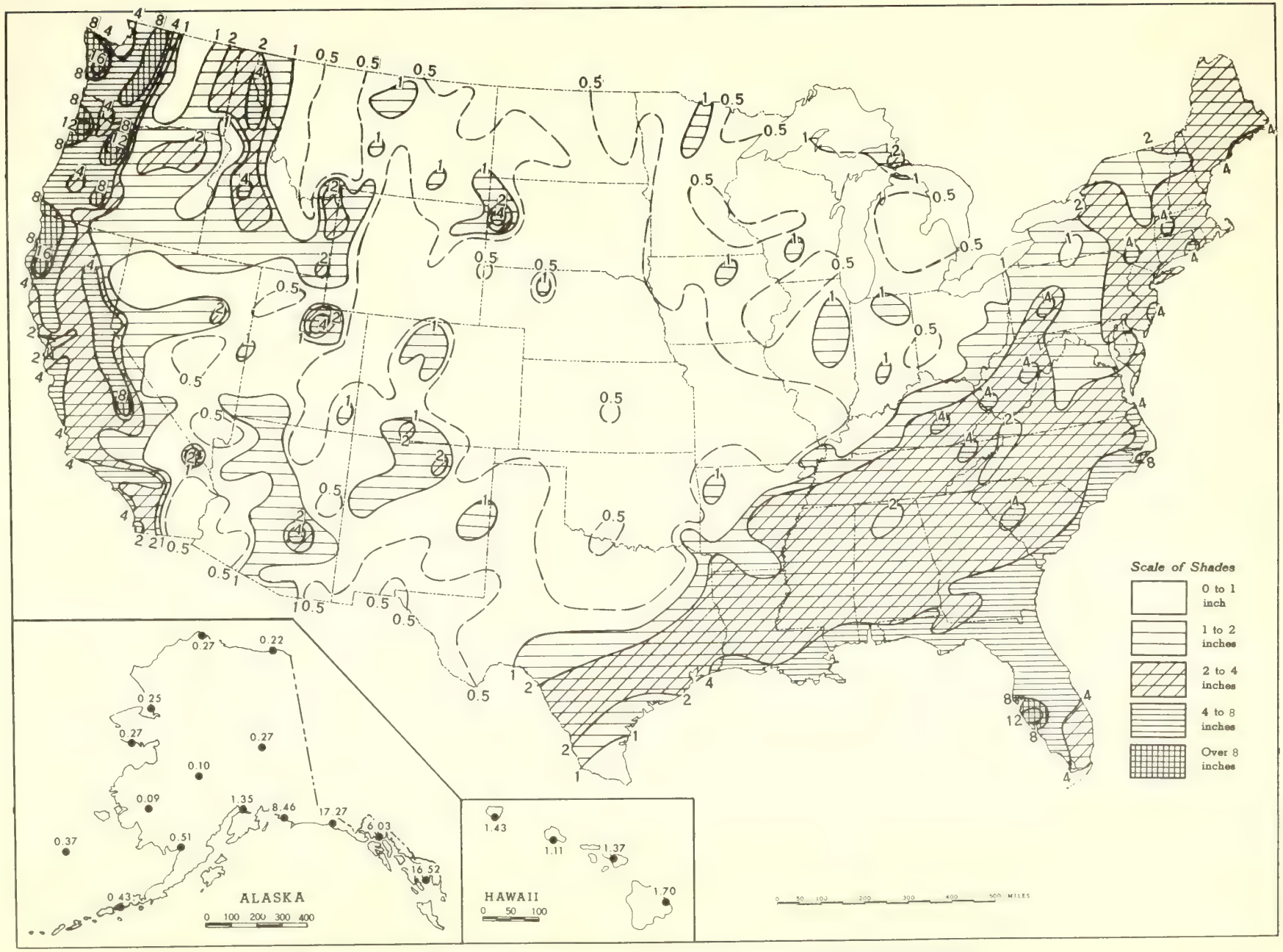
B. Departure of Average Temperature from Normal (°F.), February 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

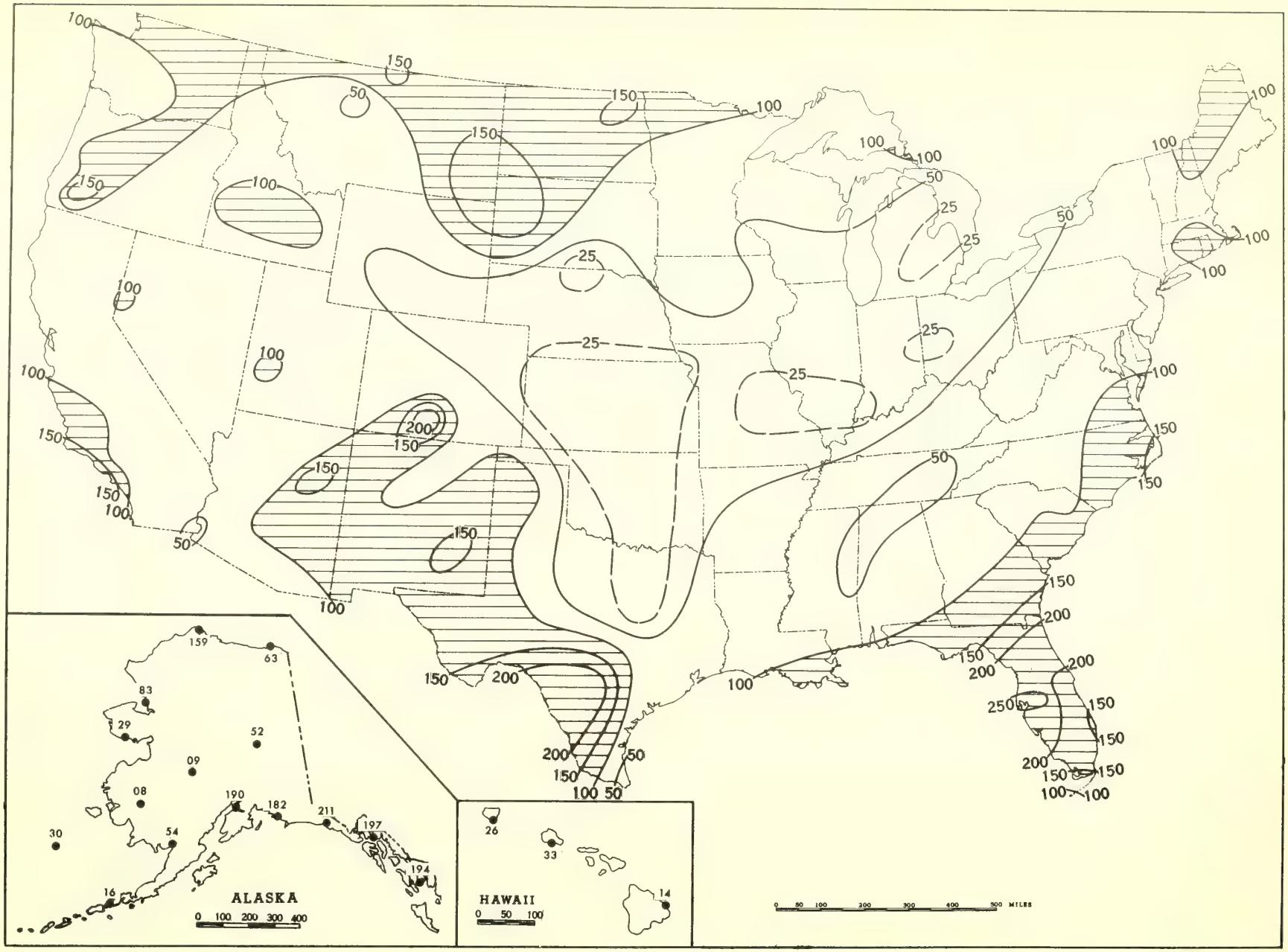
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), February 1963.



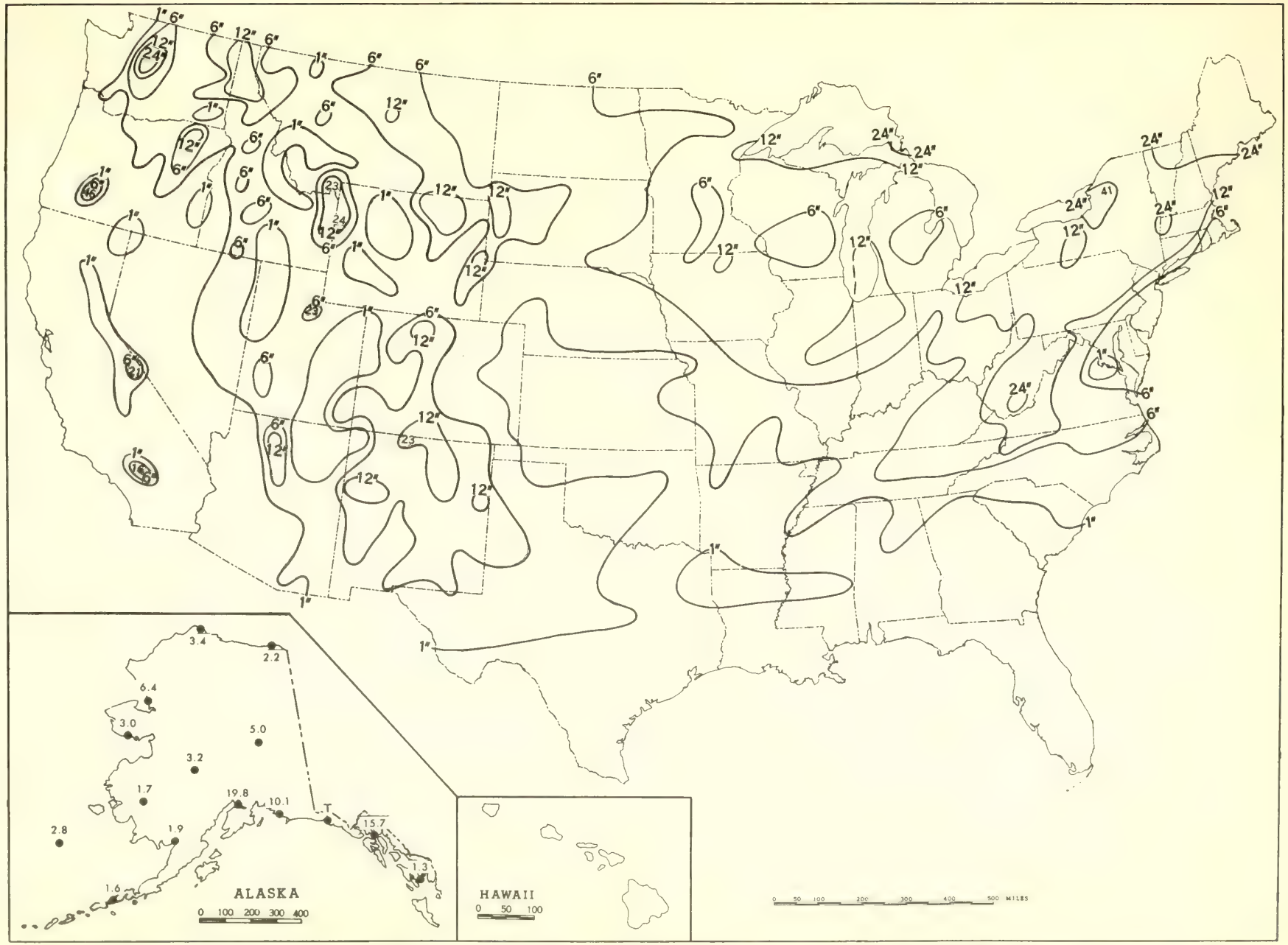
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, February 1963.



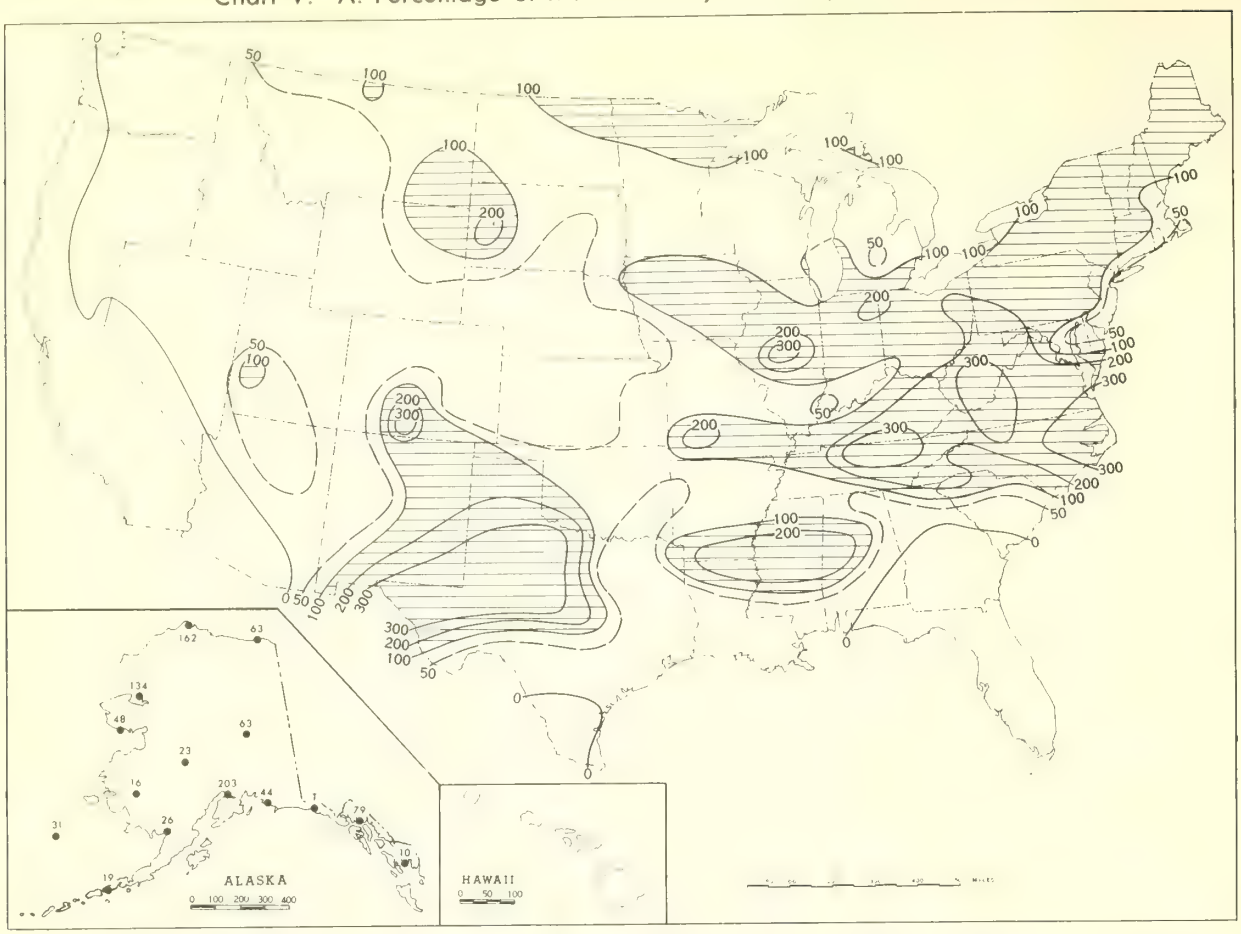
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), February 1963.

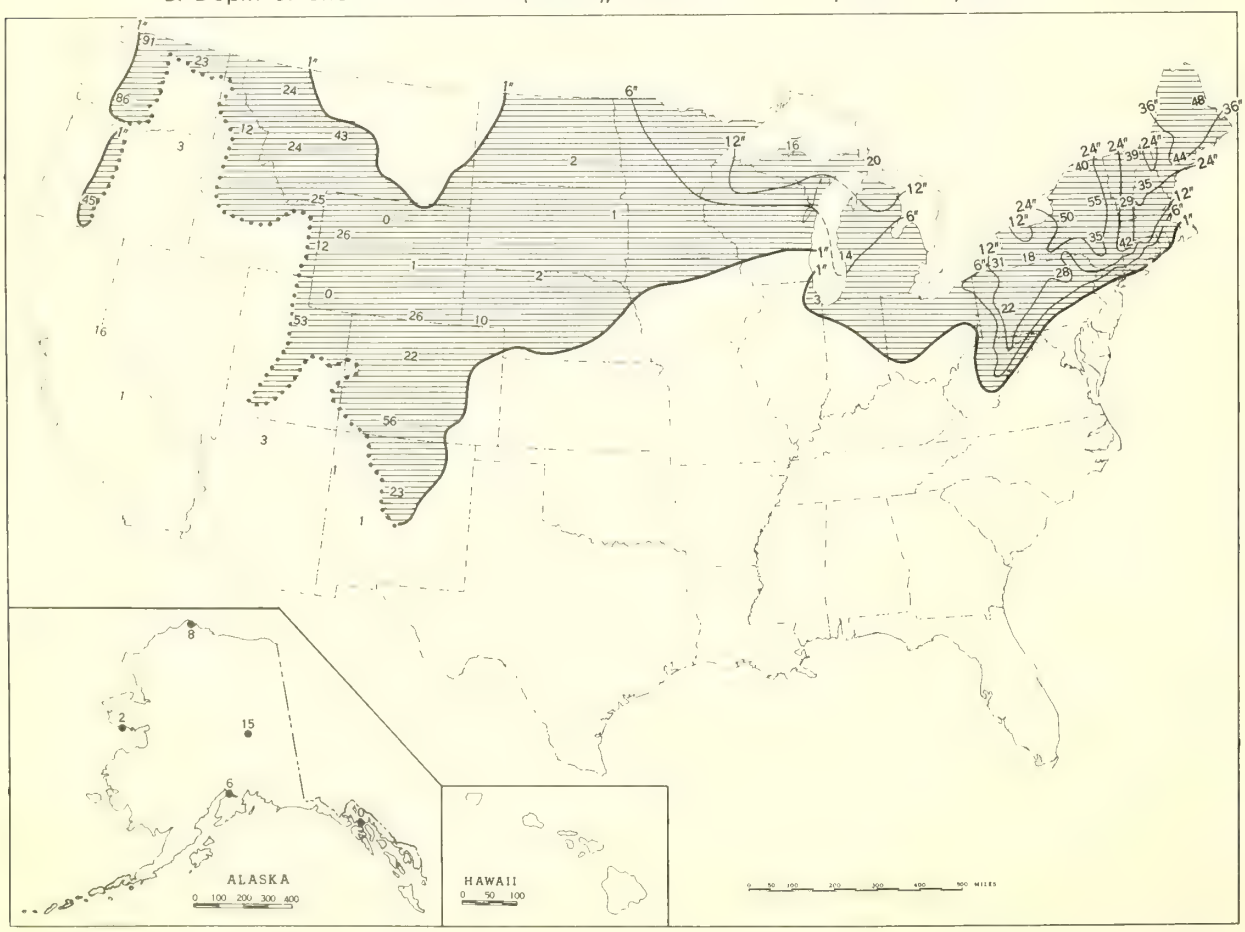


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, February 1963.

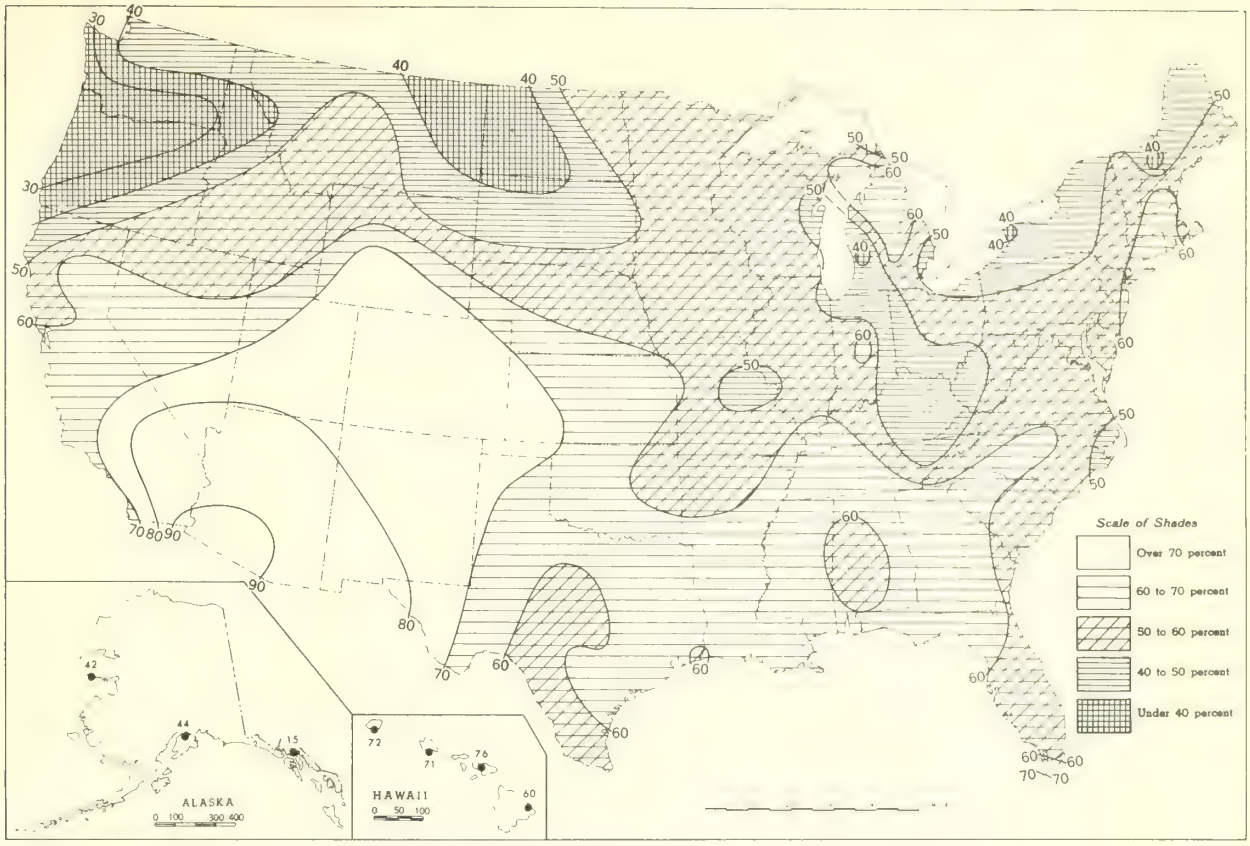


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., March 4, 1963.

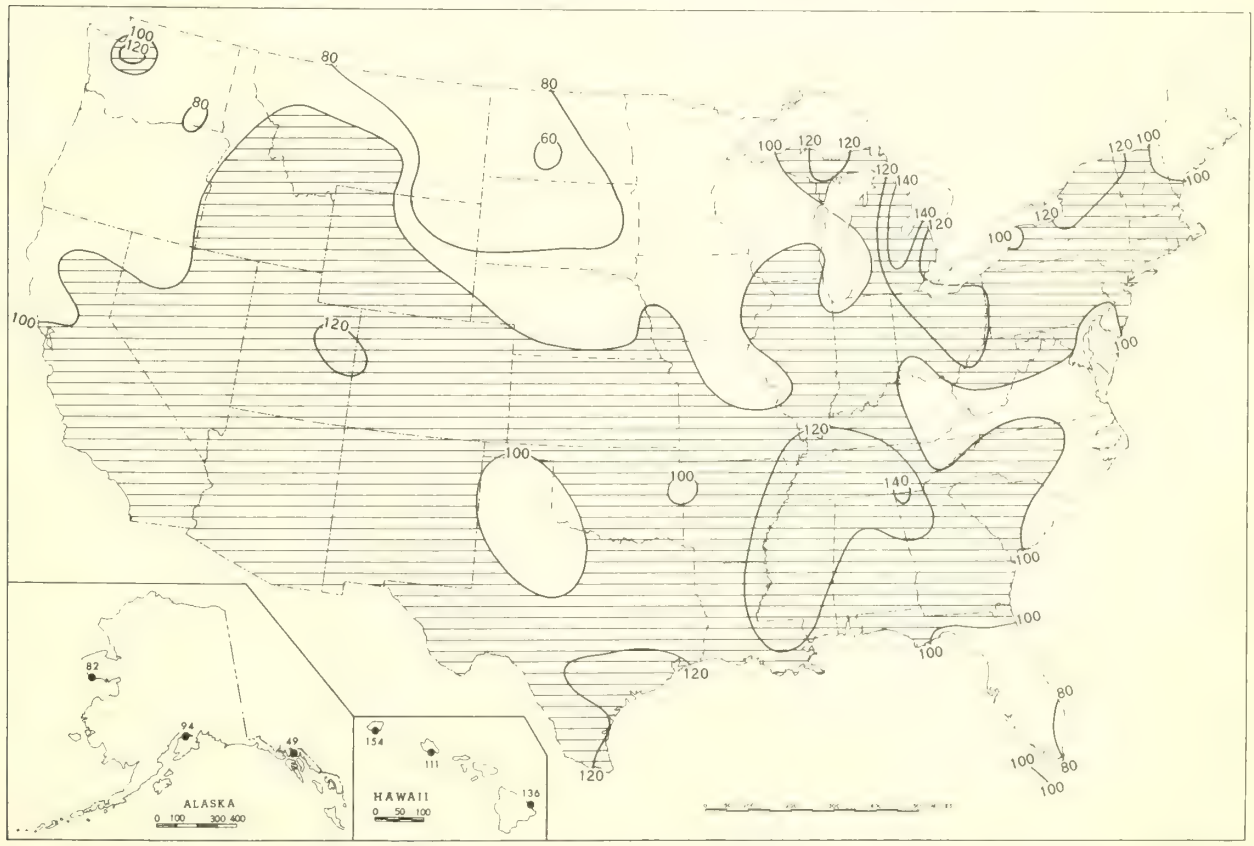


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, February 1963.

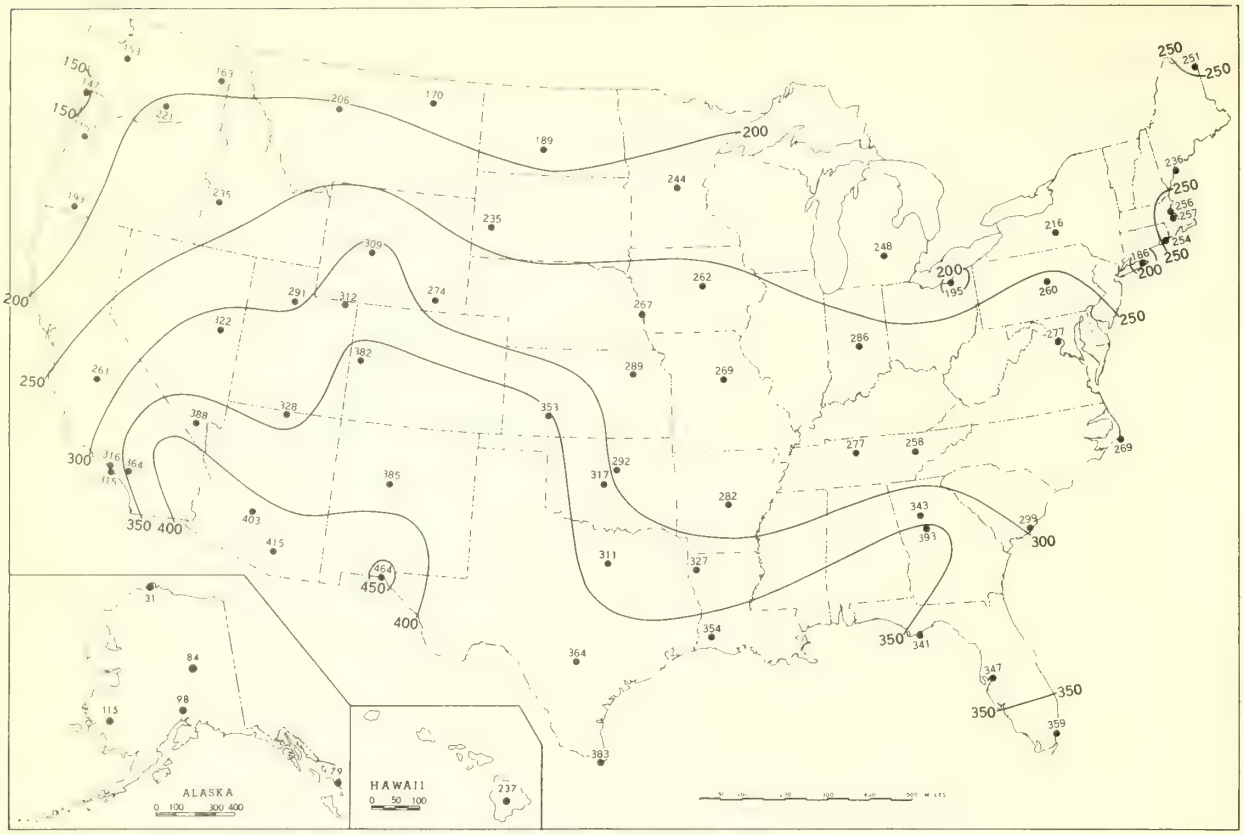


B. Percentage of Mean Monthly Sunshine, February 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, February 1963.

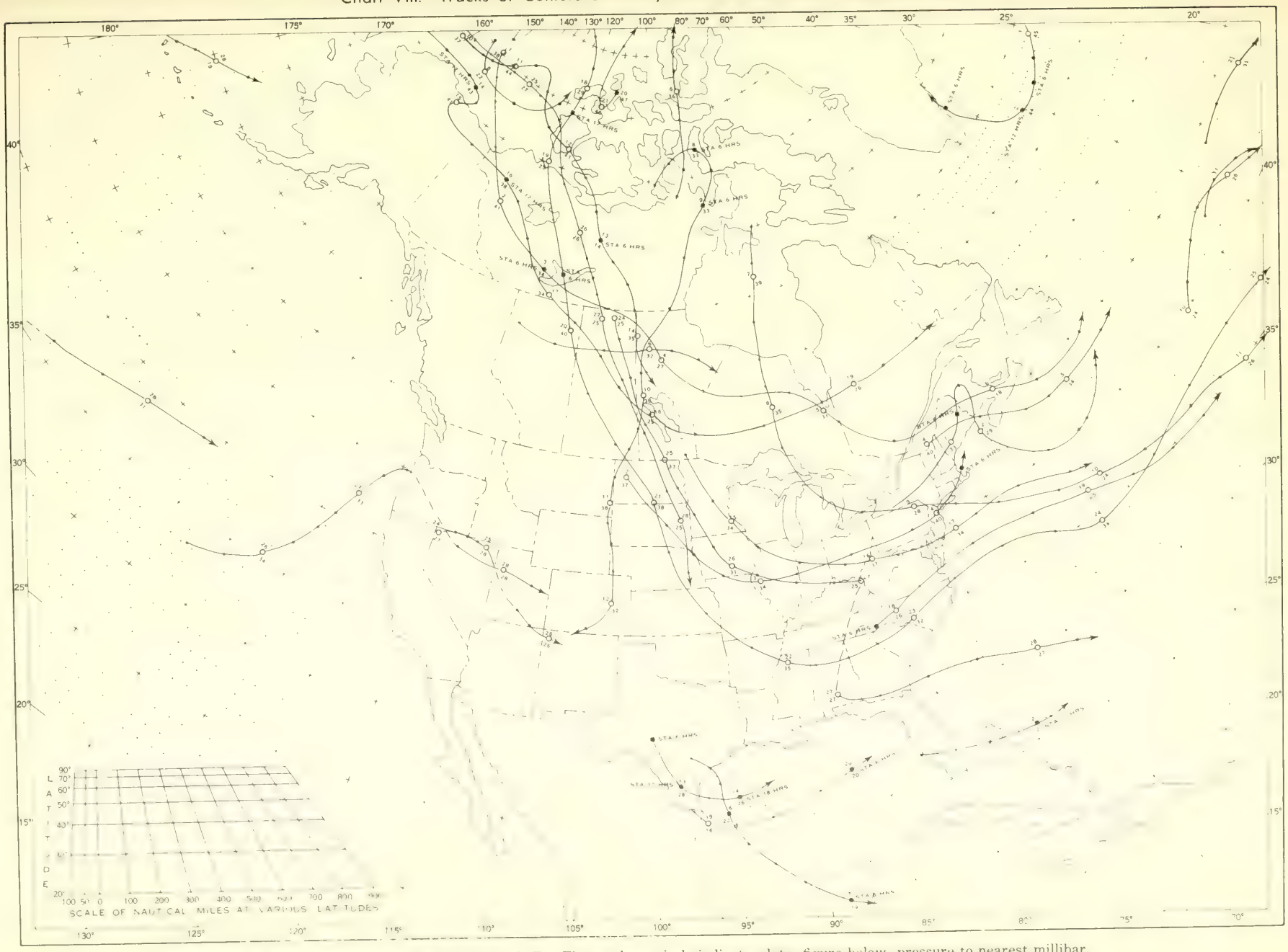


B. Percentage of Mean Daily Solar Radiation, February 1963.



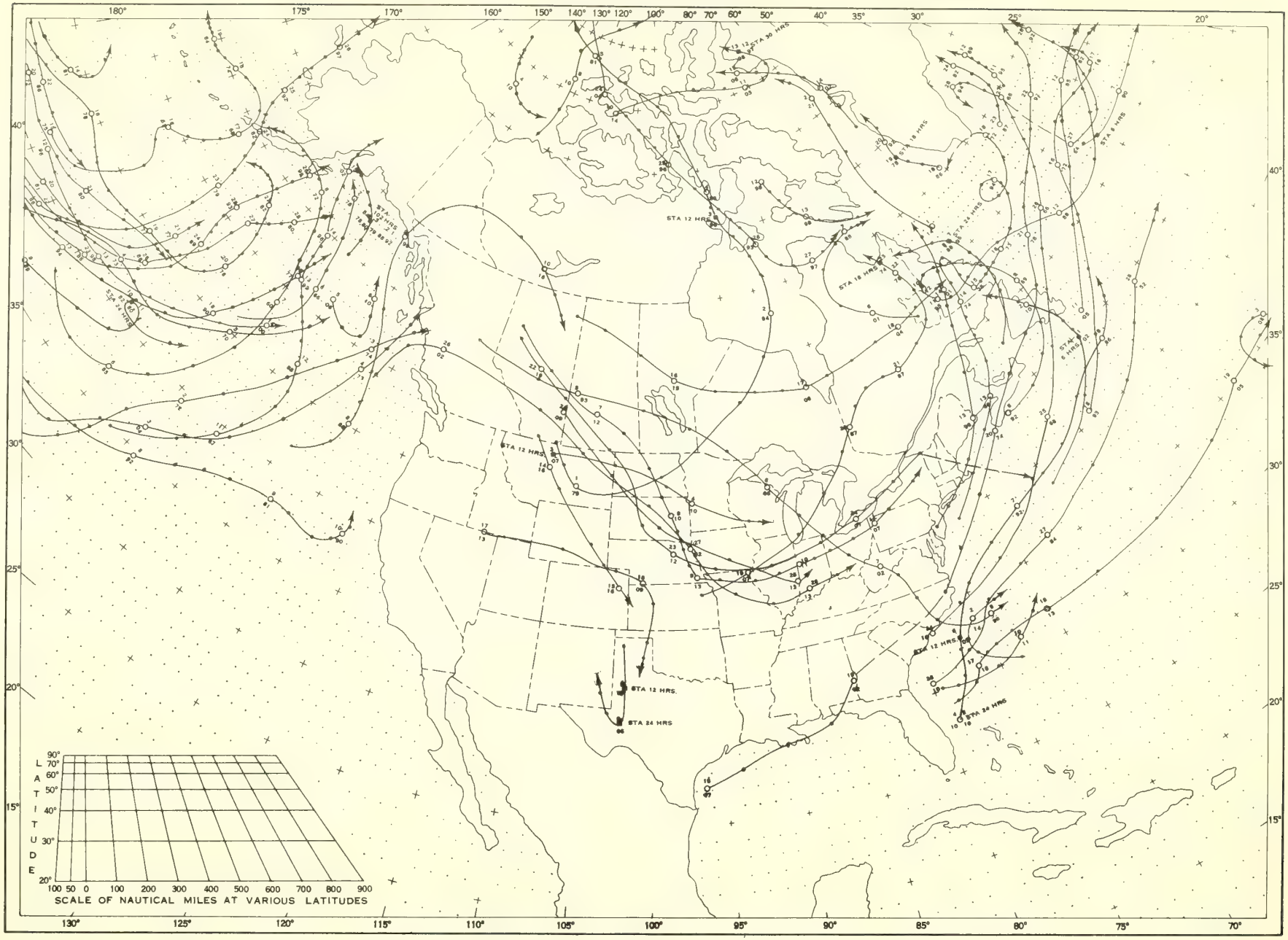
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, **February 1963.**



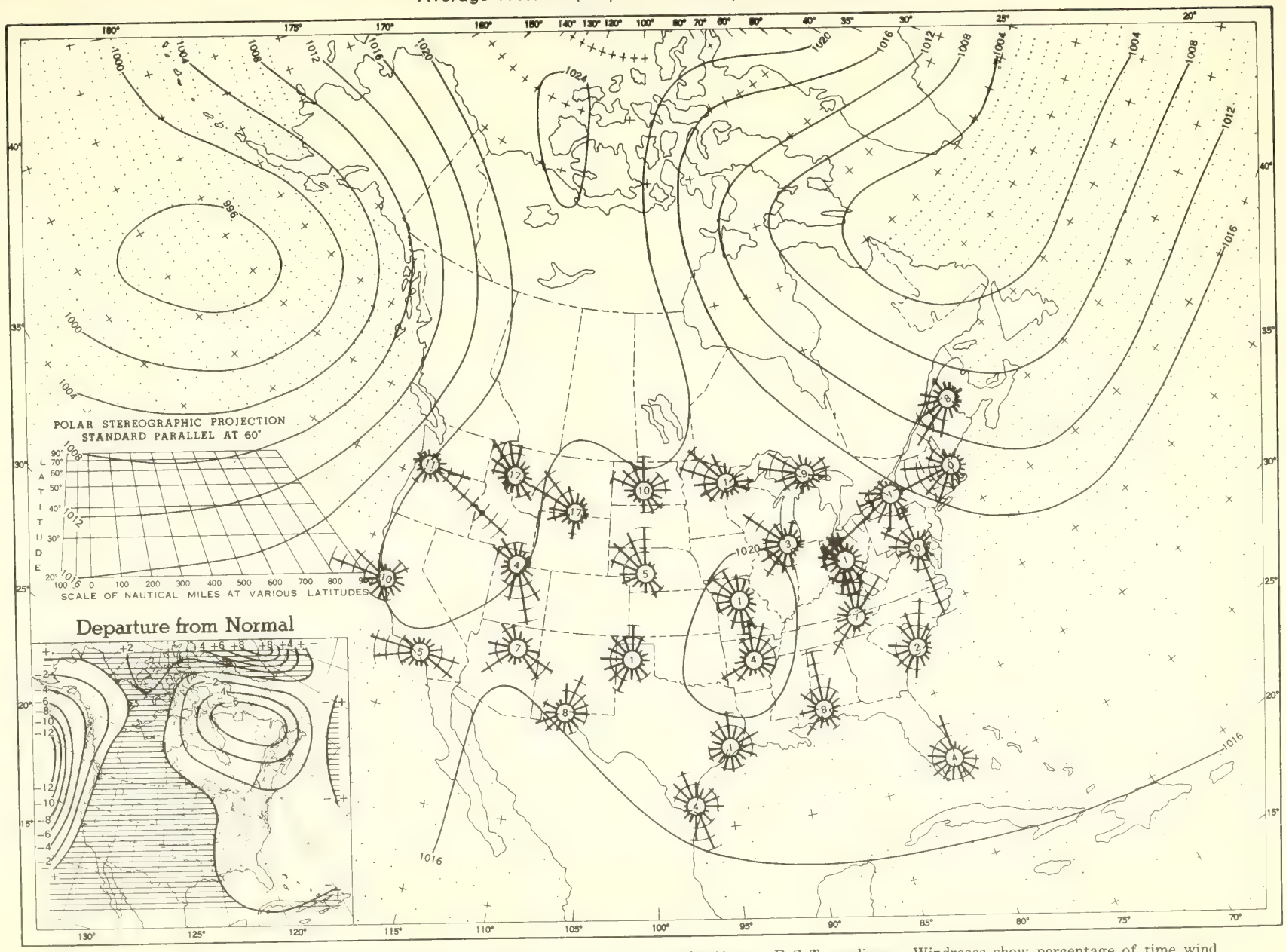
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, February 1963.



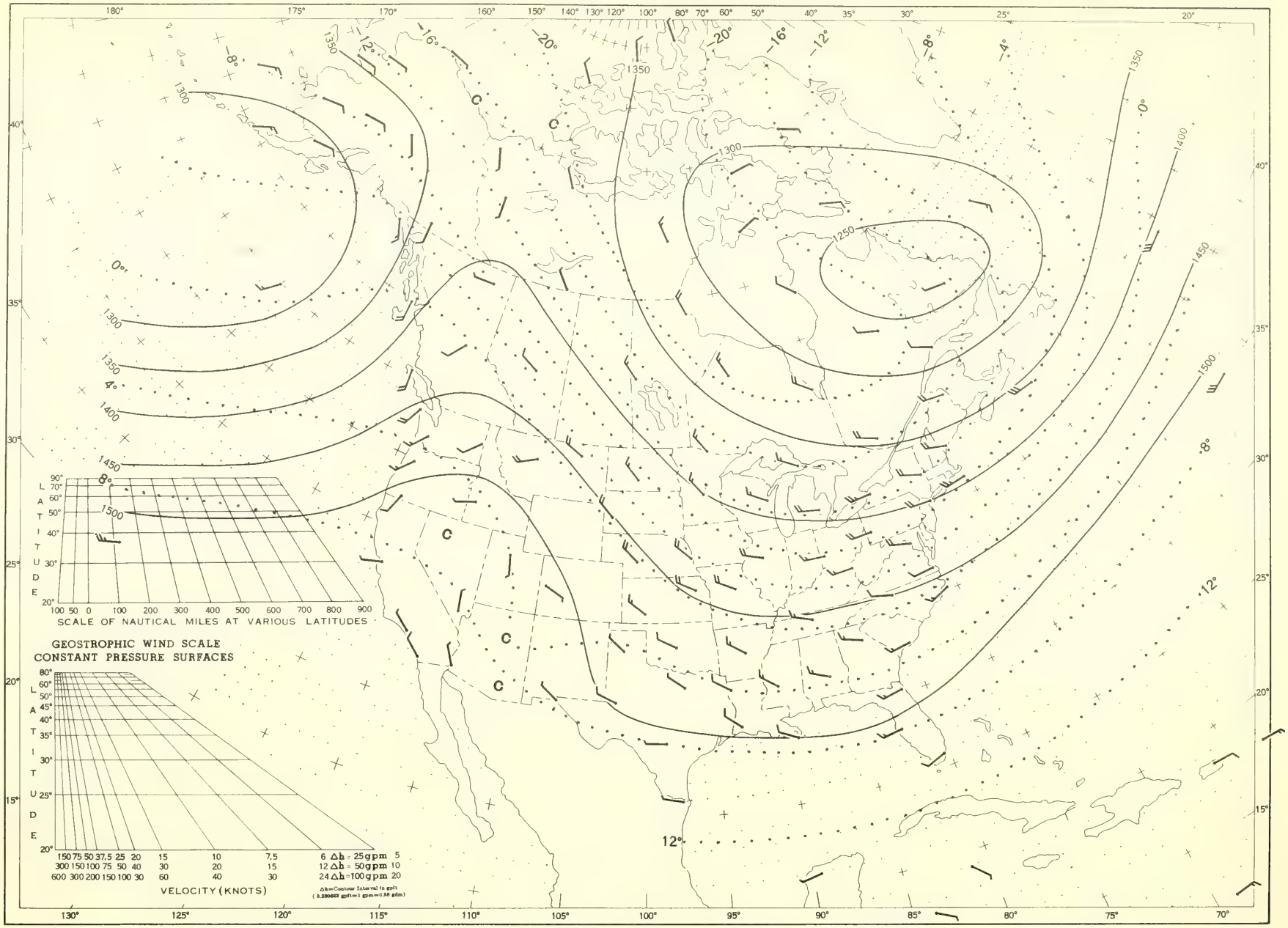
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, February 1963. Inset: Departure of Average Pressure (mb.) from Normal, February 1963.



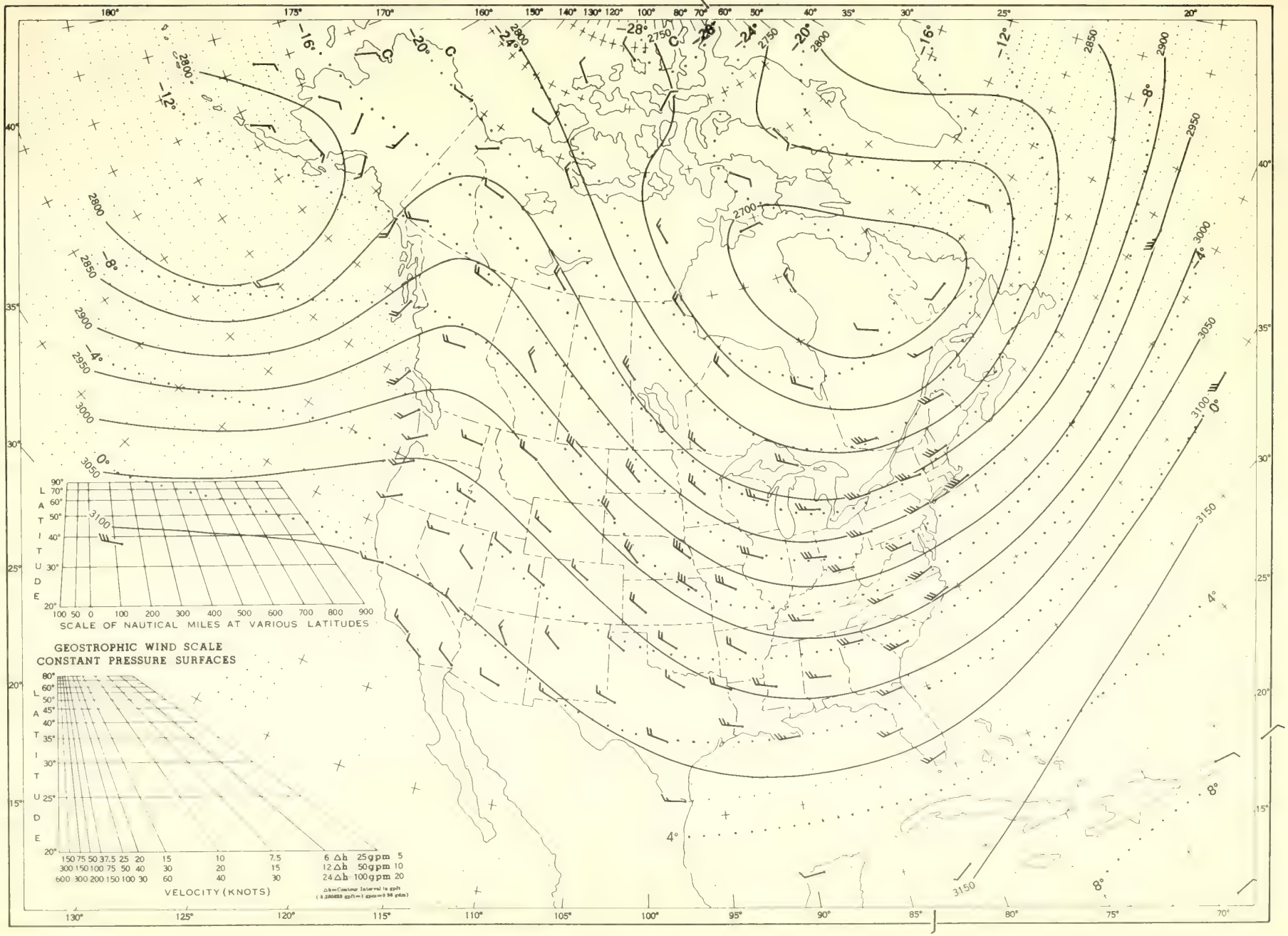
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, February 1963. Average Height and Temperature, and Resultant Winds.



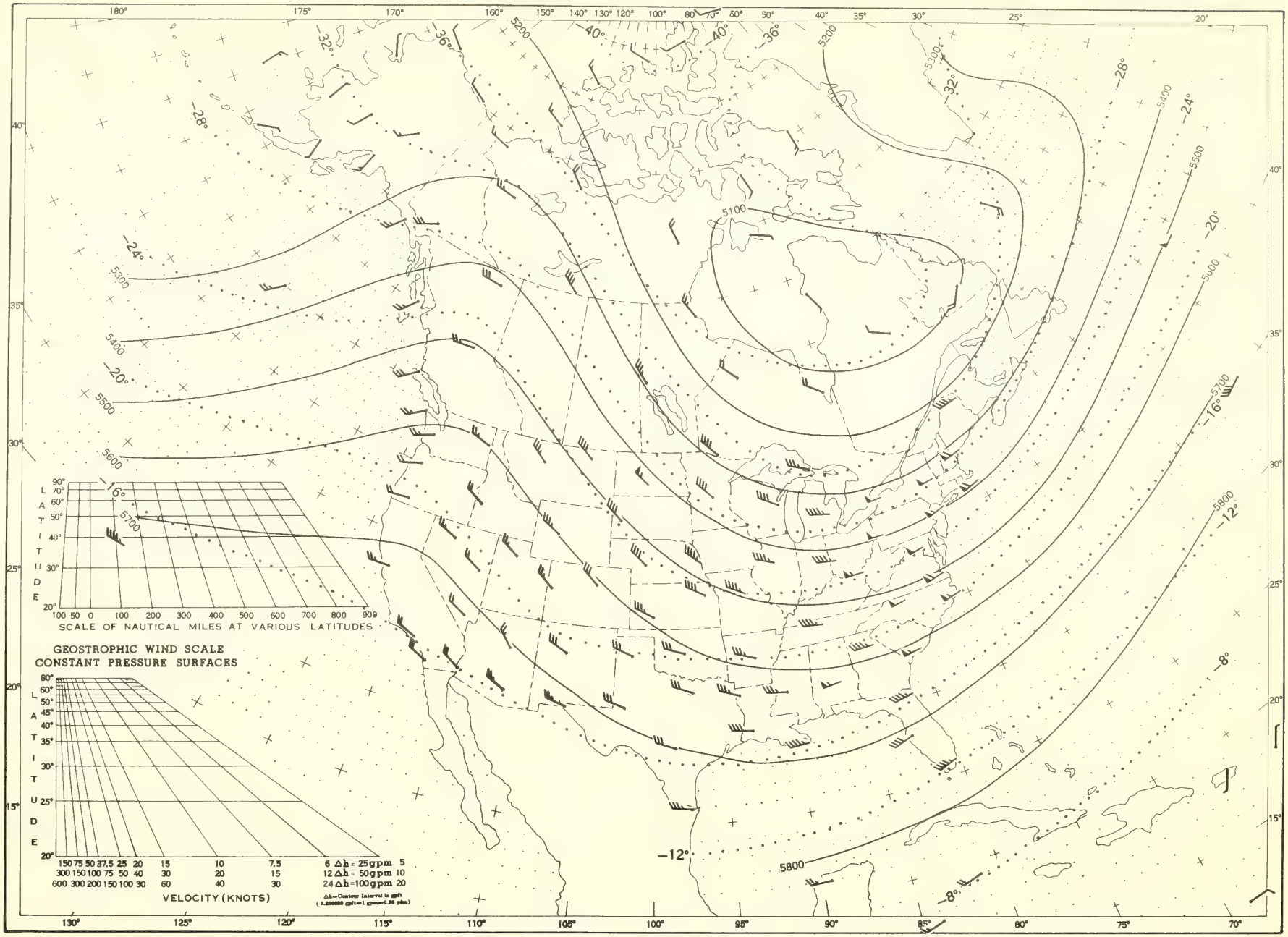
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, February 1963. Average Height and Temperature, and Resultant Winds.



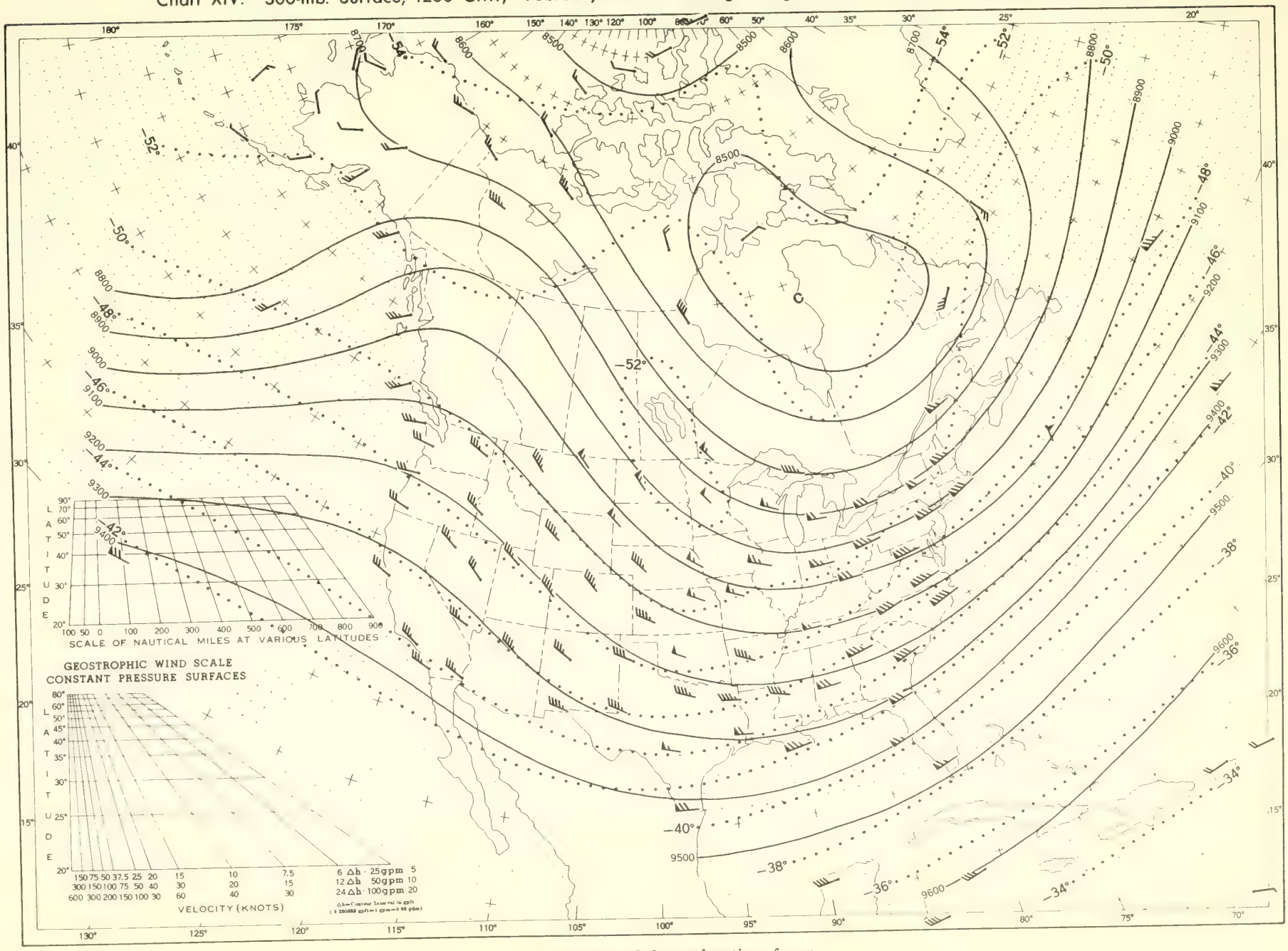
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, February 1963. Average Height and Temperature, and Resultant Winds.



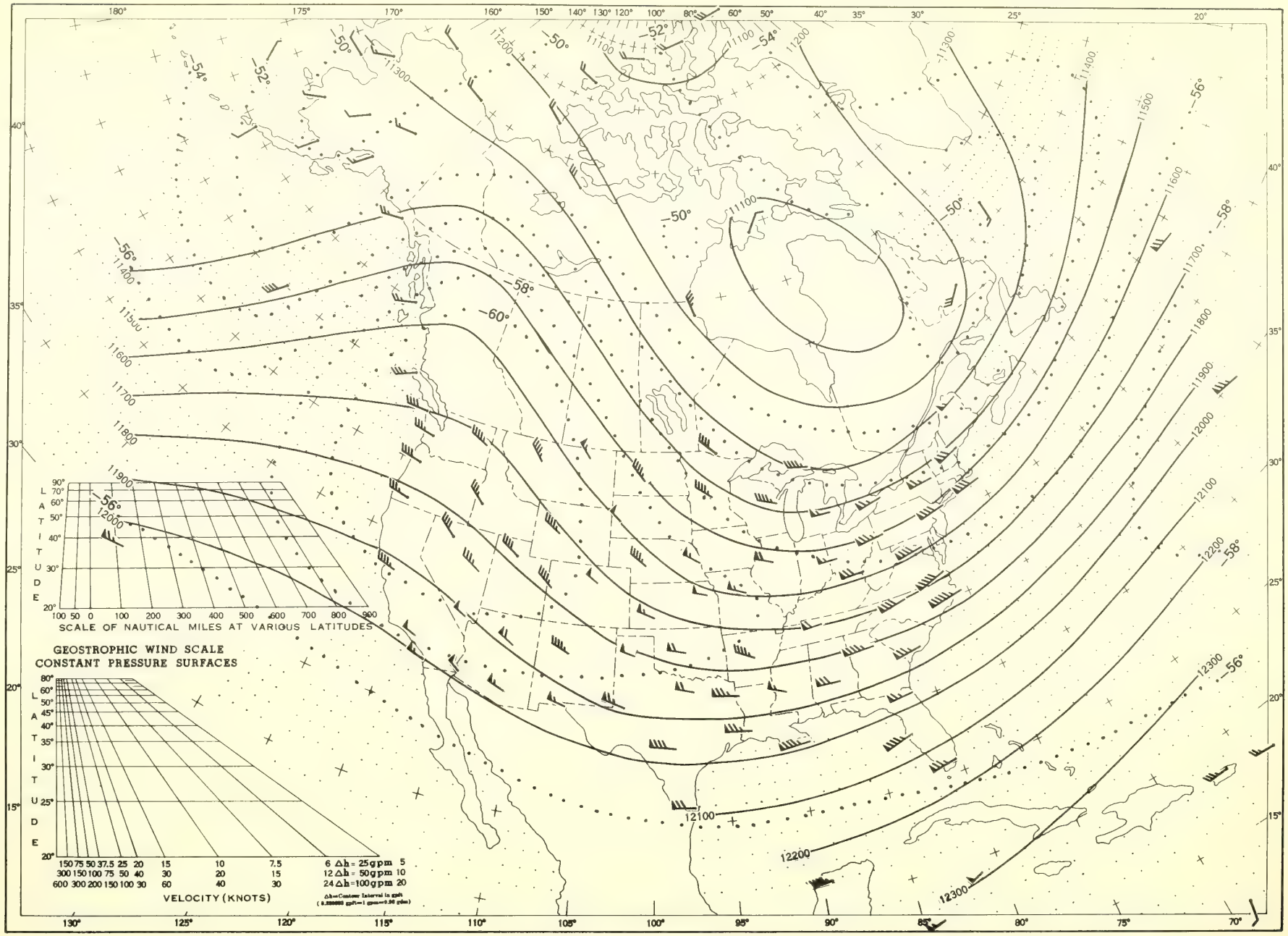
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, February 1963. Average Height and Temperature, and Resultant Winds.

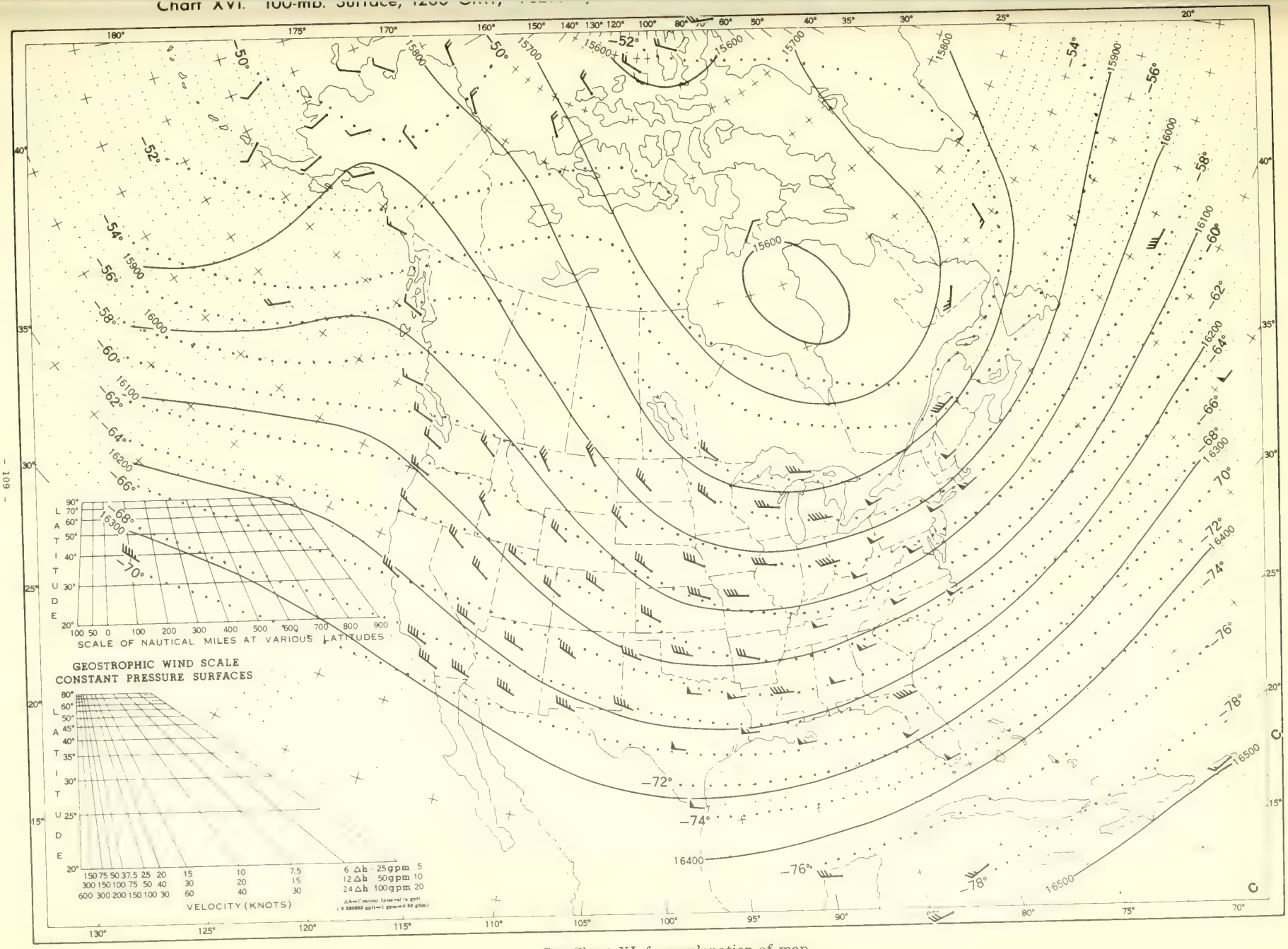


See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, February 1963. Average Height and Temperature, and Resultant Winds.

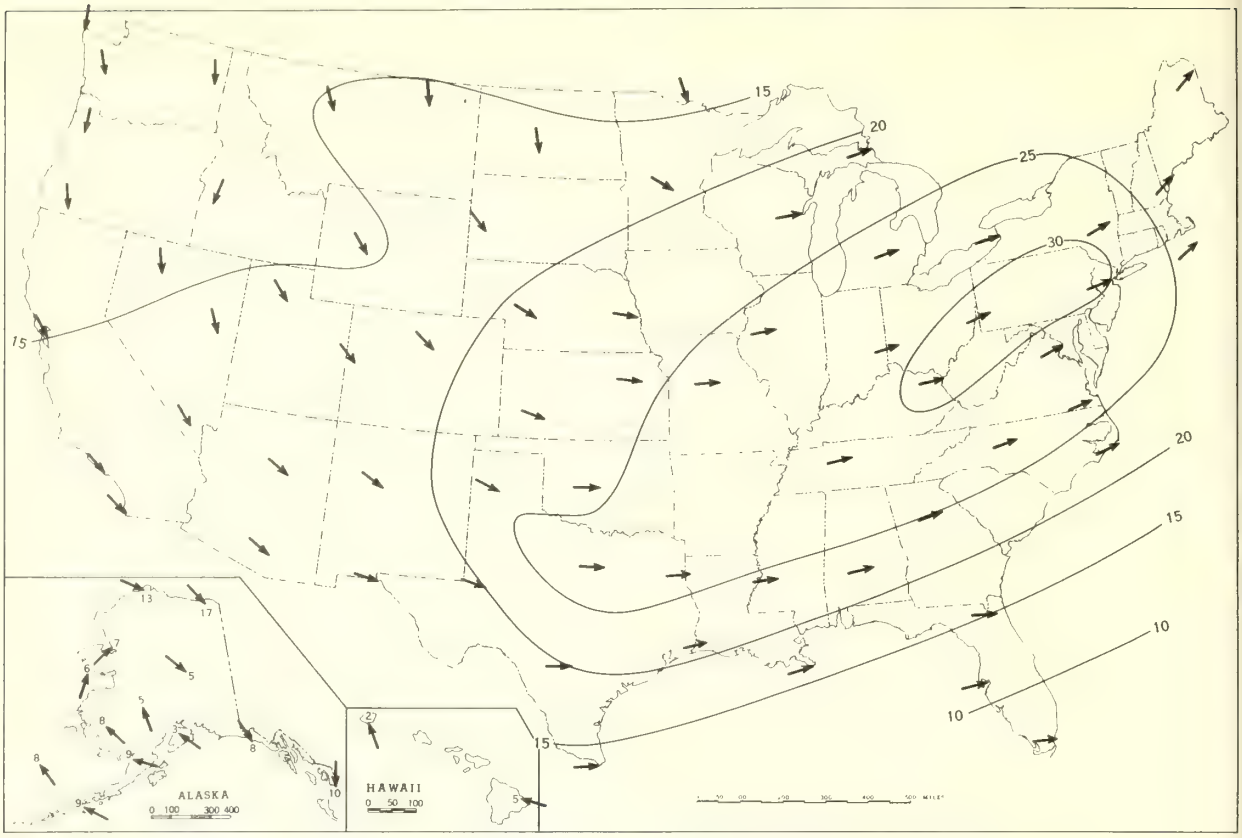


See Chart XI for explanation of map.

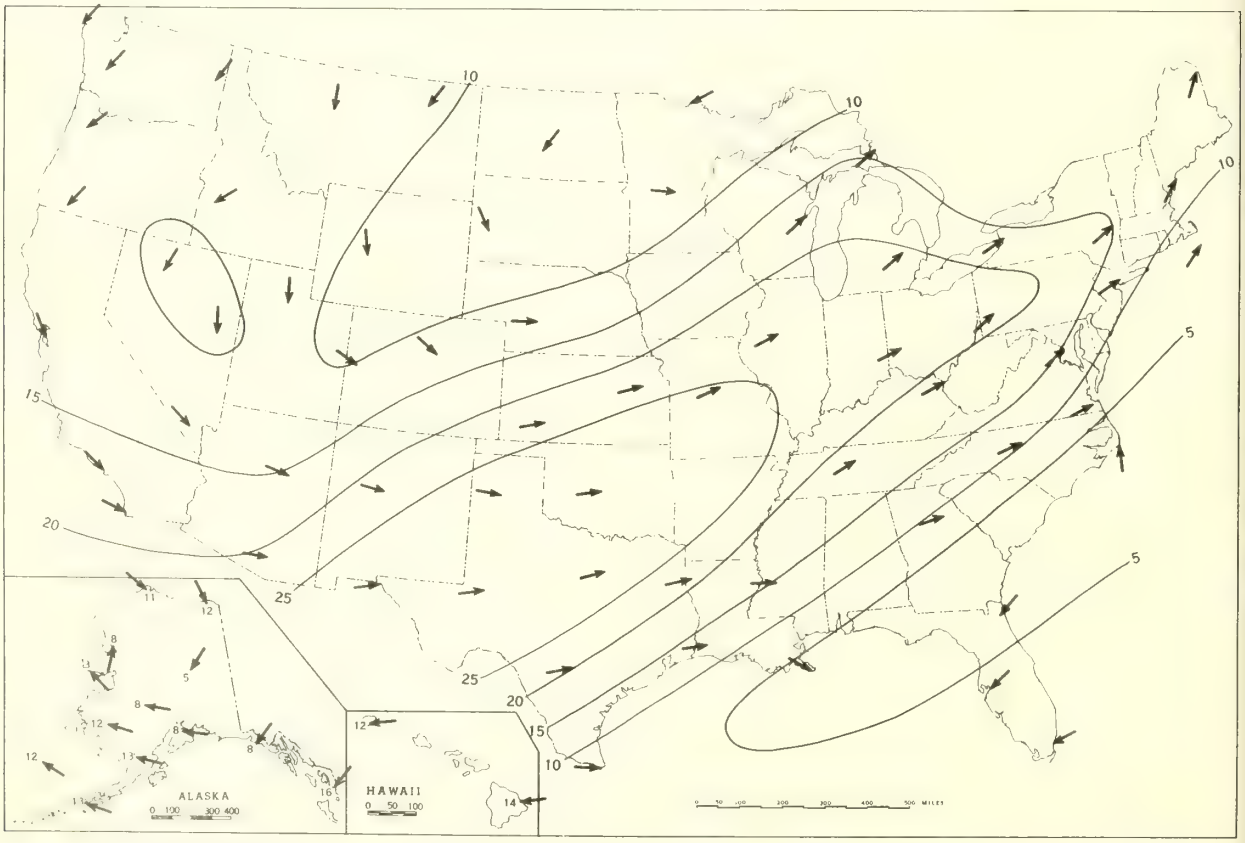


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, February 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, February 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM-WB-ASHEVILLE---6-10-63---1825

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Division

H-Free

MARCH 1963
Volume 14 No. 3





ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 3 MARCH 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

Temperatures for March averaged well above normal, except slightly below in the Far Southwest. Precipitation was highlighted by heavy rains in the Midwest where considerable flooding occurred. The month was unusually dry in the extreme northern and southern Great Plains and along the Gulf coast. Snowfall in the Far West was not heavy enough to offset deficits of the previous winter months and the mountain snowpack remained much below normal. An outbreak of severe local storms, including several tornadoes, occurred in Mississippi, Alabama, and Tennessee on the 11th and 12th. Unusually windy weather prevailed in the northern portion of the Nation. The month was relatively mild and wet in Alaska and Hawaii.

TEMPERATURE.--March was generally about 4° to 6° warmer than normal east of the Continental Divide. The first 2 or 3 days of the month were unusually cold in the Ohio Valley and interior sections of the Northeast, and temperatures were unusually warm for the time of year in nearly all sections during the last week. Temperature fluctuations during the remainder of the month were of near normal magnitude and frequency.

Owing mainly to the hot weather of the last week, many scattered stations east of the Rockies had their warmest March since 1946. Among these stations were Sioux City, Iowa; Minneapolis, Minn.; Topeka, Kans.; St. Louis, Mo.; Chicago, Ill.; Louisville, Ky.; Glasgow, Mont.; Binghamton, N. Y.; Columbia, S. C.; and Atlanta, Ga. In the South, where temperatures occasionally rose into the 80's and 90's, several stations reported record high temperatures for so early in the season. The warm weather, particularly during the last week, caused ice to melt rapidly in the northern areas and removed most of the snow cover.

PRECIPITATION.--In the Midwest where heavy rainfall caused much flooding, the first heavy rains fell March 4-6 over frozen ground which was covered with snow and ice. Heavy rains fell again on the 11th and 12th, 16th and 17th, 18th to 20th, and 25th to 26th. At some stations these rains totaled over 10 inches for the month, and were more than twice the normal amounts for the month in parts of Ohio, Indiana, Illinois, Kentucky, Tennessee, and West Virginia. Indianapolis, Ind., reported a monthly total of 10.74 inches which was the greatest amount there for March since 1904. Louisville, Ky., had its fifth greatest March total on record, 9.04 inches. Asheville, N. C., measured 7.66 inches for the month, a new record. Cincinnati, Ohio, had 9.83 inches for its third wettest March. Knoxville, Tenn., had 9.92 inches for its wettest March since 1917, and Chattanooga, Tenn., 12.83 inches, also the most there since 1917.

In contrast to the heavy rainfall in the Midwest, the Gulf coastal areas, Texas, and eastern New Mexico were extremely dry, with some sections receiving less than 10 percent of their normal precipitation. Key West in extreme southern Florida measured only 0.10 inch. Macon, Ga., had the least rainfall for March since 1955, and so did Lake Charles, La. New Orleans, La., had its second driest March on record, and Jackson, Miss., its fifth driest March. In New Mexico, Albuquerque reported blowing dust on 6 days and the monthly total precipitation was only 0.04 inch.

In Texas, monthly totals ranged from less than 25 percent of normal in eastern sections to none at all or only traces in extreme western sections. Corpus Christi had only 0.09 inch, continuing the drought of the past year and one-half, with grass fires occurring south of the city on the 4th.

Precipitation was less than 50 percent of normal in North Dakota and most of Montana. Blowing dust was reported on a number of occasions during the latter half of the month in eastern North Dakota.

Precipitation was above normal in the Pacific States, but benefits were limited, and water shortages for the coming summer were in prospect for most sections. The water situation was reported to have improved in California, however, and agriculture benefited considerably.

SNOWFALL.--In the Far West, snowfall generally was about normal or below and the mountain snowpack remained much below normal. At Stampede Pass, Wash., where 65 inches of snow fell during the month, the mountain snowpack was 40 to 60 inches below normal at the end of the month.

East of the Rockies, snowfall generally was about normal or below, except in New England and eastern New York State where it was unusually heavy. In northern Maine, depths ranged from 3 to 6 feet about midmonth.

Snowfall was abnormally heavy in Alaska. Barrow, on the Arctic coast, reported 15.8 inches for the month and 7.1 inches in 24 hours, both new records. Fairbanks measured 29.6 inches for the month, the most in 28 years, and a depth of 30 inches there on the 31st was the greatest for that date since 1935.

DESTRUCTIVE STORMS AND UNUSUAL WEATHER PHENOMENA.--On the 11th and 12th, tornadoes in the South were blamed for 4 deaths and at least 21 injuries. A very damaging tornado on the 5th moved through Bessmer, Homewood, and Mountain Brook in the vicinity of Birmingham, Ala., leaving 15 injuries and property losses estimated at several million dollars. On the 16th, a tornado injured 15 persons and caused damage of $100,000 or more about 15 or 20 miles northeast of Evansville, Ind., in Warick County. Another tornado caused considerable damage in the vicinity of Kaufman, Tex., on the 10th. An apparent tornado damaged some buildings in Dinuba, Calif., on the 14th.

During severe thunderstorm activity in southern California on the 17th, a display of rare ball lightning was reported at Sunland. On the same date numerous lightning strikes were reported at Long Beach, Calif., during an unusual electric display and hail was observed for the second time in March during 22 years of record.

On the 16th, high winds in eastern Colorado caused thousands of dollars damage at the Jefferson County Airport

and in northwest Denver.

Confirmed reports of hail 3 inches in diameter occurred 13 miles south of the Miami, Fla., Airport on the 29th.

Concordia, Kans., reported an average wind speed of 14.7 m.p.h., for the month, the windiest month on record, and a 63 m.p.h., wind on the 16th was the second fastest mile of wind recorded there since 1885.

CONDENSED CLIMATOLOGICAL SUMMARY

MARCH 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	8 Stations	89	31+	2 Stations	22	22+	Bridgeport 2W	15.20	Gulf Shores Post Office	0.80
Alaska	Cape Decision	69	14	Allakaket	-51	15	Thompson Pass	14.56	Tanacross	T
Arizona	Buckeye	100	27	Maverick	-10	19	Tonto Cr. Fish Hatchery	2.63	6 Stations	.00
Arkansas	2 Stations	90	31+	Pelsor	15	2	Burdette	8.31	Fayetteville FAA AP	1.42
California	do	92	27	White Mountain 2	-12	3	Honeydew 2WSW	18.11	Twentynine Palms	T
Colorado	do	92	29+	Taylor Park	-34	14	Rico	3.00	Monte Vista	.05
Connecticut	do	76	25	2 Stations	3	3+	Groton	4.47	Baltic	2.20
Delaware	3 Stations	81	30	Milford 3WNW	21	3	Milford 3WNW	7.54	Wilmington Porter Res	4.20
Florida	Ocala	95	18	2 Stations	28	23+	Marianna Ind. School	4.62	Flamingo Ranger Station	.00
Georgia	4 Stations	91	19+	Commerce 2SSW	16	1	Helen 1SE	15.00	Brooklet 1W	.92
Hawaii	2 Stations	88	31+	Haleakala Summit, Maui	27	10	Wahiawa Mtn. 990, Kauai	31.75	Honaunau 27, Hawaii	2.20
Idaho	Grand View 3WNW	76	25	Island Park Dam	-19	13	Burke 2ENE	4.89	2 Stations	T
Illinois	2 Stations	86	29	3 Stations	0	2+	Palestine	9.88	Rockford 6ENE	1.72
Indiana	Spurgeon 2N	85	30	Farmland 5N	-9	3	North Vernon 2SW	13.13	Wanatah 2WNW	1.85
Iowa	4 Stations	82	24	Decorah	-9	1	Emerson 4ENE	4.56	Sioux City 4N	.47
Kansas	Ashland	95	29	Brewster	6	14	Atchison	3.81	Richfield 4N	.10
Kentucky	Leburn 1E	89	31	Blaine 1W	17	4+	Jeremiah	12.39	Blaine 1W	4.38
Louisiana	Logansport	98	27	3 Stations	25	6	Lake Providence	4.92	Pontchartrain Causeway	.07
Maine	Sandford 2NNW	69	25	Haynesville	-29	16	Rockland	5.17	St. Frances	1.41
Maryland	2 Stations	87	30	2 Stations	13	4+	Oakland 1SE	9.36	Conowingo Dam	3.71
Massachusetts	Boston WBAP	78	25	do	-3	1	Salem CG Air Station	6.93	Hubbardston	2.19
Michigan	Benton Harbor Airport	81	29	Bergland Dam	-31	1	Eagle Harbor Coast Guard	5.44	Chatham Exp. Farm	.71
Minnesota	Wheaton	84	31	Virginia	-25	10	Preston	3.03	Roseau Power Plant	.10
Mississippi	Decatur	92	31	Clarksdale	22	9	Fulton 3W	9.64	Pearlington 2NNE	1.00
Missouri	2 Stations	88	29	Memphis	5	1	Fisk	10.90	Prairie Hill 3WNW	1.72
Montana	Custer	79	22	2 Stations	-19	13+	Haugan	3.94	6 Stations	.00
Nebraska	Benkelman	90	28	Harrisburg 10NW	-6	5	Ulysses 3NNE	4.07	Hay Springs 12S	.26
Nevada	Mesquite	87	27	Ruth	-7	16	Mt. Rose Highway Sta.	5.21	Indian Springs	T
New Hampshire	Manchester	73	26	First Conn Lake	-20	17	Pinkham Notch	5.04	Lakeport 2	1.70
New Jersey	4 Stations	81	30+	Layton	1	3	Cape May 3W	7.17	Paterson	1.83
New Mexico	Gowdy Ranch	95	31	Gavilan	-18	13	Bateman Ranch	2.15	21 Stations	.00
New York	2 Stations	79	25	2 Stations	-19	1	Boonville 2SSW	5.42	Sodus Center	.53
North Carolina	4 Stations	87	31+	Celo 2S	15	3	Oconalufty	15.23	Wilmington WBAP	.94
North Dakota	Bowman Court House	85	29	Belcourt Indian Res.	-17	13	Dickenson Exp Station	1.79	Towner	.00
Ohio	Ironton	85	29	Marion Water Works	-11	2	Hillsboro	11.53	Defiance	2.27
Oklahoma	Frederick	96	25	Beaver	11	5	Valliant 1E	6.29	3 Stations	T
Oregon	Richland	80	29	Fremont	2	3	Tidewater 1WSW	13.23	Princeton 13E	T
Pennsylvania	Newell	83	30	Titusville Water Works	-9	1	Creekside	8.11	Wellsboro 3S	1.80
Puerto Rico	Dos Bocas	93	23+	Cayey 1NW	52	25+	Guasataca Dam	13.15	Santa Rita	.02
Rhode Island	2 Stations	66	28+	Kingston	13	1	Newport	4.05	Block Island WBAP	3.35
South Carolina	do	93	31+	Long Creek 1N	10	1	Caesars Head	12.24	Branchville 6S	.04
South Dakota	Huron WBAP	86	31	Marcus 8NNW	-6	17	Lead	3.02	Ludlow 2NW	T
Tennessee	2 Stations	89	31	Mountain City 2	16	23	Athens 2SE	13.89	Covington 1W	5.37
Texas	Rio Grande City 3W	101	19	2 Stations	12	6+	Negley	6.16	69 Stations	.00
Utah	St. George PH	80	22+	Bryce Canyon FAA AP	-16	18	Alta	8.45	Ouray	.04
Vermont	Bennington	73	26	Bloomfield	-15	1	Reading Hill	7.03	Gilman	.67
Virginia	5 Stations	88	31+	Monterey	13	4	Pennington Gap	13.90	Driver 4NE	2.66
Washington	2 Stations	74	22+	Mount Spokane Summit	8	18	Cougar 6E	12.91	Sequin	.36
West Virginia	Williamson	86	31	Pickens 1	7	23	Pickens 1	11.53	Harpers Ferry	3.65
Wisconsin	Pittsville	80	30	2 Stations	-23	10	Mather 5NW	4.16	Brule Island	.70
Wyoming	Torrington Exp Farm	81	28	Bondurant 3NW	-30	4	Rawlins FAA AP	1.93	3 Stations	.00

+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	990.3	1019.3	72	45	58.4	4.9	86	31+	32	22	0	1	43	62	6.31	0.35	2.38	10	5	0.0	0	10.7	S	38	W	19+	14	4	13	5.0	66
HUNTSVILLE	605	995.1	1018.7	69	43	56.3	4.5	88	31	30	22	0	4	41	61	10.46	4.89	5.84	11	7	0.0	0	11.1	SSE	62*	WNW	11	16	4	11	4.8	
MOBILE	211	1016.8	1019.2	75	53	63.9	4.6	87	17	37	22	0	0	49	65	1.48	-5.75	1.13	7	1	0.0	0	8.7	SW	32*	S	11	9	6	16	6.1	
MONTGOMERY	195	1011.1	1019.5	73	48	60.5	4.5	86	18	33	22+	0	0	46	62	3.28	-2.88	1.10	9	6	0.0	0	9.7	S	37	W	5	11	6	14	5.4	64
ALASKA												B																			
ANCHORAGE	90	1007.8	1012.9	32	16	24.0	0.7	43	8+	1	28	0	26	13	66	1.48	0.97	0.53	15	0	11.4	6	9.2	N	35*	NNW	27	7	7	17	6.8	48
ANNETTE	110	1008.5	1012.6	46	35	40.8	3.0	52	9	30	31+	0	4	32	73	4.21	-5.34	0.98	18	0	7.4	1	7.6	N	29*	SSE	27	3	6	22	7.7	
BARROW	22	1017.3	1018.2	-12	-28	-19.6	-5.0	14	30	-41	11	0	31	-29	60	1.49	1.38	0.71	11	0	15.8	23	13.3	W	55*	ESE	25	17	6	8	4.4	
BARTER ISLAND	39	1016.6	1018.6	- 8	-25	-16.2	- 1.3	17	31	-40	13	0	31	-22	74	0.37	0.17	0.17	10	0	3.7	25	15.4	W	69*	WSW	26	11	9	11	5.1	
BETHEL	125	1013.5	1017.6	23	7	15.1	3.5	38	7	-14	28	0	31	-12	75	1.56	0.53	0.40	20	0	16.9	7	16.0	NNE	44*	S	25+	7	3	21	7.5	
COLD BAY	94	1013.9	1017.3	39	29	34.4	5.6	47	25+	18	29	0	20	30	85	3.02	1.27	0.55	16	0	2.8	1	19.5	SSE	49*	W	17	1	9	21	8.5	
CORDOVA	40	1009.1	1010.7	36	22	28.8	- 0.3	41	6	9	29	0	24	23	79	10.32	6.48	2.42	14	0	13.7	4	6.1	ESE	23*	ESE	3	6	7	18	7.0	
FAIRBANKS	436	999.0	1017.1	21	- 5	7.7	- 1.2	40	8	-31	28	0	31	1	69	2.10	1.70	1.92	12	0	29.6	35	5.5	N	27*	WSW	10	8	5	18	6.5	
JUNEAU	17	1011.9	1012.6	38	26	31.9	1.5	45	25+	9	31	0	21	25	77	3.69	0.42	0.69	18	0	28.9	10	9.0	ESE	40*	ESE	3	3	4	24	8.3	35
KING SALMON	43	1014.9	1016.7	32	15	23.2	3.7	50	9	- 9	19	0	29	18	78	2.40	1.44	0.55	16	0	15.9	8	13.4	NNW	44*	S	12+	5	5	21	7.7	
KOTZEBUE	10	1017.3	1017.6	4	-16	- 6.3	- 4.2	34	25	-32	2	0	31	-12	75	0.80	0.52	0.37	11	0	14.0	19	13.4	ESE	44*	WNW	26	14	4	13	5.1	
MC GRATH	334	1003.4	1016.9	22	- 4	9.0	0.7	41	24+	-30	13+	0	31	0	61	1.05	0.12	0.24	14	0	25.3	24	7.2	N	32	SSW	25	7	6	18	6.8	
NOME	13	1015.6	1016.2	17	- 2	7.4	- 0.5	33	25+	-25	10	0	31	0	70	1.02	0.14	0.30	9	0	13.2	15	13.6	E	35*	SE	24+	9	5	17	6.3	41
ST. PAUL ISLAND	22	1011.9	1012.7	34	25	29.2	5.0	40	30	5	9	0	29	27	89	2.37	1.31	0.63	18	0	9.5	4	19.7	S	52*	W	16	2	2	27	9.1	
SHEMYA	102	1006.5	1010.1	37	31	33.8	0.9	42	22	23	9+	0	18	30	85	1.42	-1.15	0.46	19	0	5.4	2	22.3	S	45	SSE	20	0	5	26	8.8	
YAKUTAT	28	1010.2	1011.2	38	25	31.3	- 0.1	46	1	12	30	0	23	25	78	11.90	3.21	2.81	22	0	28.6	13	7.1	E	35*	SE	3	4	5	22	7.8	
ARIZONA																																
FLAGSTAFF	6993	786.4	1015.0	50	19	34.5	- 1.1	64	27	1	19	0	31	18	54	1.03	-0.42	0.65	7	1	8.0	7	8.8	SSW	26*	SSE	17	13	7	11	5.2	
PHOENIX	1117	974.1	1013.4	76	46	61.0	0.5	87	28	36	16+	0	0	28	31	0.30	-0.36	0.30	2	0	0.0	0	7.0	SSE	35*	W	17	18	8	5	3.7	90
PRESCOTT	5014	844.9	1014.6	60	29	44.3	- 1.2	73	27	18	18	0	23	21	44	0.72	-0.01	0.61	4	1	4.0	3	10.6	S	56	SE	2	14	12	5	4.1	85
TUCSON	2584	924.6	1013.1	72	43	57.7	0.2	86	28	30	5	0	1	24	32	0.34	-0.19	0.25	4	0	0.0	0	10.5	SSE	35	SW	15	15	12	4	3.7	84
WINSLOW	4880	849.6	1015.2	63	29	45.7	- 0.4	80	27	17	14	0	20	19	41	0.38	-0.01	0.22	4	0	4.2	2	11.3	SW	53*	SSW	15	12	11	8	4.5	
YUMA	199	1008.5	1013.9	80	49	64.4	- 1.6	91	27	40	6	1	0	27	30	0.16	-0.08	0.16	1	0	0.0	0	6.8	WNW	27	W	3	19	6	6	3.4	95
ARKANSAS																																
FORT SMITH	449	999.4	1016.7	70	41	55.4	4.3	89	28	26	6	0	6	42	63	1.62	-1.85	0.51	10	5	0.0	0	8.8	NE	30	SW	12+	8	14	9	5.4	65
LITTLE ROCK	257	1003.8	1017.3	71	44	57.7	5.9	88	31	30	6	0	2	42	60	3.81	-1.00	1.13	10	5	T	T	10.3	WSW	34	SW	12	10	14	7	5.1	74
TEXARKANA	361	1016.7	1017.2	72	49	60.3	5.4	85	31+	32	6	0	1	44	66	2.38	-2.36	0.55	10	5	T	T	10.5	S								82
CALIFORNIA																																
BAKERSFIELD	494	1000.2	1018.3	67	44	55.8	- 1.1	80	21	38	19+	0	0	44	61	1.25	0.19	0.81	5	0	0.0	0	8.1	NW	32*	SE	16	12	11	8	5.0	
BISHOP	4108	872.2		61	28	44.5	- 2.6	71	30+	19	5	0	23			0.60	0.05	0.39	5	0	1.6	1						15	9	7	3.9	
BLUE CANYON	5280	837.2		43	30	36.4	- 2.6	56	1	22	24+	0	21			10.83	2.38	3.25	13	0	80.0	37	9.5	SSW	39	S	27	10	5	16	6.5	
BURBANK	699	990.5	1016.7	67	45	56.0	- 1.9	84	1	39	18	0	0	39	59	3.21	1.05	1.80	8	2	0.1	T	7.2	S	26*	NW	3	15	7	9	4.3	
EUREKA U	43	1016.2		55	44	49.2	0.5	65	25	36	17+	0	0			6.28	1.03	1.37	16	0	0.0	0	8.4	N#	40	SW	27	5	6	20	7.6	47
FRESNO	326	1005.3	1017.3	65	41	53.3	- 1.1	78	21	34	18	0	0	40	67	2.10	0.14	1.03	7	2	0.0	0	7.2	NW	34	NW	31	15	8	8	4.5	83
LONG BEACH	34	1015.9	1017.4	66	45	55.8	- 1.0	78	1	38	18	0	0	45	70	2.62	1.25	1.19	6	2	0.0	0	6.6	W	25*	W	15+	12	12	7	4.8	
LOS ANGELES	97	1013.8	1017.6	65	48	56.6	0.6	74	20+	41	18	0	0	45	69	2.42	0.63	1.13	6	1	0.0	0	8.8	W	29*	W	2	12	13	6	4.4	
LOS ANGELES U	312			67	50	58.3	- 1.1	79	1	42	18	0	0			2.78	0.52	1.36	8	3	0.0	0	7.2	W#	31	E	28	10	16	5	4.5	87
MT SHASTA R	3544	891.3		50	30	39.6	- 1.6	62	20+	18	4	0	24			5.82	1.36	2.48	14		35.2	14						8	7	16	6.5	
OAKLAND	3	1017.9	1018.2	61	44	52.5	- 1.1	68	20+	37	17	0	0	40	66	3.31	0.89	1.53	9	0	0.0	0	10.1	WNW	35*	SSE	22	12	7	12	5.2	
POINT ARGUELLO	367	1004.1		59	42	50.9	- 1.1	71	20	34	19+	0	0			3.68	1.72	1.54	8	0	0.0	0	9.0		28*	S	16	14	6	11	5.0	
RED BLUFF	341	1004.1	1016.9	62	40	50.8	- 3.3	72	1	30	17	0	3	36	61	2.70	0.00	1.34	10	1	T	T	11.4	SSE	42	SE	27+	12	4	15	6.0	66
SACRAMENTO	17	1017.0	1018.0	62	40	51.0	- 3.4	72	1	31	15	0	1	42	73	4.25	1.89	2.07	11	3	0.0	0	6.3	SSW	38	W	22	10	7	14	5.6	69
SACRAMENTO U	23			63	43	52.8	- 2.4	73	1	33	15	0	0			3.56	1.10	1.76	11		0.0	0										
SANDBERG R	4517	861.7		48	33	40.7	- 4.3	62	6	22	17	0	13			1.58	0.14	0.80	5	0	9.2	8	16.1	N	46*	S	16	15	6	10	4.4	
SAN DIEGO	13	1013.8	1017.1	66	49	57.5	- 1.0	75	1	43	18	0	0	45	66	1.33	-0.24	1.05	5	0	0.0	0	7.8	WNW	32	SE	16	12	10	9	4.9	78
SAN FRANCISCO	8	1018.0	1018.7	60	44	51.9	- 1.4	68	20	38	17	0	0	42	70	3.94	1.25	1.68	10	0	0.0	0	11.5	W	41	WNW	2	13	10	8	4.8	
SAN FRANCISCO U	52			60	48	54.1	- 0.6	68	1	41	16	0	0			3.87	0.94	1.73	11	0	0.0	0	8.1	W#	34	SE	22					79
SANTA CATALINA	1568	960.4		59	47	53.1		74	1	42	18+	0	0			1.84		0.87	7	0	0.0	0						12	7	12	5.1	
SANTA MARIA	238	1009.7	1018.6	63	40	51.1	- 2.2	77	1	33	18+	0	0	43	76	3.59	1.53	1.52	8	0	0.0	0	8.5	WNW	32*	WNW	31	17	5	9	4.2	
STOCKTON	28	1016.6	1018.2	63	40	51.2		71	1	31	18	0	1	41	71	2.84		1.58	9	0	0.0	0	7.6	W	28*	ESE	16	11	9	11	5.3	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO																																
ALAMOSA	7536	767.0		47	17	32.3	0.2	67	28	- 7	5	0	29			0.25	-0.01	0.17	6	1	3.6	1										
COLORADO SPRINGS	6173	808.0	1015.7	52	25	38.4	2.7	80	28	5	5	0	23	14	44	0.62	0.01	0.35	6	0	8.1	4	11.0	NNE	53*	WNW	16	15	5	11	4.7	
DENVER	5283	834.7	1013.7	51	24	37.3	- 0.6	83	28	- 3	13	0	24	18	52	1.42	0.21	0.56	8	0	18.0	9	11.6	S	41	SW	28	16	5	10	4.4	76
GRAND JUNCTION	4849	857.1	1014.5	54	30	41.9	0.4	73	31	16	5	0	20	19	47	0.55	-0.20	0.28	8	1	4.3	1	6.2	ESE	34	SW	28	11	9	11	5.4	64
PUEBLO	4639	853.1	1013.6	58	26	42.2	2.1	84	28	9	5	0	23	18	46	0.32	-0.20	0.15	5	0	4.1	2	9.7	NE	55	N	3	15	6	10	4.3	80
CONNECTICUT																																
BRIDGEPORT	7	1016.2	1017.2	46	32	38.6	1.1	66	28	18	1	0	19	29	71	2.90	-1.35	0.92	13	1	7.5	4	13.1	NNW	44*	WNW	6	8	8	15	6.3	
HARTFORD	169	1009.8	1016.0	45	27	36.1	0.4	72	25	15	3+	0	26	28	73	3.68	-0.12	1.03	12	1	13.8	12	8.6	N	32	W	7	5	9	17	6.9	54
NEW HAVEN	6	1015.6		46	31	38.3	1.4	66	28	14	1	0	19			3.60	-1.02	1.25	13	1	9.4	4	8.1		30	W	6	6	12	13	6.3	59
DELAWARE																																
WILMINGTON	78	1013.8	1016.7	54	34	44.1	2.8	78	25	26	23+	0	17	33	69	4.24	0.22	1.01	13	1	0.3	T	10.9	WNW	37*	WNW	6	6	10	15	6.5	
DIST.OF COLUMBIA																																
WASHINGTON U	72			60	40	50.3	4.6	87	30	31	23+	0	3			5.54	2.18	1.17	13													
WASH NATL AP	14	1012.6	1017.3	59	38	48.5	3.7	86	30	27	3	0	6	32	58	5.43	2.22	2.11	14	3	1.1	1	8.7	S	33	N	30	8	12	11	5.8	62
FLORIDA																																
APALACHICOLA U	13	1017.9		69	56	62.5	1.5	79	14	44	22	0	0			0.87	-3.65	0.53	3	0	0.0	0	6.8		32	NW	6	9	10	12	5.8	74
DAYTONA BEACH	31	1018.8	1020.7	76	57	66.5	2.7	87	12	37	23	0	0	56	71	1.46	-2.10	0.59	11	2	0.0	0	9.5	SW	23*	WNW	6	8	12	11	5.8	
FORT MYERS	13	1018.9		83	61	71.8	3.6	89	18	45	23	0	0			0.59	-2.03	0.25	5	0	0.0	0	9.0		25*	NNE	30	12	15	4	4.5	
JACKSONVILLE	24	1019.3	1020.8	77	55	65.7	3.5	89	19+	37	24	0	0	52	68	2.23	-1.26	0.85	7	1	0.0	0	9.7	NE	38	NE	15	9	9	13	5.7	82
KEY WEST	5	1017.6	1019.0	80	71	75.4	2.9	86	20	61	23	0	0	65	73	0.10	-1.67	0.09	3	0	0.0	0	12.5	SE	31	NE	31	16	11	4	3.8	89
LAKELAND U	214			79	60	69.2	2.7	89	19+	45	22	0	0			2.78	-1.47	1.41	8	3	0.0	0	8.2	W#				9	12	10	5.7	64
MIAMI BEACH	9			79	70	74.3	2.7	91	20	56	22	1	0			0.06	-1.89	0.05	2	0	0.0	0	14.6	S	31	NE		12	14	5	4.3	79
MIAMI	7	1018.2	1019.6	81	66	73.4	2.9	88	20+	52	23+	0	0	63	72	0.73	-1.54	0.50	4	2	0.0	0	12.1	SE	31*	N		12	15	4	4.5	
ORLANDO	106	1015.6	1020.4	81	59	69.5	4.6	91	19+	43	23	3	0	57	70	2.69	-0.72	1.03	7	1	0.0	0	9.6	SSW	29*	WNW	6	7	12	12	5.6	
PENSACOLA U	13			69	54	61.9	1.6	84	14	41	22+	0	0			1.02	-5.30	0.68	9	2	0.0	0	9.5	SSE	26	W	6+					57
TALLAHASSEE	58	1017.7	1020.5	75	49	61.9	1.3	88	18	33	23+	0	0	50	70	2.76	-2.42	1.26	8	1	0.0	0	10.5	S	32*	NW	20+	10	7	14	5.9	
TAMPA	19	1018.8	1020.5	79	58	68.4	2.4	87	16+	43	22	0	0	57	73	2.31	-1.44	1.07	5	1	0.0	0	12.9	NNE	35*	WNW	1	11	9	11	5.4	61
WEST PALM BEACH	15	1019.0	1020.2	81	64	72.5	2.6	89	20+	48	22	0	0	62	72	1.68	-1.76	0.56	9	2	0.0	0	10.6	SE	28*	NE	30	5	20	6	5.6	
GEORGIA																																
ATHENS	803	989.9	1019.8	70	44	57.0	5.4	86	31	30	23+	0	2	42	62	5.98	0.88	2.55	10	5	0.0	0	9.7	WNW	31*	SW	5	14	7	10	4.9	
ATLANTA	1005	976.9	1019.3	68	45	56.4	4.5	82	31	32	23+	0	2	38	56	5.92	0.55	2.04	10	4	0.0	0	7.8	WNW	30*	NW	21	15	4	12	5.0	70
AUGUSTA	143	1012.2	1019.3	73	45	58.8	3.9	87	19+	29	23	0	1	45	66	3.88	-0.29	2.16	7	6	0.0	0	8.1	WNW	30*	WNW	20	11	8	12	5.8	
COLUMBUS	385	1005.1		73	46	59.5	4.2	85	31	29	8	0	3			2.69	-3.32	0.88	9	3	0.0	0	8.8		25*	NW	21+	13	3	15	5.5	
MACON	356	1005.8	1019.7	74	48	60.7	3.8	88	19	32	23	0	1	44	61	2.79	-2.15	0.97	8	2	0.0	0	8.2	SE	35	W	21	10	6	15	5.8	64
ROME	637	996.0		70	39	54.5	4.1	86	31	25	8	0	8			10.41	4.54	4.06	9	7	0.0	0						15	6	10	4.5	
SAVANNAH	48	1017.8	1020.5	74	49	61.2	2.9	90	18	33	23+	1	0	49	69	1.68	-2.29	0.39	7	1	0.0	0	10.8	WNW	29	NW	21	9	6	16	6.1	72
THOMASVILLE U	283			74	53	63.3	2.9	89	18	38	22	0	0			4.03	-1.23	2.31	7	2	0.0	0						11	6	14	5.6	
HAWAII																																
HILO	31	1013.5	1015.6	79	65	72.0	1.4	86	31+	61	25+	0	0	65	82	15.85	1.15	3.62	26	7	0.0	0	9.0	SW	28	ESE	15	0	11	20	8.0	36
HONOLULU	7	1015.2	1015.3	79	66	72.3	- 0.5	83	30	60	7	0	0	64	76	8.39	5.50	3.20	13	7	0.0	0	9.2	ENE	31	SE	1	6	10	15	6.6	44
KAHULUI	44	1012.2	1015.1	81	65	73.3		87	2	60	9+	0	0	65	76	3.87		1.61	10	4	0.0	0	15.1	NE	39*	ENE	22	6	12	13	6.4	70
LIHUE	115	1010.2	1016.0	79	66	72.8	1.8	87	29	57	8	0	0	65	79	6.31	1.75	2.09	19	8	0.0	0	10.5	NE	23	NE	6	3	13	15	7.3	50
IDAHO																																
BOISE	2838	918.0	1015.0	56	33	44.3	3.1	73	21	21	4	0	18	23	48	0.21	-1.11	0.09	8	0	0.4	T	10.4	SE	32	NW	1	10	5	16	6.2	65
IDAHO FALLS 42NW R	4790			49	19	33.6	4.3	69	22	2	13	0	29			0.41	-0.05	0.24	4	0			8.2	SSW	35A	SW	30					
IDAHO FALLS 46W R	4933	845.2		48	21	34.2	4.2	64	22	8	13	0	29			0.74	0.12	0.37	5	0	6.2	4	8.2	SW	27A	WSW	28					
LEWISTON	1413	962.5		56	35	45.1	2.5	71	21	25	4	0	12			1.07	-0.11	0.29	12	0	0.3	T						5	6	20	7.4	
POCATELLO	4444	861.2	1016.0	50	27	38.2	2.4	65	27	15	6	0	27	20	52	0.85	-0.17	0.41	7	0	3.0	1	10.7	WSW	41	S	14	9	14	18	6.4	75
ILLINOIS																																
CAIRO U	314	1003.4		64	44	53.9	5.7	82	29	31	2	0	2			5.10	0.31	2.05	9	6	T	T	10.9	S#	36	SW	29	12	8	11	5.5	66
CHICAGO O HARE	658	989.1	1014.4	49	30	39.8		80	29	3	1	0	19	30	70	2.26		0.41	17	3	7.5	4	12.1	SSW	36*	SSW	29	4	8	19	7.4	
CHICAGO MIDWAY	610	991.5	1015.1	50	33	41.5	5.2	79	29	16	1	0	15	31	71	2.44	-0.30	0.39	15	5	5.4	4	12.3	SW	39	S	29	4	8	19	7.4	42

See footnotes at end of table

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90° F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
ILLINOIS	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MOLINE	582	992.2	1014.8	51	31	41.1	5.2	77	28	10	1	0	18	28	64	3.29	0.90	0.95	14	5	7.3	3	12.4	WNW	46	SW	16	7	7	17	6.8	48
PEORIA	652	992.9	1015.7	52	31	41.5	3.9	77	29	14	1	0	19	33	75	5.32	2.47	1.46	11	5	T	1	11.9	S	38	W	19	7	8	16	6.8	50
ROCKFORD	728	986.7	1014.6	47	29	38.4	4.4	74	29	4	1	0	23	30	76	2.94	0.48	0.63	15	3	12.2	3	11.8	WNW	30*	SSW	29	4	7	20	7.3	
SPRINGFIELD	588	991.5	1015.2	55	34	44.6	4.9	82	29	12	1	0	14	35	70	5.05	2.17	2.02	13	4	0.2	3	14.0	SSE	42	W	19	7	11	13	6.2	54
INDIANA																																
EVANSVILLE	381	1000.5	1016.7	61	38	49.6	5.3	82	29	24	22	0	8	38	68	8.62	4.31	2.29	10	7	T	T	8.1	NW	49	W	16	7	7	17	6.4	54
FORT WAYNE	791	982.7	1015.5	50	31	40.4	4.6	79	29	- 4	2	0	18	32	76	4.45	1.67	1.12	18	8	2.5	6	12.8	WSW	43	W	19	2	9	20	7.8	35
INDIANAPOLIS	793	985.2	1015.9	52	33	42.4	3.5	80	29	- 2	2	0	16	33	73	10.74	7.33	3.05	16	6	6.1	7	10.5	SE	35*	WNW	19	7	4	20	7.5	50
SOUTH BEND	768	986.1	1014.8	47	30	38.5	3.6	80	29	5	2	0	19	32	80	3.03	0.29	0.49	18	7	10.4	12	12.4	SW	35*	WSW	19	2	9	20	7.8	
IOWA																																
BURLINGTON	694	989.2	1015.0	54	32	43.1	5.8	77	28	15	1	0	18	32	71	3.95	1.24	1.38	14	5	3.2	T	12.7	WNW	48	NW	20	7	6	18	6.6	53
DES MOINES	948	982.7	1014.9	49	30	39.4	4.4	76	28	12	6	0	20	31	76	2.39	0.30	0.61	9	3	6.2	5	11.5	NW	42	SW	16	8	6	17	6.7	55
DUBUQUE	1065	988.3		46	28	36.9	5.0	73	30	7	1	0	22			3.18	0.42	0.85	11	4	9.0	4			36*	SSW	24	6	4	21	7.5	
SIOUX CITY	1095	972.2	1014.4	52	30	40.8	7.2	81	24	18	14	0	21	30	70	1.50	0.04	0.79	10	1	4.3	2	11.7	SSE	42	S	16	6	10	15	6.6	64
WATERLOO	868	981.4	1014.7	47	27	37.1	4.6	77	24	8	9+	0	23	29	74	3.27	1.22	1.36	10	1	9.9	8	12.5	NW	41*	NW	20	6	7	18	7.1	
KANSAS																																
CONCORDIA	1470	963.6	1014.3	58	33	45.1	4.8	84	28	22	6+	0	17	31	65	2.19	0.70	0.90	8	5	2.4	2	14.7	S	63	SW	16	13	6	12	5.6	69
DODGE CITY	2594	925.1	1014.3	62	34	47.7	5.9	91	28	19	5	1	16	26	53	0.46	-0.70	0.34	5	3	T	T	14.8	SSW	50	SW	16	12	9	10	4.9	72
GOODLAND	3645	885.2	1014.3	55	28	41.3	4.8	89	28	10	5	0	24	25	62	2.00	0.94	1.00	6	2	18.1	10	15.2	SSE	44*	NW	29	15	7	9	4.5	
TOPEKA	377	978.7	1015.0	60	35	47.3	5.6	85	28	17	1	0	16	34	64	2.53	0.52	2.04	6	2	0.2	T	14.9	S	52	SW	16	8	8	15	6.2	60
WICHITA	1321	965.3	1014.6	63	37	50.0	5.5	84	28	22	1	0	13	34	60	1.67	0.03	0.57	6	3	T	T	14.5	S	49	S	23	10	10	11	5.5	62
KENTUCKY																																
COVINGTON	869	983.6	1016.0	54	35	44.8	3.2	78	29	20	22	0	11	36	74	9.91	6.12	3.06	15	3	0.1	T	9.7	SW	27*	W	19	6	5	20	7.5	
LEXINGTON	979	980.9	1017.1	59	39	48.9	5.7	79	29	25	22	0	11	36	66	6.82	2.07	1.87	11	4	T	T	11.4	SSW	29*	N	4	7	8	16	6.5	
LOUISVILLE	474	997.2	1016.5	60	39	49.5	6.2	82	29	26	23	0	8	37	65	9.04	4.45	2.72	13	4	0.3	T	9.7	SSW	35	S	25	7	6	18	6.9	47
LOUISIANA																																
ALEXANDRIA	92	1014.0	1018.8	75	46	60.5		86	17	29	6	0	5	50	73	1.09		0.95	7	5	0.0	0	7.5	SSW				13	5	13	5.4	
BATON ROUGE	64	1015.6	1018.8	79	51	65.1	4.9	91	17	35	6	1	0	51	65	0.61	-4.30	0.27	5	1	0.0	0	9.5	S				11	8	12	5.6	
LAKE CHARLES	14	1016.9	1018.4	73	53	63.0	2.4	81	30	36	6	0	0	53	75	0.55	-3.69	0.36	3	1	0.0	0	10.8	S	29*	S	4	11	8	12	5.6	
NEW ORLEANS	3	1016.8	1019.0	77	54	65.6	5.2	87	19+	39	7	0	0	54	69	1.00	-4.34	0.95	3	1	0.0	0	9.5	S	29*	SSW	11	10	6	15	6.0	
NEW ORLEANS AUDUBON	6	1012.1		75	58	66.7		86	17	44	7+	0	0			1.03		0.97	3	1	0.0	0	5.7	S*	20	NW	5	10	9	12	5.9	59
SHREVEPORT	252	1008.4	1018.0	75	51	62.2	5.6	87	30+	30	6	0	1	46	62	0.91	-3.24	0.34	10	6	0.0	0	11.6	S				9	12	10	5.8	69
MAINE																																
CARIBOU	624	990.2	1013.8	31	9	19.9	- 2.9	49	25	-14	1	0	29	13	73	2.22	-0.16	0.69	11	0	23.0	45	11.9	NW	40*	NW	15	10	7	14	6.0	
PORTLAND	61	1010.8	1015.1	42	22	31.9	0.5	57	30	1	1	0	29	23	71	3.38	-0.96	1.28	13	0	19.1	20	9.6	NW	41	E	6	9	9	13	6.0	60
MARYLAND																																
BALTIMORE	146	1012.1	1017.1	57	35	45.9	2.8	85	30	25	15+	0	14	30	60	4.65	0.86	1.41	14	1	1.8	2	10.1	WNW	45	NW	6	10	9	12	5.8	61
BALTIMORE U	14			57	39	48.1	3.4	81	25	30	23+	0	5			4.50	0.56	1.15	13													
FREDERICK	294			54	34	43.9	2.8	80	25	24	15	0	16			4.61	1.08	1.12	13	0	2.7	2										
MASSACHUSETTS																																
BLUE HILL OBS R	629	990.2		44	28	36.0	1.2	72	25	16	1	0	26			4.43	-0.11	1.13	13		17.5	10	15.4	NW	49	NW	10					54
BOSTON	15	1010.2	1015.1	46	32	39.1	1.4	78	25	21	1	0	19	27	66	4.39	0.17	1.29	13	1	13.6	9	15.2	W	40	W	7	9	8	14	6.1	61
NANTUCKET	43	1014.9	1015.7	44	32	37.8	1.7	55	28	24	1	0	21	31	77	5.45	0.91	1.25	12	3	4.5	1	14.4	WSW	45	SW	6	11	5	15	6.1	59
PITTSFIELD	1170			42	23	32.9	2.2	66	26	10	1	0	29			2.58	-0.64	0.87	15		14.8	25										
WORCESTER	986	997.2	1014.9	42	26	34.0	1.2	67	25	13	1	0	26	23	67	4.63	0.52	1.48	11	1	15.3	23	10.4	W	31*	NW	7	10	5	16	6.0	
MICHIGAN																																
ALPENA	689	988.5		39	13	25.6	- 1.6	68	29	-16	9	0	30			3.35	1.33	0.91	15	1	18.1	19	7.6	SE	30	SE	19	7	9	15	6.4	65
DETROIT	619	987.8	1015.3	46	30	37.6	2.8	77	29	10	2	0	18	28	72	2.47	0.05	0.63	17	3	3.2	3	11.3	SSW	42	W	17	3	10	18	7.3	42
DETROIT M WAYNE CO	633	990.6	1015.3	45	28	36.8	2.4	77	29	1	2	0	19	29	76	2.77	0.36	0.71	19	3	2.8	4	9.7	SSW				5	6	20	7.6	
DETROIT WILLOW RUN	711	986.1	1015.1	45	29	37.0	1.7	78	29	5	1	0	17	30	76	2.28	-0.12	0.45	19	3	4.4	3	12.8	SSW	37*	WSW	17	2	10	19	7.6	
ESCANABA U	594	991.5		36	17	26.3	0.1	62	30	- 7	9	0	30			1.21	-0.45	0.57	9	0	9.8	9	10.6		49	NW	20+	7	9	15	6.6	62

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No of days: Max. 90 F. or above	Temperature: No of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No of days: 01 inch or more	Precipitation: No of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
MICHIGAN	Ft.	Mb.	Mb.	F.	F.	F.	F	F		F.				F.	%	In	In.	In.			In.	In.	M p.h.		M p.h.							%
FLINT	766	986.8	1015.6	44	25	34.4	2.3	77	29	- 8	2	0	23	27	75	1.83	-0.31	0.68	13	2	5.6	3	11.3	SW	35*	SSW	29	5	7	19	7.4	
GRAND RAPIDS	689	989.2	1015.1	45	26	35.4	3.0	80	29	1	1	0	24	28	76	3.45	1.17	0.99	15	3	5.0	7	11.9	E	42	SSW	29	4	8	19	7.5	52
LANSING	852	981.7	1014.7	45	25	34.9	2.5	78	29	- 1	1	0	25	26	71	2.72	-0.28	0.51	16	1	6.0	4	15.0	WNW	47	S	29	4	9	18	7.3	54
MARQUETTE U	677	986.8		37	18	27.7	1.0	66	31	3	9	0	29			1.49	-0.42	1.10	12	0	15.0	26	9.2	S#	35	NW	20	4	9	18	7.3	63
MUSKEGON	627	991.5	1014.8	43	26	34.4	2.5	72	29	- 4	1	0	24	26	73	2.53	0.48	0.52	13	1	7.9	22	11.9	ESE	35*	S	29	4	9	18	7.4	
SAULT STE MARIE	721	991.5	1015.0	33	13	23.0	- 0.3	51	24	-10	9	0	30	17	77	2.05	0.24	0.75	10	2	12.9	23	9.8	ESE	28*	N	20	7	6	18	6.8	60
MINNESOTA																																
DULUTH	1426	971.9	1014.5	38	17	27.5	5.7	63	29	- 5	10+	0	29	18	66	1.50	-0.12	0.36	15	1	19.1	18	12.0	NW	42	NE	16	5	8	18	7.1	56
INTERNATIONAL FALLS	1179	971.9	1014.4	39	13	26.0	6.6	73	31	-14	10	0	29	17	68	0.59	-0.44	0.24	9	1	5.7	18	9.3	NW	35*	W	29	8	8	15	6.3	
MINNEAPOLIS	822	980.0	1014.6	44	24	34.2	6.6	77	30	- 9	10	0	26	26	72	1.18	-0.35	0.72	10	0	9.8	7	11.2	SSE	34	SSE	15	8	6	17	6.8	50
ROCHESTER	1297	965.8	1014.8	42	23	32.4	4.0	72	30	- 3	9	0	24	27	78	1.76	0.12	0.52	12	0	12.6	8	14.5	NW				5	8	18	7.0	
ST CLOUD	1034	975.6		44	23	33.3	7.7	73	31+	- 8	10	0	24			1.39	0.11	0.46	11	0	15.1	6						8	6	17	6.4	
MISSISSIPPI																																
JACKSON	305	1006.0	1018.4	75	49	61.5	5.1	86	31+	33	6+	0	0	48	64	1.93	-3.64	0.63	12	7	0.0	0	9.1	S	34	SW	11	15	6	10	4.6	68
MERIDIAN	292	1005.1	1019.3	75	45	59.9	3.4	88	31	30	23+	0	4	46	65	3.69	-2.63	0.86	8	5	0.0	0	7.9	S	23*	NW	5	14	6	11	4.9	
VICKSBURG U	234	1008.4		74	52	63.0	5.4	86	13	35	6	0	0			1.91	-3.82	0.61	9	6	0.0	0	9.9		31	S	11	12	7	12	5.3	70
MISSOURI																																
COLUMBIA	778	985.8	1014.5	60	37	48.2	6.3	80	29+	18	1	0	13	34	64	3.43	0.78	1.54	10	3	T	T	13.2	WNW	34	NW	20	8	10	13	5.9	55
KANSAS CITY	742	979.2	1014.7	61	38	49.2	6.4	83	28	20	9	0	11	33	59	1.94	-0.55	1.74	8	3	0.3	T	8.7	WNW	55	SW	16	8	11	12	6.1	68
ST JOSEPH	809	980.0		57	35	45.8	5.6	81	28	17	1	0	14			3.52	1.19	1.68	7	3	0.8	T	14.6	WNW	46*	WSW	16+	8	10	13	6.2	
ST LOUIS	535	994.6	1015.8	61	36	48.8	5.7	88	29	25	1	0	11	33	61	5.54	2.46	1.44	15	7	0.9	1	13.9	WNW	40	NW	20	8	10	13	6.0	61
ST LOUIS RFC	465			61	40	50.4	6.1	86	29	27	1	0	6			6.24	3.05	1.74	12	0	T	T										
SPRINGFIELD	1265	967.7	1015.7	65	39	52.0	8.0	86	28	15	1	0	8	37	61	2.02	-0.82	0.98	11	7	T	3	12.7	SSE	42	S	12	6	18	7	5.5	67
MONTANA																																
BILLINGS	3567	887.4	1013.0	52	29	40.8	7.6	72	22	15	17+	0	20	18	44	0.39	-0.66	0.21	7	1	2.7	1	12.9	WSW	34	NW	19	5	10	16	6.5	79
GLASGOW	2277	936.9		49	27	37.9	11.2	73	22	11	16	0	23			0.27	-0.29	0.13	5	0	1.4	1						4	10	17	7.2	
GREAT FALLS	3662	884.3	1014.1	50	29	39.4	8.2	71	22	16	12+	0	22	18	47	0.35	-0.57	0.13	5	0	3.9	2	14.6	SW	35	SW	29	6	5	20	7.6	64
HAVRE	2582	922.2		51	26	38.3	11.4	74	22	12	13	0	26			0.10	-0.50	0.05	2	0	T	T	9.9	SW#	47	W	28	5	6	20	7.4	66
HELENA	3893	869.7	1014.5	49	26	37.6	6.2	68	22	15	13	0	25	19	50	0.44	-0.26	0.24	9	0	5.9	3	9.5	WNW	32	SW	23	5	8	18	7.2	61
KALISPELL	2965	908.7		47	27	37.2	7.4	66	22	17	4	0	26			1.25	0.29	0.60	9	1	2.3	1	6.3					2	5	24	8.1	
MILES CITY				53	28	40.3	9.4	75	22	14	13	0	21	24	59	0.28	-0.37	0.22	4	1	0.4	T	10.3	W	29	NW	28	6	11	14	6.5	
MISSOULA	3190	899.4	1015.6	49	28	38.7	5.0	67	22+	19	4	0	26	24	60	1.26	0.53	0.37	12	0	6.7	2	6.8	NNW	32	SW	30	2	9	20	7.9	57
NEBRASKA																																
GRAND ISLAND	1841	947.2	1014.7	53	27	40.1	2.9	85	28	17	21+	0	24	28	69	1.17	-0.10	0.32	9	3	4.0	2	12.9	SSE	38*	WNW	16	7	9	15	6.3	
LINCOLN U	1150			57	34	44.1	6.0	81	28	22	6+	0	18			2.56	0.83	0.75	10	4	11.0	7	12.7	NW#	56	W	16	5	12	14	6.6	62
NORFOLK	1544	957.3		53	29	41.1	7.8	83	24	19	21	0	21			0.88	-0.71	0.44	8	0	3.4	2						5	15	11	6.2	
NORTH PLATTE	2779	913.4	1013.4	54	27	40.8	5.8	82	28	14	5	0	26	26	65	0.71	-0.27	0.31	7	1	9.5	7	13.8	NW	47	NW	16	13	4	14	5.4	70
OMAHA	978	973.6	1014.5	53	33	42.7	5.8	79	28	18	6	0	16	31	67	3.05	1.60	1.15	10	3	13.0	11	12.6	SSE	44	S	16	5	10	16	6.9	60
OMAHA N OMAHA AP	1323	965.3		51	32	41.3	6.6	78	28+	17	6	0	19			3.77	2.31	1.10	11	2	14.6	12						5	8	18	6.9	
SCOTTSBLUFF	3950	876.0	1014.4	51	24	37.9	3.1	79	28	3	5	0	27	23	60	0.66	-0.20	0.34	5	0	7.2	3	13.0	WNW	62*	WNW	16	12	7	12	5.3	
VALENTINE	2587	921.1		54	26	39.8	8.5	80	31+	5	5	0	25			1.36	0.35	0.74	4	0	10.0	8	12.5	N#	43	N	16	10	9	12	5.7	67
NEVADA																																
ELKO	5075	842.5	1015.6	50	21	35.2	- 0.2	65	21	10	13	0	29	17	51	0.65	-0.18	0.42	9	0	5.6	2	8.1	SW	31*	WNW	23	9	3	19	6.5	
ELY	6257	805.6		47	17	32.3	- 1.2	63	26	2	16	0	31			0.84	-0.01	0.29	9	0	7.7	4	11.4	S	57	SW	28+	9	5	17	6.4	80
LAS VEGAS	2162	947.9	1014.3	68	40	54.0	- 1.3	82	27	28	5	0	3	19	29	0.23	-0.12	0.23	2	1	T	T	10.6	SW	35*	N	15	16	8	7	4.3	86
RENO	4404	860.8	1016.1	56	25	40.5	- 0.5	68	22	17	24+	0	26	24	55	0.41	-0.27	0.19	7	0	3.4	1	7.7	S	49	S	29	8	13	10	5.8	78
WINNEMUCCA	4299	866.1		52	22	37.3	- 0.7	67	21	9	13	0	28			0.34	-0.47	0.10	8	0	2.7	1	8.8	S	66	W	14	6	9	16	6.5	68
NEW HAMPSHIRE																																
CONCORD	339	1004.1	1015.2	44	23	33.5	1.8	70	26+	- 2	1	0	29	23	69	2.12	-1.14	0.70	12	0	13.9	23	8.5	NW	29	NW	31	7	9	15	6.2	52
MT WASHINGTON OBS	6262	796.8		21	6	13.1	1.4	38	26	-12	11	0	31			7.66	1.92	2.53	15	0	39.7	19	40.6	NW#	124Y	W	7	7	6	18	7.1	37
NEW JERSEY																																
ATLANTIC CITY	58	1015.0	1017.1	56	35	45.5	4.4	81	30	24	3	0	13	32	65	5.21	1.30	1.20	12	0	T	T	11.0	WNW	41*	W	6	7	10	14	6.1	55

See footnotes at end of table

CLIMATOLOGICAL DATA MARCH 1963

CLIMATOLOGICAL DATA

ENGLISH UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																																
ATLANTIC CITY U	10			52	37	44.7	3.6	74	28	28	3	0	9			5.30	1.29	1.38	12				11.6		41*	NW	6					
NEWARK	11	1015.2	1016.7	50	35	42.5	2.0	79	25	25	1	0	12	29	64	3.92	-0.17	1.12	14	0	2.5	2	11.2	NW	32*	NNW	18+	9	7	15	6.3	
TRENTON U	56	1008.8	1015.9	52	35	43.3	2.6	78	25	26	1	0	11			4.02	0.18	1.17	15	0	1.3	1	9.7	NW#	35	SE	26	9	10	12	6.0	56
NEW MEXICO																																
ALBUQUERQUE	5310	846.3	1013.8	59	31	45.2	- 1.1	80	28	20	19+	0	22	19	40	0.55	0.07	0.30	2	1	2.5	2	10.7	N	47	NW	1	13	11	7	4.8	77
CLAYTON	4969	842.5		60	28	44.3	3.4	85	28	13	5	0	24			0.09	-0.54	0.05	4	1	0.6	1						13	7	11	4.8	
RATON	6379	802.2		57	22	39.4	1.3	76	28	5	5	0	27			0.04	-0.48	0.03	2	0	0.4	T						11	9	11	5.2	
ROSWELL	3619	891.3		70	31	50.3	2.3	90	28	14	5	1	19			0.00	-0.50	0.00	0	0	0.0	0	10.1	SE	34	S	3	14	10	7	4.5	82
SILVER CITY	5373	834.2		64	31	47.5		78	28+	20	5	0	21			0.04		0.02	2		0.2	T						18	11	2	3.4	
NEW YORK																																
ALBANY	277	1012.5	1016.2	42	25	33.6	0.6	70	26	6	1	0	27	25	71	3.45	0.73	0.75	16	1	18.4	16	8.4	WNW	36	W	18	3	8	20	7.5	51
BINGHAMTON	1590	954.4	1014.7	43	28	35.5	4.7	68	26	9	1	0	23	26	71	2.86	-0.03	0.60	18	2	20.1	14	11.5	WNW	36	SW	6	2	8	21	8.3	49
BUFFALO	705	986.5	1015.6	44	27	35.4	4.9	73	29	4	1	0	24	28	75	2.19	-1.05	0.44	15	2	7.7	17	12.9	SW	56	SW	6	4	6	21	7.8	43
NEW YORK U	132	1004.6		51	37	43.7	3.2	79	25	26	1	0	8			3.61	-0.40	1.00	16	0	2.8	2	9.8	W#	34	W	6	10	9	12	6.0	52
NEW YORK LA GUARDIA	19	1014.6	1016.4	48	35	41.5	0.7	77	25	26	1	0	9	28	61	3.25	-0.98	1.15	16	0	2.4	2	12.3	NE	42	W	6	8	11	12	6.3	
ROCHESTER	543	995.9	1015.9	44	27	35.7	3.4	75	26	4	1	0	23	27	74	2.53	-0.48	0.59	10	0	6.7	7	12.3	WSW	45	NW	10	4	7	20	7.7	54
SCHENECTADY	217			43	26	34.5	1.8	68	26	12	1	0	28			3.41	0.54	0.75	15	1	18.5	21						14	9	8	4.7	
SYRACUSE	417	992.9	1015.4	43	26	34.2	1.6	71	26	3	1	0	26	26	72	2.79	-0.81	1.08	18	2	15.8	14	13.7	E	37	W	7	3	8	20	7.8	49
NORTH CAROLINA																																
ASHEVILLE U	2203	938.4		62	40	51.0	4.8	81	31	26	3	0	6			7.66	3.92	3.28	10	4	T	T	10.2	NW#	34	NW	21	11	11	9	5.0	69
CAPE HATTERAS R	7	1017.6	1018.5	64	46	54.7	3.7	75	30	34	24+	0	0	46	73	1.93	-2.23	0.61	12	0	0.0	0	11.3	WSW				8	9	14	6.1	65
CHARLOTTE	735	989.8	1018.5	67	42	54.1	3.6	84	18	24	23	0	4	39	60	5.28	0.89	2.42	12	0	0.0	0	8.2	SW	33	SW	6	11	9	11	5.1	68
GREENSBORO	891	986.4	1018.3	63	39	51.3	3.9	80	30+	23	23	0	6	36	61	6.46	2.77	2.60	11	2	T	T	9.6	SSW	38	NW	19	12	6	13	5.5	67
RALEIGH	433	1003.9	1017.9	66	41	53.4	3.9	81	30	26	23	0	4	38	60	3.80	0.45	1.04	11	1	0.0	0	10.9	SSW	29*	SSW	26	11	8	12	5.2	74
WILMINGTON	30	1016.1	1019.1	70	46	57.7	3.5	84	18	31	23	0	1	46	69	0.94	-3.09	0.23	10	1	0.0	0	8.1	SW	43	SW	6	7	13	11	6.0	64
WINSTON SALEM	967	982.4	1018.1	64	42	52.6	4.3	81	30	29	23+	0	3	33	51	5.90	1.89	1.97	11	2	T	T	10.7	SW	35*	WNW	6	12	7	12	5.3	
NORTH DAKOTA																																
BISMARCK	1647	952.7	1013.5	49	23	36.1	10.9	80	23	7	17	0	27	22	63	0.29	-0.49	0.13	7	0	2.6	T	8.0	S	42	NW	28	6	9	16	6.8	70
DEVILS LAKE U	1471	958.7		42	17	29.3	7.7	72	23	- 7	8	0	28			0.47	-0.30	0.17	7	0	5.7	4	9.4	N#	35	NW	29	8	7	16	6.7	69
FARGO	900	978.7	1014.2	42	16	29.0	4.7	77	31	- 6	13	0	28	21	74	0.51	-0.24	0.16	8	0	5.3	2	13.4	SSE	40	NW	29+	6	9	16	6.5	80
WILLISTON U	1899	943.1		48	23	35.6	10.3	74	23	4	13	0	26			0.70	-0.01	0.25	7	0	3.6	1	10.2	SW#	47	NW	28	7	7	17	6.8	60
OHIO																																
AKRON	1209	977.0	1015.9	49	30	39.4	4.0	77	29	15	2	0	20	31	74	4.72	1.40	1.22	20	4	15.5	7	10.7	SW	35*	WSW	17	3	7	21	7.8	
CINCINNATI ORS	761			57	38	47.2	4.5	80	29	23	22+	0	10			9.83	5.94	3.47	14	3	0.3	T	7.8	S#	30	SW	6					44
CINCINNATI U	553	992.7		58	39	48.5	4.0	81	29	26	2	0	8			9.59	5.52	3.14	13	3	T											
CLEVELAND	777	987.1	1015.6	48	30	39.1	3.7	80	29	5	2	0	20	31	76	2.83	-0.30	0.56	19	3	10.4	10	12.2	S	42	SW	17	3	7	21	8.0	49
COLUMBUS	812	985.8	1016.4	52	33	42.8	2.9	78	29	14	2	0	15	33	71	7.14	3.98	2.68	14	4	2.4	3	11.0	SSW	44	W	20	4	9	18	7.7	48
COLUMBUS U	724			53	36	44.7	3.7	77	29	15	2	0	14			7.35	4.47	2.89	13	4	3.5	3										
DAYTON	997	982.7	1016.0	52	34	42.6	3.7	78	29	6	2	0	15	33	74	6.80	3.68	2.62	15	6	9.9	11	12.6	SSW	35	SW	19+	4	5	22	7.8	39
MANSFIELD	1296			48	30	39.0	3.8	75	29	5	2	0	21			4.78	1.00	1.45	18	5	14.8	11						2	9	20	7.8	
SANDUSKY U	606	993.6		47	31	39.2	2.2	79	29	7	2	0	19			3.09	0.25	0.45	18	3	7.5	12	10.8	SW#	55	W	6	8	8	15	6.5	52
TOLEDO	676	989.2	1015.4	46	28	37.0	1.8	80	29	2	2	0	21	28	73	3.14	0.88	0.82	21	4	5.6	4	11.4	WSW	38	W	17	2	9	20	7.9	39
YOUNGSTOWN	1178	972.2	1015.8	47	30	38.4	2.1	76	29	11	1	0	20	31	76	3.68	0.33	0.76	19	2	16.1	8	11.5	SW	35*	SW	17	3	4	24	8.1	
OKLAHOMA																																
OKLAHOMA CITY	1280	972.1	1015.9	67	41	53.8	5.8	86	29+	22	1	0	6	37	59	3.21	1.24	1.82	6	6	0.0	0	15.8	SSE	45	SW	12	11	10	10	5.2	61
TULSA	676	990.9	1015.8	69	41	54.8	6.2	90	29+	22	1	2	8	37	58	2.84	0.41	1.37	8	4	0.0	T	13.2	SSE	34	SE	30	11	10	10	5.3	64
OREGON																																
ASTORIA	8	1014.8	1015.5	53	38	45.0	0.5	64	7	28	3	0	8	39	82	6.13	-2.79	1.43	19	3	0.0	0	8.5	SE	33*	NW	11	5	3	23	7.7	
BURNS U	4151	870.6		49	26	37.2	- 0.2	61	20	16	13	0	26			1.15	0.18	0.28	11	0	4.5	2						8	4	19	6.7	
EUGENE	361	1003.4		55	37	45.7	- 0.3	70	20	28	13+	0	6			7.17	2.85	2.44	15	1	T	T	8.1		48*	S	27	5	2	24	7.8	
MEACHAM	4050			42	27	34.4	1.1	55	25+	18	6+	0	23			2.20	-1.76	0.73	14	0	19.4	13						7	4	20	7.1	
MEDFORD	1298	969.2	1017.4	56	32	43.9	- 1.9	69	21	22	4	0	18	34	72	0.88	-0.90	0.19	10	0	T	T	6.3	Nw	29*	SE	27	3	4	24	7.7	
PENDLETON	1482	961.1	1015.2	55	36	45.4	1.3	69	20	29	4	0	7	32	62	0.37	-0.83	0.13	5	1	T	T	10.6	w	38*	W	30	8	5	18	6.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND	21	1010.5	1016.2	54	37	45.2	- 0.9	67	20	28	13+	0	7	39	81	4.69	0.86	1.38	19	2	0.0	0	8.5	ESE	57	S	27	6	1	24	7.8	30
PORTLAND U	30			56	40	48.0	0.3	70	20	33	4+	0	0			6.66	1.88	2.20	16		0.1	T										
ROSEBURG	505	998.3		57	35	46.4	- 0.2	70	21	27	13+	0	9			3.55	0.13	0.93	15	0	0.0	0	5.0	N#	40	S	27	3	5	23	8.0	50
SALEM	195	1009.5	1016.6	54	35	44.4	- 1.4	68	20	24	4	0	11	38	79	6.51	1.83	2.07	18	0	0.0	0	8.5	S	39*	S	27	6	3	22	7.5	
SEXTON SUMMIT R	3836	881.8		43	30	36.6	- 1.5	57	20	23	15	0	22			5.17	1.70	1.25	16		14.3	5	12.5	S				3	5	23	8.2	
PACIFIC AREA																																
CANTON ISLAND	11	1008.5	1008.8	89	78	83.7	0.6	91	21	75	29+	18	0	73	75	0.88	-1.61	0.46	7	0	0.0	0	14.9	NE	26*	ESE	6	15	10	6	4.5	
TAGUAC GUAM R	361			85	72	78.1	- 0.7	87	29+	62	14	0	0			2.46	-0.18	0.48	15		0.0	0	8.8	E#	24	E	31					82
JOHNSTON	7	1012.5	1013.1	81	74	77.1	- 0.1	84	29+	67	29+	0	0	69	76	2.32	-0.02	1.74	12	0	0.0	0	15.2	ENE	47	E	21	11	15	5	4.6	72
KOROR R	94	1006.4	1009.2	87	75	81.1	0.4	90	28	72	4	1	0	75	86	8.41	0.78	1.86	19	1	0.0	0	8.1	ENE	26	NE	27	0	0	31	10.0	59
PONAPE R	123	1004.4	1008.7	86	75	80.6	0.0	89	31	71	31	0	0	74	83	17.06	2.51	4.39	25	2	0.0	0	7.0	NE	22	NE	19+	0	1	30	9.6	48
TRUK MOEN ISLAND	5	1009.1	1009.4	86	76	80.8	0.0	88	28+	72	29	0	0	73	76	5.44	-2.31	1.57	13	0	0.0	0	8.9	NNE	24	S	31+	0	2	29	9.3	54
WAKE	11	1014.0	1014.4	85	74	79.4	1.6	87	18+	71	17+	0	0	68	70	1.09	-0.38	0.47	7	0	0.0	0	11.9	ENE	25*	E	14	10	16	5	4.7	
YAP R	53	1007.8	1008.9	86	76	80.9	- 0.1	90	29	74	31+	1	0	75	83	11.13	5.75	5.09	21	1	0.0	0	11.7	NE	29	NE	16	0	0	31	10.0	34
PENNSYLVANIA																																
ALLENTOWN	376	1002.4	1016.9	49	31	39.5	1.9	77	25	13	1	0	20	29	70	3.97	0.18	0.79	14	0	4.5	7	11.0	WNW	48*	W	6	4	13	14	6.8	
ERIE	732	988.5	1015.4	46	29	37.7	4.1	78	29	9	1	0	23	29	74	2.84	-0.04	0.64	16	3	10.9	8	14.2	WSW	40*	SE	6	4	6	21	7.9	
HARRISBURG	335	1002.7	1017.0	52	35	43.2	2.9	80	25	24	3	0	14	30	64	3.86	0.43	0.92	13	1	6.1	3	9.4	NW	33	W	6	4	12	15	7.1	45
PHILADELPHIA	5	1012.2	1016.9	52	33	42.9	1.9	78	25	23	8	0	15	32	68	3.94	0.14	1.07	12	1	0.2	T	10.1	WSW	42	NW	6	7	9	15	6.8	49
PHILADELPHIA U	35			55	38	46.5	3.0	79	25	28	11	0	5																			
PITTSBURGH	1137	985.1	1016.3	50	31	40.7	3.9	77	29	17	3	0	19	32	74	5.28	1.87	1.91	16	3	4.5	6	9.9	WSW	35*	WSW	6	3	7	21	8.0	38
PITTSBURGH U	749			54	36	45.1	4.7	78	29	27	23+	0	13			5.63	2.11	2.10	15		2.5											40
READING U	266	1004.4		52	36	43.8	2.5	78	25	25	1	0	12			3.56	-0.22	0.66	15	0	1.2	4	11.7	NW#	57	E	6	7	10	14	6.6	42
SCRANTON	940	981.4	1016.2	47	30	38.2	3.0	72	25	14	1	0	19	27	68	2.19	-0.63	0.59	17	1	8.3	12	8.7	WSW	32	SW	6	3	9	19	7.8	38
WILLIAMSPORT	527	997.3	1016.6	48	30	38.8	1.4	75	25	10	1	0	22	28	68	3.14	-0.59	0.65	18	2	9.2	10	9.4	W	38*	WSW	6	4	8	19	7.5	
RHODE ISLAND																																
BLOCK ISLAND	110	1010.7		43	32	37.0	- 0.2	59	28	22	1	0	20			3.45	-0.62	1.20	13	1	3.0	2						9	8	14	6.1	
PROVIDENCE	55	1009.5	1015.8	47	31	38.9	1.9	66	25	19	1	0	21	27	67	3.78	-0.36	1.51	11	1	9.4	4	11.5	WNW	39*	SW	6	11	6	14	5.9	57
SOUTH CAROLINA																																
CHARLESTON	41	1017.3	1019.5	74	48	60.9	4.2	90	18	34	24+	1	0	46	64	0.99	-2.94	0.24	9	0	0.0	0	10.2	SSW	45Y	SW	6	9	8	14	6.0	70
CHARLESTON U	9			69	52	60.7	3.2	86	18	39	22	0	0			2.03	-1.59	1.01	8		0.0	0	10.6		37	W	6					
COLUMBIA	217	1005.6	1018.8	73	45	59.0	4.6	88	19+	28	23	0	1	41	59	3.28	-0.98	1.65	10	2	0.0	0	8.5	SW	35*	SW	6	12	8	11	5.3	67
FLORENCE	146	1012.6	1018.7	72	46	59.0	4.3	88	18	31	23	0	1	42	59	1.77	-1.87	1.09	11	3	0.0	0	9.2	SW	29*	SSW	6	11	9	11	5.5	
GNVLE SPARTANBURG	957	981.0	1018.5	68	43	55.4	4.0	86	18	29	23	0	2	38	58	9.66	4.91	4.45	12	4	0.0	0	8.7	SW	38	W	20	13	7	11	5.0	66
SOUTH DAKOTA																																
HURON	1282	965.5	1013.6	53	26	39.7	10.0	86	31	11	17+	0	23	29	71	1.19	0.08	0.75	7	0	6.4	6	13.5	SE	40	S	15	8	9	14	6.4	62
RAPID CITY	3165	897.7	1013.7	52	27	39.7	8.6	80	28	9	17	0	23	22	55	1.60	0.59	1.39	7	0	17.3	15	12.1	NNW	50	NW	16	9	10	12	6.1	65
SIOUX FALLS	1420	960.0	1013.9	50	28	38.9	8.8	80	24	16	10	0	22	28	70	1.16	-0.38	0.68	7	1	2.8	3	11.1	S	29*	NW	7	8	11	12	6.3	
TENNESSEE																																
BRISTOL	1507	962.7	1017.9	63	38	50.2	4.7	81	31	24	23	0	10	35	61	7.52	3.54	3.10	11	4	0.3	T	7.1	SW	32*	W	20	4	14	13	6.4	
CHATTANOOGA	670	991.0	1018.9	68	42	55.0	4.8	87	31	29	23+	0	5	39	61	12.83	7.19	5.40	11	6	0.0	0	8.9	S	34	W	19	13	5	13	5.3	64
KNOXVILLE	950	982.7	1018.6	67	43	55.1	6.0	86	31	28	3	0	3	38	59	9.92	5.19	4.82	10	4	T	T	10.2	SW	56	W	11	7	11	13	6.2	61
MEMPHIS	263	1002.6	1017.6	69	45	56.7	5.1	85	31	30	22	0	4	43	63	6.17	1.10	2.45	9	7	0.0	0	10.8	S	32	SW	4	11	10	10	5.1	77
MEMPHIS U	271			67	48	57.6	5.8	84	30+	33	6	0	0			6.18	1.28	1.80	10	0	0.0	0										
NASHVILLE	577	997.3	1017.5	66	41	53.8	4.7	86	31	28	23+	0	5	40	63	10.03	4.84	3.21	9	7	0.0	0	10.7	S	38	SW	11	12	8	11	5.5	61
OAK RIDGE	905	983.8		65	40	52.3	4.3	85	31	20	3	0	7			9.05	3.46	3.89	10	4	T	T	5.6		34Y		20	10	7	14	5.9	
TEXAS																																
ABILENE	1759	953.1	1014.7	75	46	60.7	5.7	93	29	28	7	3	5	34	44	0.03	-1.01	0.03	1	0	T	T	12.9	SSE	37	SE	10+	12	10	9	5.1	78
AMARILLO	3607	886.9	1013.4	66	35	50.4	4.3	90	28	15	5	1	12	23	41	0.28	-0.54	0.24	2	2	T	T	17.0	SSW	63	W	18	14	8	9	4.4	77
AUSTIN	597	994.4	1016.6	76	53	64.5	4.8	88	30	34	6	0	0	45	55	0.22	-1.91	0.15	4	1	0.0	0	10.7	SSE	31	N	5	8	10	13	6.0	52
BROWNSVILLE	16	1013.9	1015.6	79	62	70.8	2.9	89	11	42	6	0	0	61	75	0.08	-0.96	0.04	4	0	0.0	0	14.7	SE	33	S	16+	1	13	17	7.2	42
CORPUS CHRISTI	43	1014.9	1016.3	78	59	68.7	3.5	90	16	38	6	1	0	57	71	0.09	-1.35	0.06	3	1	0.0	0	15.0	SSE	36	NE	5	4	10	17	7.2	63
DALLAS	481	998.1	1016.8	74	49	61.8	5.7	87	30	30	6	0	1	41	51	0.66	-2.19	0.45	4	1	T	T	14.1	S	35	NW	8	9	8	14	5.8	74

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	F.	F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TEXAS																																
DEL RIO U	957			80	54	66.9		93	18	36	6	4	0			T		T	0		0.0	0									
EL PASO	3918	884.5	1012.5	71	41	56.4	1.5	86	28	27	7	0	5	18	24	T	-0.35	T	0	0	0.0	0	10.5	WSW	57	NW	18	18	7	6	3.7	92
FORT WORTH	544	995.6	1016.7	74	48	61.2	5.3	87	30	26	6	0	3	41	51	0.48	-2.03	0.22	6	2	0.1	T	15.6	S	38*	S	18	7	10	14	6.1	
GALVESTON U	7			69	59	64.0	2.6	78	19	45	1	0	0			0.07	-2.79	0.03	3	0	0.0	0	12.6		34	N	5					67
GALVESTON	5	1015.4	1018.0	69	59	63.7	2.3	76	19	43	6	0	0	56	78	0.16	-2.87	0.07	6	0	0.0	0	11.0	SE				10	7	14	6.1	
HOUSTON U	41			76	59	67.4	5.0	88	12	46	6+	0	0			0.84	-1.56	0.75	7		0.0	0										
HOUSTON	50	1014.4	1017.3	76	54	64.9	2.1	85	12	34	6	0	0	53	74	0.55	-2.12	0.35	6	0	0.0	0	11.8	SSE	29*	NNW	5	7	8	16	6.7	60
LAREDO	500	995.9	1014.7	84	60	71.7	3.6	96	18	41	6	13	0	49	52	0.03	-0.59	0.02	2	2	0.0	0	12.6	ESE	31*	N	5	11	7	13	5.7	
LUBBOCK	3242	902.1	1014.2	69	37	53.0	3.4	90	28	20	7+	1	9	28	44	0.73	0.00	0.43	2	2	T	T	16.3	SSE	44*	SW	10	12	10	9	4.5	
MIDLAND	2854	914.0	1013.0	73	44	58.7	3.5	95	29	27	5	2	5	29	39	T	-0.36	T	0	0	0.0	0	13.4	S	40*	WNW	10	15	9	7	4.2	
PORT ARTHUR	16	1015.9	1017.6	76	53	64.4	3.8	84	12	31	6	0	1	54	75	0.21	-3.23	0.12	4	0	0.0	0	11.4	SSE	40	S	4	7	10	14	6.2	48
SAN ANGELO	1903	947.2	1014.3	78	48	62.6	6.1	94	29	30	7+	4	4	35	41	T	-0.93	T	0	0	0.0	0	11.6	SSE	29*	SSE	10	16	4	11	4.6	
SAN ANTONIO	792	990.7	1015.9	78	54	65.6	4.6	89	30	32	6	0	1	47	58	0.21	-1.46	0.10	7	0	0.0	0	10.5	SSE	37	N	5	8	8	15	5.9	61
VICTORIA	104	1012.0		77	56	66.4	3.2	87	12	36	6	0	0			0.25	-2.07	0.12	5	0	0.0	0	12.0		47Y		5	4	10	17	6.8	
WACO	500	995.2	1016.6	76	50	63.1	5.2	87	30	30	6	0	1	44	55	0.76	-1.59	0.73	2	2	T	T	15.4	SSE	35*	NW	5	8	10	13	5.9	
WICHITA FALLS	994	978.0	1015.4	72	43	57.5	4.7	91	29	26	6	2	4	36	50	2.36	0.82	1.94	6	5	T	T	11.2	S	28*	W	12	11	10	10	5.0	
UTAH																																
MILFORD	5028	841.7		53	22	37.5	- 1.0	71	27	9	5	0	29			0.83	-0.20	0.27	7	0	7.2	3						8	10	13	6.0	
SALT LAKE CITY	4220	866.3	1016.0	51	28	39.4	- 1.0	70	27	10	16	0	24	22	54	2.11	0.55	0.92	7	1	16.0	7	10.7	S	43	S	28	10	7	14	5.9	66
WENDOVER	4237	868.6		51	31	41.1	- 0.4	68	31+	21	16+	0	19			0.15	-0.24	0.05	4	0	0.8	T						11	5	15	5.4	
VERMONT																																
BURLINGTON	331	1000.0	1015.1	37	15	26.0	- 3.2	61	26	- 9	16	0	27	18	66	2.35	0.24	0.52	14	0	21.5	21	8.7	S	49	S	6	5	10	16	7.0	53
VIRGINIA																																
LYNCHBURG	947	993.6		61	39	50.0	4.5	82	30	27	23+	0	8			4.56	0.95	1.29	9	0	T	T	8.7		39	W	6	12	6	13	5.5	60
NORFOLK	26	1016.4	1017.9	64	43	53.4	5.4	82	30	30	3	0	1	39	63	2.98	-0.47	1.12	10	0	T	T	13.6	SW	57	W	6	9	9	13	5.7	61
RICHMOND	162	1011.1	1017.5	63	39	50.8	4.1	81	30	25	3	0	5	35	59	5.62	2.20	1.74	9	2	T	T	9.6	SW	37	W	6	8	11	12	5.6	61
ROANOKE	1174	974.8	1017.6	61	39	49.7	4.2	85	30	26	3	0	9	32	55	3.89	0.36	1.13	10	0	0.7	T	11.6	WNW	35*	WSW	6	9	11	11	5.8	
WASHINGTON																																
OLYMPIA	190	1009.1	1016.2	52	32	42.1	- 2.1	65	21	23	3	0	17	36	80	5.10	-0.30	1.76	19	1	T	T	7.3	SSW	29*	W	11	1	7	23	8.3	
SEATTLE TACOMA	400	1001.4	1015.5	51	37	43.8	0.0	64	21	28	6	0	6	36	78	3.43	-0.36	0.95	18	1	T	T	9.3	SSW	35*	SW	28	4	6	21	7.8	
SEATTLE U	14			53	41	46.8	0.4	63	21	35	6+	0	0			2.98	-0.34	1.01	16		T	T										47
SPOKANE	2356	944.8	1014.1	50	32	40.6	2.5	64	21	22	4+	0	18	28	65	1.65	0.15	0.52	8	1	1.2	T	10.2	SW	40	SW	27	3	10	18	7.5	58
STAMPEDE PASS R	3958	875.7		37	27	32.0	2.0	52	8	22	3	0	28			8.03	-2.57	1.31	19		65.2	72						5	3	23	7.8	
TATOOSH ISLAND	101	1011.9	1014.6	48	39	43.9	- 0.3	56	21	33	30	0	0	38	80	6.40	-1.94	1.09	19	0	T	T	16.9	ENE	61	S	21	6	3	22	7.5	55
WALLA WALLA U	949	978.5		57	39	47.8	1.8	73	21	31	4+	0	2			0.78	-0.81	0.40	8	0	0.0	0	6.1	W#	46	W	28	7	7	17	6.7	49
YAKIMA	1061	975.3	1014.8	56	31	43.6	1.6	69	20	20	13	0	17	29	59	0.84	0.22	0.38	5	0	T	T	8.0	WNW	41*	SSW	28	7	7	17	6.5	
WEST INDIES																																
SAN JUAN P.R.	15	1014.9	1017.9	84	69	76.3	1.0	87	29+	64	20	0	0	67	75	4.68	2.48	2.05	17	0	0.0	0	9.9	ENE	29	NE	26	4	20	7	6.1	75
SWAN ISLAND	28	1013.4		84	75	79.8	- 0.2	86	8	69	24	0	0			4.00	3.37	2.00	13		0.0	0						11	13	7	5.1	
WEST VIRGINIA																																
CHARLESTON	939	980.8	1016.9	61	38	49.5	5.1	82	29	21	23	0	6	35	64	6.37	2.03	1.50	14	1	T	T	8.7	WSW	30*	SW	6	6	6	19	7.2	
ELKINS	1970	946.6	1017.0	55	29	42.0		76	30+	14	3	0	23	32	74	8.85		2.94	18	5	5.0	5	9.4	WNW	40*	WNW	20+	3	7	21	7.6	
HUNTINGTON U	827	986.5	1017.0	62	40	50.8		84	29	24	23+	0	7	34	59	7.54	3.38	1.95	15	3	0.4	T	8.8	WSW	30	N	4	6	7	18	7.2	
PARKERSBURG U	615			58	37	47.1	4.4	82	29	24	23	0	11			9.77	6.24	3.46	15	2	0.1	T	8.5		31	W	20					42
WISCONSIN																																
GREEN BAY	682	991.2	1014.6	41	20	30.1	2.4	72	30	- 3	9	0	25	26	84	2.58	1.24	0.63	14	4	13.3	10	8.3	SW	36	NW	20	6	7	18	7.1	52
LA CROSSE	652	989.2	1014.4	45	26	35.6	5.1	76	30	3	9+	0	20	26	71	2.25	0.18	0.71	14	1	14.3	9	10.7	S	28*	NW	20	6	8	17	6.9	
MADISON	858	978.0	1014.4	44	24	34.0	4.4	75	30	- 7	1	0	26	25	70	2.33	0.49	0.70	12	2	12.8	9	9.9	S	31	NW	20	5	8	18	7.3	47
MILWAUKEE	672	989.2	1014.7	43	27	35.2	4.2	74	29	- 1	1	0	24	28	74	2.20	-0.11	0.68	13	1	7.1	5	12.1	NNE	42	S	29	4	7	20	7.5	49
WYOMING																																
CASPER	5319	833.3	1013.9	46	23	34.8	2.7	67	31	3	13	0	26	18	56	0.35	-0.68	0.11	6	0	5.0	2	14.0	SW	45*	SW	28	10	10	11	5.7	
CHEYENNE	6126	809.1	1015.0	44	20	31.8	- 0.1	72	28	- 9	5	0	26	17	58	0.74	-0.47	0.37	10	0	11.8	6	14.5	WNW	62	W	28	14	7	10	4.6	77

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							
LANDER	5563	831.2	1013.9	46	21	33.5	1.3	65	31+	- 2	13	0	27	17	55	1.69	0.54	0.96	8	0	29.8	14	6.5	SW	40	N	1	14	7	10	5.1	86
SHERIDAN	3942	881.1	1014.0	51	25	38.1	7.1	71	28+	5	13	0	27	20	52	0.55	-0.87	0.30	7	0	6.7	3	9.6	WNW	66	SW	28	5	10	16	6.7	62

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Data entered in column "Fastest Mile" is the fastest mile observed. This station is not equipped with automatic wind recording instrument.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	990.3	1019.3	22.2	7.2	14.7	2.7	30.0	31+	0.0	22	0	1	6.1	62	160	9	60	10	5	0	0	4.8	S	17.0	W	19+	14	4	13	5.0	66
HUNTSVILLE	184	995.1	1018.7	20.6	6.1	13.5	2.5	31.1	31	- 1.1	22	0	4	5.0	61	266	124	148	11	7	0	0	5.0	SSE	27.7*	WNW	11	16	4	11	4.8	
MOBILE	64	1016.8	1019.2	23.9	11.7	17.7	2.6	30.6	17	2.8	22	0	0	9.4	65	38	-146	29	7	1	0	0	3.9	SW	14.3*	S	11	9	6	16	6.1	
MONTGOMERY	59	1011.1	1019.5	22.8	8.9	15.8	2.5	30.0	18	0.6	22+	0	0	7.8	62	83	- 73	28	9	6	0	0	4.3	S	16.5	W	5	11	6	14	5.4	64
ALASKA												B																				
ANCHORAGE	27	1007.8	1012.9	0.0	- 8.9	- 4.4	0.4	6.1	8+	-17.2	28	0	26	-10.6	66	38	25	13	15	0	290	152	4.1	N	15.6*	NNW	27	7	7	17	6.8	48
ANNETTE	34	1008.5	1012.6	7.8	1.7	4.9	1.7	11.1	9	- 1.1	31+	0	4	0.0	73	107	-136	25	18	0	188	25	3.4	N	13.0*	SSE	27	3	6	22	7.7	
BARROW	7	1017.3	1018.2	-24.4	-33.3	-28.7	-2.8	-10.0	30	-40.6	11	0	31	-33.9	60	38	35	18	11	0	401	584	5.9	W	24.6*	ESE	25	17	6	8	4.4	
BARTER ISLAND	12	1016.6	1018.6	-22.2	-31.7	-26.8	-0.7	- 8.3	31	-40.0	13	0	31	-30.0	74	9	4	4	10	0	94	635	6.9	W	30.8*	WSW	26	11	9	11	5.1	
BETHEL	38	1013.5	1017.6	- 5.0	-13.9	- 9.4	1.9	3.3	7	-25.6	28	0	31	-24.4	75	40	13	10	20	0	429	178	7.2	NNE	19.7*	S	25+	7	3	21	7.5	
COLD BAY	29	1013.9	1017.3	3.9	- 1.7	1.3	3.1	8.3	25+	- 7.8	29	0	20	- 1.1	85	77	32	14	16	0	71	25	8.7	SSE	21.9*	W	17	1	9	21	8.5	
CORDOVA	12	1009.1	1010.7	2.2	- 5.6	- 1.8	-0.2	5.0	6	-12.8	29	0	24	- 5.0	79	262	165	61	14	0	348	102	2.7	ESE	10.3*	ESE	3	6	7	18	7.0	
FAIRBANKS	133	999.0	1017.1	- 6.1	-20.6	-13.5	-0.7	4.4	8	-35.0	28	0	31	-17.2	69	53	43	49	12	0	752	889	2.5	N	12.1*	WSW	10	8	5	18	6.5	
JUNEAU	5	1011.9	1012.6	3.3	- 3.3	- 0.1	0.8	7.2	25+	-12.8	31	0	21	- 3.9	77	94	11	18	18	0	734	254	4.0	ESE	17.9*	ESE	3	3	4	24	8.3	35
KING SALMON	13	1014.9	1016.7	0.0	- 9.4	- 4.9	2.1	10.0	9	-22.8	19	0	29	- 7.8	78	61	37	14	16	0	404	203	6.0	NNW	19.7*	S	12+	5	5	21	7.7	
KOTZEBUE	3	1017.3	1017.6	-15.6	-26.7	-21.3	-2.3	1.1	25	-35.6	2	0	31	-24.4	75	20	13	9	11	0	356	483	6.0	ESE	19.7*	WNW	26	14	4	13	5.1	
MC GRATH	102	1003.4	1016.9	- 5.6	-20.0	-12.8	0.4	5.0	24+	-34.4	13+	0	31	-17.8	61	27	3	6	14	0	643	610	3.2	N	14.3	SSW	25	7	6	18	6.8	
NOME	4	1015.6	1016.2	- 8.3	-18.9	-13.7	-0.3	0.6	25+	-31.7	10	0	31	-17.8	70	26	4	8	9	0	335	381	6.1	E	15.6*	SE	24+	9	5	17	6.3	41
ST. PAUL ISLAND	7	1011.9	1012.7	1.1	- 3.9	- 1.6	2.8	4.4	30	-15.0	9	0	29	- 2.8	89	60	33	16	18	0	241	102	8.8	S	23.2*	W	16	2	2	27	9.1	
SHEMYA	31	1006.5	1010.1	2.8	- 0.6	1.0	0.5	5.6	22	- 5.0	9+	0	18	- 1.1	85	36	- 29	12	19	0	137	51	10.0	S	20.1	SSE	20	0	5	26	8.8	
YAKUTAT	9	1010.2	1011.2	3.3	- 3.9	- 0.4	-0.1	7.8	1	-11.1	30	0	23	- 3.9	78	302	82	71	22	0	726	330	3.2	E	15.6*	SE	3	4	5	22	7.8	
ARIZONA																																
FLAGSTAFF	2131	786.4	1015.0	10.0	- 7.2	1.4	-0.6	17.8	27	-17.2	19	0	31	- 7.8	54	26	- 11	17	7	1	203	178	3.9	SSW	11.6*	SSE	17	13	7	11	5.2	
PHOENIX	340	974.1	1013.4	24.4	7.8	16.1	0.3	30.6	28	2.2	16+	0	0	- 2.2	31	8	- 9	8	2	0	0	0	3.1	SSE	15.6*	W	17	18	8	5	3.7	90
PRESCOTT	1528	844.9	1014.6	15.6	- 1.7	6.8	-0.7	22.8	27	- 7.8	18	0	23	- 6.1	44	18		15	4	1	102	76	4.7	S	25.0	SE	2	14	12	5	4.1	85
TUCSON	788	924.6	1013.1	22.2	6.1	14.3	0.1	30.0	28	- 1.1	5	0	1	- 4.4	32	9	- 5	6	4	0	0	76	4.7	SSE	15.6	SW	15	15	12	4	3.7	84
WINSLOW	1487	849.6	1015.2	17.2	- 1.7	7.6	-0.2	26.7	27	- 8.3	14	0	20	- 7.2	41	10		6	4	0	107	51	5.1	SW	23.7*	SSW	15	12	11	8	4.5	
YUMA	61	1008.5	1013.9	26.7	9.4	18.0	-0.9	32.8	27	4.4	6	1	0	- 2.8	30	4	- 2	4	1	0	0	0	3.0	WNW	12.1	W	3	19	6	6	3.4	95
ARKANSAS																																
FORT SMITH	137	999.4	1016.7	21.1	5.0	13.0	2.4	31.7	28	- 3.3	6	0	6	5.6	63	41	- 47	13	10	5	0	0	3.9	NE	13.4	SW	12+	8	14	9	5.4	65
LITTLE ROCK	78	1003.8	1017.3	21.7	6.7	14.3	3.3	31.1	31	- 1.1	6	0	2	5.6	60	97	- 25	29	10	5	T	T	4.6	WSW	15.2	SW	12	10	14	7	5.1	74
TEXARKANA	110	1016.7	1017.2	22.2	9.4	15.7	3.0	29.4	31+	0.0	6	0	1	6.7	66	60	- 60	14	10	5	T	T	4.7	S								82
CALIFORNIA																																
BAKERSFIELD	151	1000.2	1018.3	19.4	6.7	13.2	-0.6	26.7	21	3.3	19+	0	0	6.7	61	32	5	21	5	0	0	0	3.6	NW	14.3*	SE	16	12	11	8	5.0	
BISHOP	1252	872.2		16.1	- 2.2	6.9	-1.4	21.7	30+	- 7.2	5	0	23			15	1	10	5	0	41	25						15	9	7	3.9	
BLUE CANYON	1609	837.2		6.1	- 1.1	2.4	-1.4	13.3	1	- 5.6	24+	0	21			275	60	83	13	0	2032	940	4.2	SSW	17.4	S	27	10	5	16	6.5	
BURBANK	213	990.5	1016.7	19.4	7.2	13.3	-1.1	28.9	1	3.9	18	0	0	3.9	59	82	27	46	8	2	3	T	3.2	S	11.6*	NW	3	15	7	9	4.3	
EUREKA U	13	1016.2		12.8	6.7	9.6	0.3	18.3	25	2.2	17+	0	0			160	26	35	16	0	0	0	3.8	N#	17.9	SW	27	5	6	20	7.6	47
FRESNO	99	1005.3	1017.3	18.3	5.0	11.8	-0.6	25.6	21	1.1	18	0	0	4.4	67	53	4	26	7	2	0	0	3.2	NW	15.2	NW	31	15	8	8	4.5	83
LONG BEACH	10	1015.9	1017.4	18.9	7.2	13.2	-0.6	25.6	1	3.3	18	0	0	7.2	70	67	32	30	6	2	0	0	3.0	W	11.2*	W	15+	12	12	7	4.8	
LOS ANGELES	30	1013.8	1017.6	18.3	8.9	13.7	0.3	23.3	20+	5.0	18	0	0	7.2	69	61	16	29	6	1	0	0	3.9	W	13.0*	W	2	12	13	6	4.4	
LOS ANGELES U	95			19.4	10.0	14.6	-0.6	26.1	1	5.6	18	0	0			71	13	35	8	3	0	0	3.2	W#	13.9	E	28	10	16	5	4.5	87
MT SHASTA R	1080	891.3		10.0	- 1.1	4.2	-0.9	16.7	20+	- 7.8	4	0	24			148	35	63	14		894	356						8	7	16	6.5	
OAKLAND	1	1017.9	1018.2	16.1	6.7	11.4	-0.6	20.0	20+	2.8	17	0	0	4.4	66	84	23	39	9	0	0	0	4.5	WNW	15.6*	SSE	22	12	7	12	5.2	
POINT ARGUELLO	112	1004.1		15.0	5.6	10.5	-0.6	21.7	20	1.1	19+	0	0			93	44	39	8	0	0	0	4.0		12.5*	S	16	14	6	11	5.0	
RED BLUFF	104	1004.1	1016.9	16.7	4.4	10.4	-1.8	22.2	1	- 1.1	17	0	3	2.2	61	69	0	34	10	1	T	T	5.1	SSE	18.8	SE	27+	12	4	15	6.0	66
SACRAMENTO	5	1017.0	1018.0	16.7	4.4	10.6	-1.9	22.2	1	- 0.6	15	0	1	5.6	73	108	48	53	11	3	0	0	2.8	SSW	17.0	W	22	10	7	14	5.6	69
SACRAMENTO U	7			17.2	6.1	11.6	-1.3	22.8	1	0.6	15	0	0			90	28	45	11		0	0										
SANDBERG R	1377	861.7		8.9	0.6	4.8	-2.4	16.7	6	- 5.6	17	0	13			40	4	20	5	0	234	203	7.2	N	20.6*	S	16	15	6	10	4.4	
SAN DIEGO	4	1013.8	1017.1	18.9	9.4	14.2	-0.6	23.9	1	6.1	18	0	0	7.2	66	34	- 6	27	5	0	0	0	3.5	WNW	14.3	SE	16	12	10	9	4.9	78
SAN FRANCISCO	2	1018.0	1018.7	15.6	6.7	11.1	-0.8	20.0	20	3.3	17	0	0	5.6	70	100	32	43	10	0	0	0	5.1	W	18.3	WNW	2	13	10	8	4.8	
SAN FRANCISCO U	16			15.6	8.9	12.3	-0.3	20.0	1	5.0	16	0	0			98	24	44	11	0	0	0	3.6	W#	15.2	SE	22					79
SANTA CATALINA	478	960.4		15.0	8.3	11.7		23.3	1	5.6	18+	0	0			47		22	7	0	0	0						12	7	12	5.1	
SANTA MARIA	73	1009.7	1018.6	17.2	4.4	10.6	-1.2	25.0	1	0.6	18+	0	0	6.1	76	91	39	39	8	0	0	0	3.8	WNW	14.3*	WNW	31	17	5	9	4.2	
STOCKTON	9	1016.6	1018.2	17.2	4.4	10.7		21.7	1	- 0.6	18	0	1	5.0	71	72		40	9	0	0	0	3.4	W	12.5*	ESE	16	11	9	11	5.3	
COLORADO																																
ALAMOSA	2297	767.0		8.3	- 8.3	0.2	0.1	19.4	28	-21.7	5	0	29			6		4	6	1	91	25						14	9	8	4.5	
COLORADO SPRINGS	1882	808.0	1015.7	11.1	- 3.9	3.6	1.5	26.7	28	-15.0	5	0	23	-10.0	44	16		9	6	0	206	102	4.9	NNE	23.7*	WNW	16	15	5	11	4.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
COLORADO	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
DENVER	1610	834.7	1013.7	10.6	- 4.4	2.9	-0.3	28.3	28	-19.4	13	0	24	- 7.8	52	36	5	14	8	0	457	229	5.2	S	18.3	SW	28	16	5	10	4.4	76
GRAND JUNCTION	1478	857.1	1014.5	12.2	- 1.1	5.5	0.2	22.8	31	- 8.9	5	0	20	- 7.2	47	14	- 5	7	8	1	109	25	2.8	ESE	15.2	SW	28	11	9	11	5.4	64
PUEBLO	1414	853.1	1013.6	14.4	- 3.3	5.7	1.2	28.9	28	-12.8	5	0	23	- 7.8	46	8	- 5	4	5	0	104	51	4.3	NE	24.6	N	3	15	6	10	4.3	80
CONNECTICUT																																
BRIDGEPORT	2	1016.2	1017.2	7.8	0.0	3.7	0.6	18.9	28	- 7.8	1	0	19	- 1.7	71	74	- 34	23	13	1	191	102	5.9	NNW	19.7*	WNW	6	8	8	15	6.3	
HARTFORD	52	1009.8	1016.0	7.2	- 2.8	2.3	0.2	22.2	25	- 9.4	3+	0	26	- 2.2	73	93	- 3	26	12	1	351	305	3.8	N	14.3	W	7	5	9	17	6.9	54
NEW HAVEN	2	1015.6		7.8	- 0.6	3.5	0.8	18.9	28	-10.0	1	0	19			91	- 26	32	13	1	239	102	3.6		13.4	W	6	6	12	13	6.3	59
DELAWARE																																
WILMINGTON	24	1013.[illegible]	1016.7	12.2	1.1	6.7	1.6	25.6	25	- 3.3	23+	0	17	0.6	69	108	6	26	13	1	8	T	4.9	WNW	16.5*	WNW	6	6	10	15	6.5	
DIST.OF COLUMBIA																																
WASHINGTON U	22			15.6	4.4	10.2	2.6	30.6	30	- 0.6	23+	0	3			141	55	30	13													
WASH NATL AP	4	1012.6	1017.3	15.0	3.3	9.2	2.1	30.0	30	- 2.8	3	0	6	0.0	58	138	56	54	14	3	28	25	3.9	S	14.8	N	30	8	12	11	5.8	62
FLORIDA																																
APALACHICOLA U	4	1017.9		20.6	13.3	16.9	0.8	26.1	14	6.7	22	0	0			22	- 93	13	3	0	0	0	3.0		14.3	NW	6	9	10	12	5.8	74
DAYTONA BEACH	9	1018.8	1020.7	24.4	13.9	19.2	1.5	30.6	12	2.8	23	0	0	13.3	71	37	- 53	15	11	2	0	0	4.2	SW	10.3*	WNW	6	8	12	11	5.8	
FORT MYERS	4	1018.9		28.3	16.1	22.1	2.0	31.7	18	7.2	23	0	0			15	- 52	6	5	0	0	0	4.0		11.2*	NNE	30	12	15	4	4.5	
JACKSONVILLE	7	1019.3	1020.8	25.0	12.8	18.7	1.9	31.7	19+	2.8	24	0	0	11.1	68	57	- 32	22	7	1	0	0	4.3	NE	17.0	NE	15	9	9	13	5.7	82
KEY WEST	2	1017.6	1019.0	26.7	21.7	24.1	1.6	30.0	20	16.1	23	0	0	18.3	73	3	- 42	2	3	0	0	0	5.6	SE	13.9	NE	31	16	11	4	3.8	89
LAKELAND U	65			26.1	15.6	20.7	1.5	31.7	19+	7.2	22	0	0			71	- 37	36	8	3	0	0	3.7	W#				9	12	10	5.7	64
MIAMI BEACH	3			26.1	21.1	23.5	1.5	32.8	20	13.3	22	1	0			2	- 48	1	2	0	0	0	6.5	S	13.9	NE		12	14	5	4.3	79
MIAMI	2	1018.2	1019.6	27.2	18.9	23.0	1.6	31.1	20+	11.1	23+	0	0	17.2	72	19	- 39	13	4	2	0	0	5.4	SE	13.9*	N		12	15	4	4.5	
ORLANDO	32	1015.6	1020.4	27.2	15.0	20.8	2.6	32.8	19+	6.1	23	3	0	13.9	70	68	- 18	26	7	1	0	0	4.3	SSW	13.0*	WNW	6	7	12	12	5.6	
PENSACOLA U	4			20.6	12.2	16.6	0.9	28.9	14	5.0	22+	0	0			26	-135	17	9	2	0	0	4.2	SSE	11.6	W	6+					57
TALLAHASSEE	18	1017.7	1020.5	23.9	9.4	16.6	0.7	31.1	18	0.6	23+	0	0	10.0	70	70	- 61	32	8	1	0	0	4.7	S	14.3*	NW	20+	10	7	14	5.9	
TAMPA	6	1018.8	1020.5	26.1	14.4	20.2	1.3	30.6	16+	6.1	22	0	0	13.9	73	59	- 37	27	5	1	0	0	5.8	NNE	15.6*	WNW	1	11	9	11	5.4	61
WEST PALM BEACH	5	1019.0	1020.2	27.2	17.8	22.5	1.4	31.7	20+	8.9	22	0	0	16.7	72	43	- 45	14	9	2	0	0	4.7	SE	12.5*	NE	30	5	20	6	5.6	
GEORGIA																																
ATHENS	245	989.9	1019.8	21.1	6.7	13.9	3.0	30.0	31	- 1.1	23+	0	2	5.6	62	152	22	65	10	5	0	0	4.3	WNW	13.9*	SW	5	14	7	10	4.9	
ATLANTA	306	976.9	1019.3	20.0	7.2	13.6	2.5	27.8	31	0.0	23+	0	2	3.3	56	150	14	52	10	4	0	0	3.5	WNW	13.4*	NW	21	15	4	12	5.0	70
AUGUSTA	44	1012.2	1019.3	22.8	7.2	14.9	2.2	30.6	19+	- 1.7	23	0	1	7.2	66	99	- 7	55	7	6	0	0	3.6	WNW	13.4*	WNW	20	11	8	12	5.8	
COLUMBUS	117	1005.1		22.8	7.8	15.3	2.3	29.4	31	- 1.7	8	0	3			68	- 84	22	9	3	0	0	3.9		11.2*	NW	21+	13	3	15	5.5	
MACON	109	1005.8	1019.7	23.3	8.9	15.9	2.1	31.1	19	0.0	23	0	1	6.7	61	71	- 55	25	8	2	0	0	3.7	SE	15.6	W	21	10	6	15	5.8	64
ROME	194	996.0		21.1	3.9	12.5	2.3	30.0	31	- 3.9	8	0	8			264	115	103	9	7	0	0						15	6	10	4.5	
SAVANNAH	15	1017.8	1020.5	23.3	9.4	16.2	1.6	32.2	18	0.6	23+	1	0	9.4	69	43	- 58	10	7	1	0	0	4.8	WNW	13.0	NW	21	9	6	16	6.1	72
THOMASVILLE U	86			23.3	11.7	17.4	1.6	31.7	18	3.3	22	0	0			102	- 31	59	7	2	0	0						11	6	14	5.6	
HAWAII																																
HILO	9	1013.5	1015.6	26.1	18.3	22.2	0.8	30.0	31+	16.1	25+	0	0	18.3	82	403	29	92	26	7	0	0	4.0	SW	12.5	ESE	15	0	11	20	8.0	36
HONOLULU	2	1015.2	1015.3	26.1	18.9	22.4	-0.3	28.3	30	15.6	7	0	0	17.8	76	213	140	81	13	7	0	0	4.1	ENE	13.9	SE	1	6	10	15	6.6	44
KAHULUI	13	1012.2	1015.1	27.2	18.3	22.9		30.6	2	15.6	9+	0	0	18.3	76	98		41	10	4	0	0	6.8	NE	17.4*	ENE	22	6	12	13	6.4	70
LIHUE	35	1010.2	1016.0	26.1	18.9	22.7	1.0	30.6	29	13.9	8	0	0	18.3	79	160	44	53	19	8	0	0	4.7	NE	10.3	NE	6	3	13	15	7.3	50
IDAHO																																
BOISE	865	918.0	1015.0	13.3	0.6	6.8	1.7	22.8	21	- 6.1	4	0	18	- 5.0	48	5	- 28	2	8	0	10	T	4.6	SE	14.3	NW	1	10	5	16	6.2	65
IDAHO FALLS 42NW R	1460			9.4	- 7.2	0.9	2.4	20.6	22	-16.7	13	0	29			10	- 1	6	4	0			3.7	SSW	15.6A	SW	30					
IDAHO FALLS 46W R	1504	845.2		8.9	- 6.1	1.2	2.3	17.8	22	-13.3	13	0	29			19	3	9	5	0	157	102	3.7	SW	12.1A	WSW	28					
LEWISTON	431	962.5		13.3	1.7	7.3	1.4	21.7	21	- 3.9	4	0	12			27	- 3	7	12	0	8	T						5	6	20	7.4	
POCATELLO	1355	861.2	1016.0	10.0	- 2.8	3.4	1.3	18.3	27	- 9.4	6	0	27	- 6.7	52	22	- 4	10	7	0	76	25	4.8	WSW	18.3	S	14	9	14	18	6.4	75
ILLINOIS																																
CAIRO U	96	1003.4		17.8	6.7	12.2	3.2	27.8	29	- 0.6	2	0	2			130	8	52	9	6	T	T	4.9	S#	16.1	SW	29	12	8	11	5.5	66
CHICAGO O HARE	201	989.1	1014.4	9.4	- 1.1	4.3		26.7	29	-16.1	1	0	19	- 1.1	70	57		10	17	3	191	102	5.4	SSW	16.1*	SSW	29	4	8	19	7.4	
CHICAGO MIDWAY	186	991.5	1015.1	10.0	0.6	5.3	2.9	26.1	29	- 8.9	1	0	15	- 0.6	71	62	- 8	10	15	5	137	102	5.5	SW	17.4	S	29	4	8	19	7.4	42
MOLINE	177	992.2	1014.8	10.6	- 0.6	5.1	2.9	25.0	28	-12.2	1	0	18	- 2.2	64	84	23	24	14	5	185	76	5.5	WNW	20.6	SW	16	7	7	17	6.8	48
PEORIA	199	992.9	1015.7	11.1	- 0.6	5.3	2.2	25.0	29	-10.0	1	0	19	0.6	75	135	63	37	11	5	T	25	5.3	S	17.0	W	19	7	8	16	6.8	50
ROCKFORD	222	986.7	1014.6	8.3	- 1.7	3.6	2.4	23.3	29	-15.6	1	0	23	- 1.1	76	75	12	16	15	3	310	76	5.3	WNW	13.4*	SSW	29	4	7	20	7.3	
SPRINGFIELD	179	991.5	1015.2	12.8	1.1	7.0	2.7	27.8	29	-11.1	1	0	14	1.7	70	128	55	51	13	4	5	76	6.3	SSE	18.8	W	19	7	11	13	6.2	54

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days								No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1000.5	1016.7	16.1	3.3	9.8	2.9	27.8	29	- 4.4	22	0	8	3.3	68	219	109	58	10	7	T	T	3.6	NW	21.9	W	16	7	7	17	6.4	54
FORT WAYNE	241	982.7	1015.5	10.0	- 0.6	4.7	2.6	26.1	29	-20.0	2	0	18	0.0	76	113	42	28	18	8	64	152	5.7	WSW	19.2	W	19	2	9	20	7.8	35
INDIANAPOLIS	242	985.2	1015.9	11.1	0.6	5.8	1.9	26.7	29	-18.9	2	0	16	0.6	73	273	186	77	16	6	155	178	4.7	SE	15.6*	WNW	19	7	4	20	7.5	50
SOUTH BEND	234	986.1	1014.8	8.3	- 1.1	3.6	2.0	26.7	29	-15.0	2	0	19	0.0	80	77	7	12	18	7	264	305	5.5	SW	15.6*	WSW	19	2	9	20	7.8	
IOWA																																
BURLINGTON	212	989.2	1015.0	12.2	0.0	6.2	3.2	25.0	28	- 9.4	1	0	18	0.0	71	100	31	35	14	5	81	T	5.7	WNW	21.5	NW	20	7	6	18	6.6	53
DES MOINES	289	982.7	1014.9	9.4	- 1.1	4.1	2.4	24.4	28	-11.1	6	0	20	- 0.6	76	61	8	15	9	3	157	127	5.1	NW	18.8	SW	16	8	6	17	6.7	55
DUBUQUE	325	988.3		7.8	- 2.2	2.7	2.8	22.8	30	-13.9	1	0	22			81	11	22	11	4	229	102			16.1*	SSW	24	6	4	21	7.5	
SIOUX CITY	334	972.2	1014.4	11.1	- 1.1	4.9	4.0	27.2	24	- 7.8	14	0	21	- 1.1	70	38	1	20	10	1	109	51	5.2	SSE	18.8	S	16	6	10	15	6.6	64
WATERLOO	265	981.4	1014.7	8.3	- 2.8	2.8	2.6	25.0	24	-13.3	9+	0	23	- 1.7	74	83	31	35	10	1	251	203	5.6	NW	18.3*	NW	20	6	7	18	7.1	
KANSAS																																
CONCORDIA	448	963.6	1014.3	14.4	0.6	7.3	2.7	28.9	28	- 5.6	6+	0	17	- 0.6	65	56	18	23	8	5	61	51	6.6	S	28.2	SW	16	13	6	12	5.6	69
DODGE CITY	791	925.1	1014.3	16.7	1.1	8.7	3.3	32.8	28	- 7.2	5	1	16	- 3.3	53	12	- 18	9	5	3	T	T	6.6	SSW	22.4	SW	16	12	9	10	4.9	72
GOODLAND	1111	885.2	1014.3	12.8	- 2.2	5.2	2.7	31.7	28	-12.2	5	0	24	- 3.9	62	51	24	25	6	2	460	254	6.8	SSE	19.7*	NW	29	15	7	9	4.5	
TOPEKA	115	978.7	1015.0	15.6	1.7	8.5	3.1	29.4	28	- 8.3	1	0	16	1.1	64	64	13	52	6	2	5	T	6.7	S	23.2	SW	16	8	8	15	6.2	60
WICHITA	403	965.3	1014.6	17.2	2.8	10.0	3.1	28.9	28	- 5.6	1	0	13	1.1	60	42	1	14	6	3	T	T	6.5	S	21.9	S	23	10	10	11	5.5	62
KENTUCKY																																
COVINGTON	265	983.6	1016.0	12.2	1.7	7.1	1.8	25.6	29	- 6.7	22	0	11	2.2	74	252	155	78	15	3	3	T	4.3	SW	12.1*	W	19	6	5	20	7.5	
LEXINGTON	298	980.9	1017.1	15.0	3.9	9.4	3.2	26.1	29	- 3.9	22	0	11	2.2	66	173	53	47	11	4	T	T	5.1	SSW	13.0*	N	4	7	8	16	6.5	
LOUISVILLE	144	997.2	1016.5	15.6	3.9	9.7	3.4	27.8	29	- 3.3	23	0	8	2.8	65	230	113	69	13	4	8	T	4.3	SSW	15.6	S	25	7	6	18	6.9	47
LOUISIANA																																
ALEXANDRIA	28	1014.0	1018.8	23.9	7.8	15.8		30.0	17	- 1.7	6	0	5	10.0	73	28		24	7	5	0	0	3.4	SSW				13	5	13	5.4	
BATON ROUGE	20	1015.6	1018.8	26.1	10.6	18.4	2.7	32.8	17	1.7	6	1	0	10.6	65	15	-109	7	5	1	0	0	4.2	S				11	8	12	5.6	
LAKE CHARLES	4	1016.9	1018.4	22.8	11.7	17.2	1.3	27.2	30	2.2	6	0	0	11.7	75	14	- 94	9	3	1	0	0	4.8	S	13.0*	S	4	11	8	12	5.6	
NEW ORLEANS	1	1016.8	1019.0	25.0	12.2	18.7	2.9	30.6	19+	3.9	7	0	0	12.2	69	25	-110	24	3	1	0	0	4.2	S	13.0*	SSW	11	10	6	15	6.0	
NEW ORLEANS AUDUBON	2	1012.1		23.9	14.4	19.3		30.0	17	6.7	7+	0	0			26		25	3	1	0	0	2.5	S#	8.9	NW	5	10	9	12	5.9	59
SHREVEPORT	77	1008.4	1018.0	23.9	10.6	16.8	3.1	30.6	30+	- 1.1	6	0	1	7.8	62	23	- 82	9	10	6	0	0	5.2	S				9	12	10	5.8	69
MAINE																																
CARIBOU	190	990.2	1013.8	- 0.6	-12.8	- 6.7	-1.6	9.4	25	-25.6	1	0	29	-10.6	73	56	- 4	18	11	0	584	1143	5.3	NW	17.9*	NW	15	10	7	14	6.0	
PORTLAND	19	1010.8	1015.1	5.6	- 5.6	- 0.1	0.3	13.9	30	-17.2	1	0	29	- 5.0	71	86	- 24	33	13	0	485	508	4.3	NW	18.3	E	6	9	9	13	6.0	60
MARYLAND																																
BALTIMORE	45	1012.1	1017.1	13.9	1.7	7.7	1.6	29.4	30	- 3.9	15+	0	14	- 1.1	60	118	22	36	14	1	46	51	4.5	WNW	20.1	NW	6	10	9	12	5.8	61
BALTIMORE U	4			13.9	3.9	8.9	1.9	27.2	25	- 1.1	23+	0	5			114	14	29	13													
FREDERICK	90			12.2	1.1	6.6	1.6	26.7	25	- 4.4	15	0	16			117	27	28	13	0	69	51										
MASSACHUSETTS																																
BLUE HILL OBS R	192	990.2		6.7	- 2.2	2.2	0.7	22.2	25	- 8.9	1	0	26			113	- 3	29	13		445	254	6.9	NW	21.9	NW	10					54
BOSTON	5	1010.2	1015.1	7.8	0.0	3.9	0.8	25.6	25	- 6.1	1	0	19	- 2.8	66	112	4	33	13	1	345	229	6.8	W	17.9	W	7	9	8	14	6.1	61
NANTUCKET	13	1014.9	1015.7	6.7	0.0	3.2	0.9	12.8	28	- 4.4	1	0	21	- 0.6	77	138	23	32	12	3	114	25	6.4	WSW	20.1	SW	6	11	5	15	6.1	59
PITTSFIELD	357			5.6	- 5.0	0.5	1.2	18.9	26	-12.2	1	0	29			66	- 16	22	15		376	635										
WORCESTER	301	997.2	1014.9	5.6	- 3.3	1.1	0.7	19.4	25	-10.6	1	0	26	- 5.0	67	118	13	38	11	1	389	584	4.6	W	13.9*	NW	7	10	5	16	6.0	
MICHIGAN																																
ALPENA	210	988.5		3.9	-10.6	- 3.6	-0.9	20.0	29	-26.7	9	0	30			85	34	23	15	1	460	483	3.4	SE	13.4	SE	19	7	9	15	6.4	65
DETROIT	189	987.8	1015.3	7.8	- 1.1	3.1	1.6	25.0	29	-12.2	2	0	18	- 2.2	72	63	1	16	17	3	81	76	5.1	SSW	18.8	W	17	3	10	18	7.3	42
DETROIT M WAYNE CO	193	990.6	1015.3	7.2	- 2.2	2.7	1.3	25.0	29	-17.2	2	0	19	- 1.7	76	70	9	18	19	3	71	102	4.3	SSW				5	6	20	7.6	
DETROIT WILLOW RUN	217	986.1	1015.1	7.2	- 1.7	2.8	0.9	25.6	29	-15.0	1	0	17	- 1.1	76	58	- 3	11	19	3	112	76	5.7	SSW	16.5*	WSW	17	2	10	19	7.6	
ESCANABA U	181	991.5		2.2	- 8.3	- 3.2	0.1	16.7	30	-21.7	9	0	30			31	- 11	14	9	0	249	229	4.7		21.9	NW	20+	7	9	15	6.6	62
FLINT	233	986.8	1015.6	6.7	- 3.9	1.3	1.3	25.0	29	-22.2	2	0	23	- 2.8	75	46	- 8	17	13	2	142	76	5.1	SW	15.6*	SSW	29	5	7	19	7.4	
GRAND RAPIDS	210	989.2	1015.1	7.2	- 3.3	1.9	1.7	26.7	29	-17.2	1	0	24	- 2.2	76	88	30	25	15	3	127	178	5.3	E	18.8	SSW	29	4	8	19	7.5	52
LANSING	260	981.7	1014.7	7.2	- 3.9	1.6	1.4	25.6	29	-18.3	1	0	25	- 3.3	71	54	- 7	13	16	1	152	102	6.7	WNW	21.0	S	29	4	9	18	7.3	54
MARQUETTE U	206	986.8		2.8	- 7.8	- 2.4	0.6	18.9	31	-16.1	9	0	29			38	- 11	28	12	0	381	660	4.1	S#	15.6	NW	20	4	9	18	7.3	63
MUSKEGON	191	991.5	1014.8	6.1	- 3.3	1.3	1.4	22.2	29	-20.0	1	0	24	- 3.3	73	64	12	13	13	1	201	559	5.3	ESE	15.6*	S	29	4	9	18	7.4	
SAULT STE MARIE	220	991.5	1015.0	0.6	-10.6	- 5.0	-0.2	10.6	24	-23.3	9	0	30	- 8.3	77	52	6	19	10	2	328	584	4.4	ESE	12.5*	N	20	7	6	18	6.8	60
MINNESOTA																																
DULUTH	435	971.9	1014.5	3.3	- 8.3	- 2.5	3.2	17.2	29	-28.6	10+	0	29	- 7.8	66	38	- 3	9	15	1	485	457	5.4	NW	18.8	NE	16	5	8	18	7.1	58

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature							No. of days			Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind		Fastest mile (1.6 kilometers)			No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MINNESOTA	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INTERNATIONAL FALLS	359	971.9	1014.4	3.9	-10.6	- 3.3	3.7	22.8	31	-25.6	10	0	29	- 8.3	68	15	- 11	6	9	1	145	457	4.2	NW	15.6*	W	29	8	8	15	6.3	
MINNEAPOLIS	251	980.0	1014.6	6.7	- 4.4	1.2	3.7	25.0	30	-22.8	10	0	26	- 3.3	72	30	- 9	18	10	0	249	178	5.0	SSE	15.2	SSE	15	8	6	17	6.8	50
ROCHESTER	395	965.8	1014.8	5.6	- 5.0	0.2	2.2	22.2	30	-19.4	9	0	24	- 2.8	78	45	3	13	12	0	320	203	6.5	NW				5	8	18	7.0	
ST CLOUD	315	975.6		6.7	- 5.0	0.7	4.3	22.8	31+	-22.2	10	0	24			35	3	12	11	0	384	152						8	6	17	6.4	
MISSISSIPPI																																
JACKSON	93	1006.0	1018.4	23.9	9.4	16.4	2.8	30.0	31+	0.6	6+	0	0	8.9	64	49	- 92	16	12	7	0	0	4.1	S	15.2	SW	11	15	6	10	4.6	68
MERIDIAN	89	1005.1	1019.3	23.9	7.2	15.5	1.9	31.1	31	- 1.1	23+	0	4	7.8	65	94	- 67	22	8	5	0	0	3.5	S	10.3*	NW	5	14	6	11	4.9	
VICKSBURG U	71	1008.4		23.3	11.1	17.2	3.0	30.0	13	1.7	6	0	0			49	- 97	15	9	6	0	0	4.4		13.9	S	11	12	7	12	5.3	70
MISSOURI																																
COLUMBIA	237	985.8	1014.5	15.6	2.8	9.0	3.5	26.7	29+	- 7.8	1	0	13	1.1	64	87	20	39	10	3	T	T	5.9	WNW	15.2	NW	20	8	10	13	5.9	55
KANSAS CITY	226	979.2	1014.7	16.1	3.3	9.6	3.6	28.3	28	- 6.7	9	0	11	0.6	59	49	- 14	44	8	3	8	T	3.9	WNW	24.6	SW	16	8	11	12	6.1	68
ST JOSEPH	247	980.0		13.9	1.7	7.7	3.1	27.2	28	- 8.3	1	0	14			89	30	43	7	3	20	T	6.5	WNW	20.6*	WSW	16+	8	10	13	6.2	
ST LOUIS	163	994.6	1015.8	16.1	2.2	9.3	3.2	31.1	29	- 3.9	1	0	11	0.6	61	141	62	37	15	7	23	25	6.2	WNW	17.9	NW	20	8	10	13	6.0	61
ST LOUIS RFC	142			16.1	4.4	10.2	3.4	30.0	29	- 2.8	1	0	6			158	77	44	12	0	T	T										
SPRINGFIELD	386	967.7	1015.7	18.3	3.9	11.1	4.4	30.0	28	- 9.4	1	0	8	2.8	61	51	- 21	25	11	7	T	76	5.7	SSE	18.8	S	12	6	18	7	5.5	67
MONTANA																																
BILLINGS	1087	887.4	1013.0	11.1	- 1.7	4.9	4.2	22.2	22	- 9.4	17+	0	20	- 7.8	44	10	- 17	5	7	1	69	25	5.8	WSW	15.2	NW	19	5	10	16	6.5	79
GLASGOW	694	936.9		9.4	- 2.8	3.3	6.2	22.8	22	-11.7	16	0	23			7	- 7	3	5	0	36	25						4	10	17	7.2	
GREAT FALLS	1116	884.3	1014.1	10.0	- 1.7	4.1	4.6	21.7	22	- 8.9	12+	0	22	- 7.8	47	9	- 14	3	5	0	99	51	6.5	SW	15.6	SW	29	6	5	20	7.6	64
HAVRE	787	922.2		10.6	- 3.3	3.5	6.3	23.3	22	-11.1	13	0	26			3	- 13	1	2	0	T	T	4.4	SW#	21.0	W	28	5	6	20	7.4	66
HELENA	1187	869.7	1014.5	9.4	- 3.3	3.1	3.4	20.0	22	- 9.4	13	0	25	- 7.2	50	11	- 7	6	9	0	150	76	4.2	WNW	14.3	SW	23	5	8	18	7.2	61
KALISPELL	904	908.7		8.3	- 2.8	2.9	4.1	18.9	22	- 8.3	4	0	26			32	7	15	9	1	58	25	2.8					2	5	24	8.1	
MILES CITY				11.7	- 2.2	4.6	5.2	23.9	22	-10.0	13	0	21	- 4.4	59	7	- 9	6	4	1	10	T	4.6	W	13.0	NW	28	6	11	14	6.5	
MISSOULA	972	899.4	1015.6	9.4	- 2.2	3.7	2.8	19.4	22+	- 7.2	4	0	26	- 4.4	60	32	13	9	12	0	170	51	3.0	NNW	14.3	SW	30	2	9	20	7.9	57
NEBRASKA																																
GRAND ISLAND	561	947.2	1014.7	11.7	- 2.8	4.5	1.6	29.4	28	- 8.3	21+	0	24	- 2.2	69	30	- 3	8	9	3	102	51	5.8	SSE	17.0*	WNW	16	7	9	15	6.3	
LINCOLN U	351			13.9	1.1	6.7	3.3	27.2	28	- 5.6	6+	0	18			65	21	19	10	4	279	178	5.7	NW#	25.0	W	16	5	12	14	6.6	62
NORFOLK	471	957.3		11.7	- 1.7	5.1	4.3	28.3	24	- 7.2	21	0	21			22	- 18	11	8	0	86	51						5	15	11	6.2	
NORTH PLATTE	847	913.4	1013.4	12.2	- 2.8	4.9	3.2	27.8	28	-10.0	5	0	26	- 3.3	65	18	- 7	8	7	1	241	178	6.2	NW	21.0	NW	16	13	4	14	5.4	70
OMAHA	298	973.6	1014.5	11.7	0.6	5.9	3.2	26.1	28	- 7.8	6	0	16	- 0.6	67	77	41	29	10	3	330	279	5.6	SSE	19.7	S	16	5	10	16	6.9	60
OMAHA N OMAHA AP	403	965.3		10.6	0.0	5.2	3.7	25.6	28+	- 8.3	6	0	19			96	59	28	11	2	371	305						5	8	18	6.9	
SCOTTSBLUFF	1204	876.0	1014.4	10.6	- 4.4	3.3	1.7	26.1	28	-16.1	5	0	27	- 5.0	60	17	- 5	9	5	0	183	76	5.8	WNW	27.7*	WNW	16	12	7	12	5.3	
VALENTINE	789	921.1		12.2	- 3.3	4.3	4.7	26.7	31+	-15.0	5	0	25			35	9	19	4	0	254	203	5.6	N#	19.2	N	16	10	9	12	5.7	67
NEVADA																																
ELKO	1547	842.5	1015.6	10.0	- 6.1	1.8	-0.1	18.3	21	-12.2	13	0	29	- 8.3	51	17	- 5	11	9	0	142	51	3.6	SW	13.9*	WNW	23	9	3	19	6.5	
ELY	1907	805.6		8.3	- 8.3	0.2	-0.7	17.2	26	-16.7	16	0	31			21		7	9	0	196	102	5.1	S	25.5	SW	28+	9	5	17	6.4	80
LAS VEGAS	659	947.9	1014.3	20.0	4.4	12.2	-0.7	27.8	27	- 2.2	5	0	3	- 7.2	29	6	- 3	6	2	1	T	T	4.7	SW	15.6*	N	15	16	8	7	4.3	86
RENO	1342	860.8	1016.1	13.3	- 3.9	4.7	-0.3	20.0	22	- 8.3	24+	0	26	- 4.4	55	10	- 7	5	7	0	86	25	3.4	S	21.9	S	29	8	13	10	5.8	78
WINNEMUCCA	1310	866.1		11.1	- 5.6	2.9	-0.4	19.4	21	-12.8	13	0	28			9	- 12	3	8	0	69	25	3.9	S	29.5	W	14	6	9	16	6.5	68
NEW HAMPSHIRE																																
CONCORD	103	1004.1	1015.2	6.7	- 5.0	0.8	1.0	21.1	26+	-18.9	1	0	29	- 5.0	69	54	- 29	18	12	0	353	584	3.8	NW	13.0	NW	31	7	9	15	6.2	52
MT WASHINGTON OBS	1909	796.8		- 6.1	-14.4	-10.5	0.8	3.3	26	-24.4	11	0	31			195	49	64	15	0	1008	483	18.1	NW#	55.4Y	W	7	7	6	18	7.1	37
NEW JERSEY																																
ATLANTIC CITY	18	1015.0	1017.1	13.3	1.7	7.5	2.4	27.2	30	- 4.4	3	0	13	0.0	65	132	33	30	12	0	T	T	4.9	WNW	18.3*	W	6	7	10	14	6.1	55
ATLANTIC CITY U	3			11.1	2.8	7.1	2.0	23.3	28	- 2.2	3	0	9			135	33	35	12				5.2		18.3*	NW	6					
NEWARK	3	1015.2	1016.7	10.0	1.7	5.8	1.1	26.1	25	- 3.9	1	0	12	- 1.7	64	100	- 4	28	14	0	64	51	5.0	NW	14.3*	NNW	18+	9	7	15	6.3	
TRENTON U	17	1008.8	1015.9	11.1	1.7	6.3	1.4	25.6	25	- 3.3	1	0	11			102	5	30	15	0	33	25	4.3	NW#	15.6	SE	26	9	10	12	6.0	56
NEW MEXICO																																
ALBUQUERQUE	1618	846.3	1013.8	15.0	- 0.6	7.3	-0.6	26.7	28	- 6.7	19+	0	22	- 7.2	40	14	2	8	2	1	64	51	4.8	N	21.0	NW	1	13	11	7	4.8	77
CLAYTON	1515	842.5		15.6	- 2.2	6.8	1.9	29.4	28	-10.6	5	0	24			2	- 14	1	4	1	15	25						13	7	11	4.8	
RATON	1944	802.2		13.9	- 5.6	4.1	0.7	24.4	28	-15.0	5	0	27			1	- 12	1	2	0	10	T						11	9	11	5.2	
ROSWELL	1103	891.3		21.1	- 0.6	10.2	1.3	32.2	28	-10.0	5	1	19			0	- 13	0	0	0	0	0	4.5	SE	15.2	S	3	14	10	7	4.5	82
SILVER CITY	1638	834.2		17.8	- 0.6	8.6		25.6	28+	- 6.7	5	0	21			1		1	2		5	T						18	11	2	3.4	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days								Snow, Sleet				Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0.3	Partly cloudy, 4.7	Cloudy, 8.10		
NEW YORK	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALBANY	84	1012.5	1016.2	5.6	- 3.9	0.9	0.3	21.1	26	-14.4	1	0	27	- 3.9	71	88	19	19	16	1	467	406	3.8	WNW	16.1	W	18	3	8	20	7.5	51
BINGHAMTON	485	954.4	1014.7	6.1	- 2.2	1.9	2.6	20.0	26	-12.8	1	0	23	- 3.3	71	73	- 1	15	18	2	511	356	5.1	WNW	16.1	SW	6	2	8	21	8.3	49
BUFFALO	215	986.5	1015.6	6.7	- 2.8	1.9	2.7	22.8	29	-15.6	1	0	24	- 2.2	75	56	- 27	11	15	2	196	432	5.8	SW	25.0	SW	6	4	6	21	7.8	43
NEW YORK U	40	1004.6		10.6	2.8	6.5	1.8	26.1	25	- 3.3	1	0	8			92	- 10	25	16	0	71	51	4.4	W#	15.2	W	6	10	9	12	6.0	52
NEW YORK LA GUARDIA	6	1014.6	1016.4	8.9	1.7	5.3	0.4	25.0	25	- 3.3	1	0	9	- 2.2	61	83	- 25	29	16	0	61	51	5.5	NE	18.8	W	6	8	11	12	6.3	
ROCHESTER	166	995.9	1015.9	6.7	- 2.8	2.1	1.9	23.9	26	-15.6	1	0	23	- 2.8	74	64	- 12	15	10	0	170	178	5.5	WSW	20.1	NW	10	4	7	20	7.7	54
SCHENECTADY	66			6.1	- 3.3	1.4	1.0	20.0	26	-11.1	1	0	28			87	14	19	15	1	470	533						14	9	8	4.7	
SYRACUSE	127	992.9	1015.4	6.1	- 3.3	1.2	0.9	21.7	26	-16.1	1	0	26	- 3.3	72	71	- 21	27	18	2	401	356	6.1	E	16.5	W	7	3	8	20	7.8	49
NORTH CAROLINA																																
ASHEVILLE U	671	938.4		16.7	4.4	10.6	2.7	27.2	31	- 3.3	3	0	6			195	100	83	10	4	T	T	4.6	NW#	15.2	NW	21	11	11	9	5.0	69
CAPE HATTERAS R	2	1017.6	1018.5	17.8	7.8	12.6	2.1	23.9	30	1.1	24+	0	0	7.8	73	49	- 57	15	12	0	0	0	5.1	WSW				8	9	14	6.1	65
CHARLOTTE	224	989.8	1018.5	19.4	5.6	12.3	2.0	28.9	18	- 4.4	23	0	4	3.9	60	134	23	61	12	0	0	0	3.7	SW	14.8	SW	6	11	9	11	5.1	68
GREENSBORO	272	986.4	1018.3	17.2	3.9	10.7	2.2	26.7	30+	- 5.0	23	0	6	2.2	61	164	70	66	11	2	T	T	4.3	SSW	17.0	NW	19	12	6	13	5.5	67
RALEIGH	132	1003.9	1017.9	18.9	5.0	11.9	2.2	27.2	30	- 3.3	23	0	4	3.3	60	97	11	26	11	1	0	0	4.9	SSW	13.0*	SSW	26	11	8	12	5.2	74
WILMINGTON	9	1016.1	1019.1	21.1	7.8	14.3	1.9	28.9	18	- 0.6	23	0	1	7.8	69	24	- 78	6	10	1	0	0	3.6	SW	19.2	SW	6	7	13	11	6.0	64
WINSTON SALEM	295	982.4	1018.1	17.8	5.6	11.4	2.4	27.2	30	- 1.7	23+	0	3	0.6	51	150	48	50	11	2	T	T	4.8	SW	15.6*	WNW	6	12	7	12	5.3	
NORTH DAKOTA																																
BISMARCK	502	952.7	1013.5	9.4	- 5.0	2.3	6.1	26.7	23	-13.9	17	0	27	- 5.6	63	7	- 12	3	7	0	66	T	3.6	S	18.8	NW	28	6	9	16	6.8	70
DEVILS LAKE U	448	958.7		5.6	- 8.3	- 1.5	4.3	22.2	23	-21.7	8	0	28			12	- 8	4	7	0	145	102	4.2	N#	15.6	NW	29	8	7	16	6.7	69
FARGO	274	978.7	1014.2	5.6	- 8.9	- 1.7	2.6	25.0	31	-21.1	13	0	28	- 6.1	74	13	- 6	4	8	0	135	51	6.0	SSE	17.9	NW	29+	6	9	16	6.5	80
WILLISTON U	579	943.1		8.9	- 5.0	2.0	5.7	23.3	23	-15.6	13	0	26			18		6	7	0	91	25	4.6	SW#	21.0	NW	28	7	7	17	6.8	60
OHIO																																
AKRON	369	977.0	1015.9	9.4	- 1.1	4.1	2.2	25.0	29	- 9.4	2	0	20	- 0.6	74	120	36	31	20	4	394	178	4.8	SW	15.6*	WSW	17	3	7	21	7.8	
CINCINNATI OBS	232			13.9	3.3	8.4	2.5	26.7	29	- 5.0	22+	0	10			250	151	88	14	3	8	T	3.5	S#	13.4	SW	6					44
CINCINNATI U	169	992.7		14.4	3.9	9.2	2.2	27.2	29	- 3.3	2	0	8			244	140	80	13	3	T	T										
CLEVELAND	237	987.1	1015.6	8.9	- 1.1	3.9	2.1	26.7	29	-15.0	2	0	20	- 0.6	76	72	- 8	14	19	3	264	254	5.5	S	18.8	SW	17	3	7	21	8.0	49
COLUMBUS	247	985.8	1016.4	11.1	0.6	6.0	1.6	25.6	29	-10.0	2	0	15	0.6	71	181	101	68	14	4	61	76	4.9	SSW	19.7	W	20	4	9	18	7.7	48
COLUMBUS U	221			11.7	2.2	6.8	2.1	25.0	29	- 9.4	2	0	14			187	114	73	13	4	89	76										
DAYTON	304	982.7	1016.0	11.1	1.1	5.9	2.1	25.6	29	-14.4	2	0	15	0.6	74	173	93	67	15	6	251	279	5.6	SSW	15.6	SW	19+	4	5	22	7.8	39
MANSFIELD	395			8.9	- 1.1	3.9	2.1	23.9	29	-15.0	2	0	21			121	25	37	18	5	376	279						2	9	20	7.8	
SANDUSKY U	185	993.6		8.3	- 0.6	4.0	1.2	26.1	29	-13.9	2	0	19			78	6	11	18	3	191	305	4.8	SW#	24.6	W	6	8	8	15	6.5	52
TOLEDO	206	989.2	1015.4	7.8	- 2.2	2.8	1.0	26.7	29	-16.7	2	0	21	- 2.2	73	80	22	21	21	4	142	102	5.1	WSW	17.0	W	17	2	9	20	7.9	39
YOUNGSTOWN	359	972.2	1015.8	8.3	- 1.1	3.6	1.2	24.4	29	-11.7	1	0	20	- 0.6	76	93	8	19	19	2	409	203	5.1	SW	15.6*	SW	17	3	4	24	8.1	
OKLAHOMA																																
OKLAHOMA CITY	390	972.1	1015.9	19.4	5.0	12.1	3.2	30.0	29+	- 5.6	1	0	6	2.[illegible]	59	82	31	46	6	6	0	0	7.1	SSE	20.1	SW	12	11	10	10	5.2	61
TULSA	206	990.9	1015.8	20.6	5.0	12.7	3.4	32.2	29+	- 5.6	1	2	8	2.[illegible]	58	72	10	35	8	4	0	T	5.9	SSE	15.2	SE	30	11	10	10	5.3	64
OREGON																																
ASTORIA	2	1014.8	1015.5	11.7	3.3	7.2	0.3	17.8	7	- 2.2	3	0	8	3.9	82	156	- 71	36	19	3	0	0	3.8	SE	14.8*	NW	11	5	3	23	7.7	
BURNS U	1265	870.6		9.4	- 3.3	2.9	-0.1	16.1	20	- 8.9	13	0	26			29	5	7	11	0	114	51						8	4	19	6.7	
EUGENE	110	1003.4		12.8	2.8	7.6	-0.2	21.1	20	- 2.2	13+	0	6			182	72	62	15	1	T	T	3.6		21.5*	S	27	5	2	24	7.8	
MEACHAM	1234			5.6	- 2.8	1.3	0.6	12.8	25+	- 7.8	6+	0	23			56	- 45	19	14	0	493	330						7	4	20	7.1	
MEDFORD	396	969.2	1017.4	13.3	0.0	6.6	-1.1	20.6	21	- 5.6	4	0	18	1.1	72	22	- 23	5	10	0	T	T	2.8	NW	13.0*	SE	27	3	4	24	7.7	
PENDLETON	452	961.1	1015.2	12.8	2.2	7.4	0.7	20.6	20	- 1.7	4	0	7	0.0	62	9	- 21	3	5	1	T	T	4.7	W	17.0*	W	30	8	5	18	6.6	
PORTLAND	6	1010.5	1016.2	12.2	2.8	7.3	-0.5	19.4	20	- 2.2	13+	0	7	3.9	81	119	22	35	19	2	0	0	3.8	ESE	25.5	S	27	6	1	24	7.8	30
PORTLAND U	9			13.3	4.4	8.9	0.2	21.1	20	0.6	4+	0	0			169	48	56	16		3	T										
ROSEBURG	154	998.3		13.9	1.7	8.0	-0.1	21.1	21	- 2.8	13+	0	9			90	3	24	15	0	0	0	2.2	N#	17.9	S	27	3	5	23	8.0	50
SALEM	59	1009.5	1016.6	12.2	1.7	6.9	-0.8	20.0	20	- 4.4	4	0	11	3.3	79	165	46	53	18	0	0	0	3.8	S	17.4*	S	27	6	3	22	7.5	
SEXTON SUMMIT R	1169	881.8		6.1	- 1.1	2.6	-0.8	13.9	20	- 5.0	15	0	22			131	43	32	16		363	127	5.6	S				3	5	23	8.2	
PACIFIC AREA																																
CANTON ISLAND	3	1008.5	1008.8	31.7	25.6	28.7	0.3	32.8	21	23.9	29+	18	0	22.8	75	22	- 41	12	7	0	0	0	6.7	NE	11.6*	ESE	6	15	10	6	4.5	
TAGUAC GUAM R	110			29.4	22.2	25.6	-0.4	30.6	29+	16.7	14	0	0			62	- 5	12	15		0	0	3.9	E#	10.7	E	31					82
JOHNSTON	2	1012.5	1013.1	27.2	23.3	25.1	-0.1	28.9	29+	19.4	29+	0	0	20.6	76	59	- 1	44	12	0	0	0	6.8	ENE	21.0	E	21	11	15	5	4.6	72
KOROR R	29	1006.4	1009.2	30.6	23.9	27.3	0.2	32.2	28	22.2	4	1	0	23.9	86	214	20	47	19	1	0	0	3.6	ENE	11.6	NE	27	0	0	31	10.0	59
PONAPE R	37	1004.4	1008.7	30.0	23.9	27.0	0.0	31.7	31	21.7	31	0	0	23.3	83	433	64	112	25	2	0	0	3.1	NE	9.8	NE	19+	0	1	30	9.6	48
TRUK MOEN ISLAND	2	1009.1	1009.4	30.0	24.4	27.1	0.0	31.1	28+	22.2	29	0	0	22.8	76	138	- 59	40	13	0	0	0	4.0	NNE	10.7	S	31+	0	2	29	9.3	54
WAKE	3	1014.0	1014.4	29.4	23.3	26.3	0.9	30.6	18+	21.7	17+	0	0	20.0	70	28	- 10	12	7	0	0	0	5.3	ENE	11.2*	E	14	10	16	5	4.7	
YAP R	16	1007.8	1008.9	30.0	24.4	27.2	-0.1	32.2	29	23.3	31+	1	0	23.9	83	283	146	129	21	1	0	0	5.2	NE	13.0	NE	16	0	0	31	10.0	34

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
PENNSYLVANIA	M.	Mb.	Mb.	C.	°C.	C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s							%
ALLENTOWN	115	1002.4	1016.9	9.4	- 0.6	4.2	1.1	25.0	25	-10.6	1	0	20	- 1.7	70	101	5	20	14	0	114	178	4.9	WNW	21.5*	W	6	4	13	14	6.8	
ERIE	223	988.5	1015.4	7.8	- 1.7	3.2	2.3	25.6	29	-12.8	1	0	23	- 1.7	74	72	- 1	16	16	3	277	203	6.3	WSW	17.9*	SE	6	4	6	21	7.9	
HARRISBURG	102	1002.7	1017.0	11.1	1.7	6.2	1.6	26.7	25	- 4.4	3	0	14	- 1.1	64	98	11	23	13	1	155	76	4.2	NW	14.8	W	6	4	12	15	7.1	45
PHILADELPHIA	2	1012.2	1016.9	11.1	0.6	6.1	1.1	25.6	25	- 5.0	8	0	15	0.0	68	100	4	27	12	1	5	T	4.5	WSW	18.8	NW	6	7	9	15	6.8	49
PHILADELPHIA U	11			12.8	3.3	8.1	1.7	26.1	25	- 2.2	11	0	5			0		0														
PITTSBURGH	347	985.1	1016.3	10.0	- 0.6	4.8	2.2	25.0	29	- 8.3	3	0	19	0.0	74	134	47	49	16	3	114	152	4.4	WSW	15.6*	WSW	6	3	7	21	8.0	38
PITTSBURGH U	228			12.2	2.2	7.3	2.6	25.6	29	- 2.8	23+	0	13			143	54	53	15		64											40
READING U	81	1004.4		11.1	2.2	6.6	1.4	25.6	25	- 3.9	1	0	12			90	- 6	17	15	0	30	102	5.2	NW#	25.5	E	6	7	10	14	6.6	42
SCRANTON	287	981.4	1016.2	8.3	- 1.1	3.4	1.7	22.2	25	-10.0	1	0	19	- 2.8	68	56	- 16	15	17	1	211	305	3.9	WSW	14.3	SW	6	3	9	19	7.8	38
WILLIAMSPORT	161	997.3	1016.6	8.9	- 1.1	3.8	0.8	23.9	25	-12.2	1	0	22	- 2.2	68	80	- 15	17	18	2	234	254	4.2	W	17.0*	WSW	6	4	8	19	7.5	
RHODE ISLAND																																
BLOCK ISLAND	34	1010.7		6.1	0.0	2.8	-0.1	15.0	28	- 5.6	1	0	20			88	- 16	30	13	1	76	51						9	8	14	6.1	
PROVIDENCE	17	1009.5	1015.8	8.3	- 0.6	3.8	1.1	18.9	25	- 7.2	1	0	21	- 2.8	67	96	- 9	38	11	1	239	102	5.1	WNW	17.4*	SW	6	11	6	14	5.9	57
SOUTH CAROLINA																																
CHARLESTON	12	1017.3	1019.5	23.3	8.9	16.1	2.3	32.2	18	1.1	24+	1	0	7.8	64	25	- 75	6	9	0	0	0	4.6	SSW	20.1Y	SW	6	9	8	14	6.0	70
CHARLESTON U	3			20.6	11.1	15.9	1.8	30.0	18	3.9	22	0	0			52	- 40	26	8		0	0	4.7		16.5	W	6					
COLUMBIA	66	1005.6	1018.8	22.8	7.2	15.0	2.6	31.1	19+	- 2.2	23	0	1	5.0	59	83	- 25	42	10	2	0	0	3.8	SW	15.6*	SW	6	12	8	11	5.3	67
FLORENCE	45	1012.6	1018.7	22.2	7.8	15.0	2.4	31.1	18	- 0.6	23	0	1	5.6	59	45	- 47	28	11	3	0	0	4.1	SW	13.0*	SSW	6	11	9	11	5.5	
GNVLE SPARTANBURG	292	981.0	1018.5	20.0	6.1	13.0	2.2	30.0	18	- 1.7	23	0	2	3.3	58	245	125	113	12	4	0	0	3.9	SW	17.0	W	20	13	7	11	5.0	66
SOUTH DAKOTA																																
HURON	391	965.5	1013.6	11.7	- 3.3	4.3	5.6	30.0	31	-11.7	17+	0	23	- 1.7	71	30	2	19	7	0	163	152	6.0	SE	17.9	S	15	8	9	14	6.4	62
RAPID CITY	965	897.7	1013.7	11.1	- 2.8	4.3	4.8	26.7	28	-12.8	17	0	23	- 5.6	55	41	15	35	7	0	439	381	5.4	NNW	22.4	NW	16	9	10	12	6.1	65
SIOUX FALLS	433	960.0	1013.9	10.0	- 2.2	3.8	4.9	26.7	24	- 8.9	10	0	22	- 2.2	70	29	- 10	17	7	1	71	76	5.0	S	13.0*	NW	7	8	11	12	6.3	
TENNESSEE																																
BRISTOL	459	962.7	1017.9	17.2	3.3	10.1	2.6	27.2	31	- 4.4	23	0	10	1.7	61	191	90	79	11	4	8	T	3.2	SW	14.3*	W	20	4	14	13	6.4	
CHATTANOOGA	204	991.0	1018.9	20.0	5.6	12.8	2.7	30.6	31	- 1.7	23+	0	5	3.9	61	326	183	137	11	6	0	0	4.0	S	15.2	W	19	13	5	13	5.3	64
KNOXVILLE	290	982.7	1018.6	19.4	6.1	12.8	3.3	30.0	31	- 2.2	3	0	3	3.3	59	252	132	122	10	4	T	T	4.6	SW	25.0	W	11	7	11	13	6.2	61
MEMPHIS	80	1002.6	1017.6	20.6	7.2	13.7	2.8	29.4	31	- 1.1	22	0	4	6.1	63	157	28	62	9	7	0	0	4.8	S	14.3	SW	4	11	10	10	5.1	77
MEMPHIS U	83			19.4	8.9	14.2	3.2	28.9	30+	0.6	6	0	0			157	33	46	10	0	0	0										
NASHVILLE	176	997.3	1017.5	18.9	5.0	12.1	2.6	30.0	31	- 2.2	23+	0	5	4.4	63	255	123	82	9	7	0	0	4.8	S	17.0	SW	11	12	8	11	5.5	61
OAK RIDGE	276	983.8		18.3	4.4	11.3	2.4	29.4	31	- 6.7	3	0	7			230	88	99	10	4	T	T	2.5		15.2Y		20	10	7	14	5.9	
TEXAS																																
ABILENE	536	953.1	1014.7	23.9	7.8	15.9	3.2	33.9	29	- 2.2	7	3	5	1.1	44	1	- 26	1	1	0	T	T	5.8	SSE	16.5	SE	10+	12	10	9	5.1	78
AMARILLO	1099	886.9	1013.4	18.9	1.7	10.2	2.4	32.2	28	- 9.4	5	1	12	- 5.0	41	7	- 14	6	2	2	T	T	7.6	SSW	28.2	W	18	14	8	9	4.4	77
AUSTIN	182	994.4	1016.6	24.4	11.7	18.1	2.7	31.1	30	1.1	6	0	0	7.2	55	6	- 49	4	4	1	0	0	4.8	SSE	13.9	N	5	8	10	13	6.0	52
BROWNSVILLE	5	1013.9	1015.6	26.1	16.7	21.6	1.6	31.7	11	5.6	6	0	0	16.1	75	2	- 24	1	4	0	0	0	6.6	SE	14.8	S	16+	1	13	17	7.2	42
CORPUS CHRISTI	13	1014.9	1016.3	25.6	15.0	20.4	1.9	32.2	16	3.3	6	1	0	13.9	71	2	- 34	2	3	1	0	0	6.7	SSE	16.1	NE	5	4	10	17	7.2	63
DALLAS	147	998.1	1016.8	23.3	9.4	16.6	3.2	30.6	30	- 1.1	6	0	1	5.0	51	17	- 56	11	4	1	T	T	6.3	S	15.6	NW	8	9	8	14	5.8	74
DEL RIO U	292			26.7	12.2	19.4		33.9	18	2.2	6	4	0			T		T	0		0	0										
EL PASO	1194	884.5	1012.5	21.7	5.0	13.6	0.8	30.0	28	- 2.8	7	0	5	- 7.8	24	T	- 9	T	0	0	0	0	4.7	WSW	25.5	NW	18	18	7	6	3.7	92
FORT WORTH	166	995.6	1016.7	23.3	8.9	16.2	2.9	30.6	30	- 3.3	6	0	3	5.0	51	12	- 52	6	6	2	3	T	7.0	S	17.0*	S	18	7	10	14	6.1	
GALVESTON U	2			20.6	15.0	17.8	1.4	25.6	19	7.2	1	0	0			2	- 71	1	3	0	0	0	5.6		15.2	N	5					67
GALVESTON	2	1015.4	1018.0	20.6	15.0	17.6	1.3	24.4	19	6.1	6	0	0	13.3	78	4	- 73	2	6	0	0	0	4.9	SE				10	7	14	6.1	
HOUSTON U	12			24.4	15.0	19.7	2.8	31.1	12	7.8	6+	0	0			21	- 40	19	7		0	0										
HOUSTON	15	1014.4	1017.3	24.4	12.2	18.3	1.2	29.4	12	1.1	6	0	0	11.7	74	14	- 54	9	6	0	0	0	5.3	SSE	13.0*	NNW	5	7	8	16	6.7	60
LAREDO	152	995.9	1014.7	28.9	15.6	22.1	2.0	35.6	18	5.0	6	13	0	9.4	52	1	- 15	1	2	2	0	0	5.6	ESE	13.9*	N	5	11	7	13	5.7	
LUBBOCK	988	902.1	1014.2	20.6	2.8	11.7	1.9	32.2	28	- 6.7	7+	1	9	- 2.2	44	19	0	11	2	2	T	T	7.3	SSE	19.7*	SW	10	12	10	9	4.5	
MIDLAND	870	914.0	1013.0	22.8	6.7	14.8	1.9	35.0	29	- 2.8	5	2	5	- 1.7	39	T	- 9	T	0	0	0	0	6.0	S	17.9*	WNW	10	15	9	7	4.2	
PORT ARTHUR	5	1015.9	1017.6	24.4	11.7	18.0	2.1	28.9	12	- 0.6	6	0	1	12.2	75	5	- 82	3	4	0	0	0	5.1	SSE	17.9	S	4	7	10	14	6.2	48
SAN ANGELO	580	947.2	1014.3	25.6	8.9	17.0	3.4	34.4	29	- 1.1	7+	4	4	1.7	41	T	- 24	T	0	0	0	0	5.2	SSE	13.0*	SSE	10	16	4	11	4.6	
SAN ANTONIO	241	990.7	1015.9	25.6	12.2	18.7	2.6	31.7	30	0.0	6	0	1	8.3	58	5	- 37	3	7	0	0	0	4.7	SSE	16.5	N	5	8	8	15	5.9	61
VICTORIA	32	1012.0		25.0	13.3	19.1	1.8	30.6	12	2.2	6	0	0			6	- 53	3	5	0	0	0	5.4		21.0Y		5	4	10	17	6.8	
WACO	152	995.2	1016.6	24.4	10.0	17.3	2.9	30.6	30	- 1.1	6	0	1	6.7	55	19	- 40	19	2	2	T	T	6.9	SSE	15.6*	NW	5	8	10	13	5.9	
WICHITA FALLS	303	978.0	1015.4	22.2	6.1	14.2	2.6	32.8	29	- 3.3	6	2	4	2.2	50	60	21	49	6	5	T	T	5.0	S	12.5*	W	12	11	10	10	5.0	
UTAH																																
MILFORD	1533	841.7		11.7	- 5.6	3.1	-0.6	21.7	27	-12.8	5	0	29			21	- 5	7	7	0	183	76						8	10	13	6.0	
SALT LAKE CITY	1286	866.3	1016.0	10.6	- 2.2	4.1	-0.6	21.1	27	-12.2	16	0	24	- 5.6	54	54	14	23	7	1	406	178	4.8	S	19.2	S	28	10	7	14	5.9	66

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MARCH 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .25 mm. or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
UTAH	M.	Mb.	Mb.	C.	°C.	C.	C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.					M.p.s.		M.p.s.							%
WENDOVER	1291	868.6		10.6	- 0.6	5.1	-0.2	20.0	31+	- 6.1	16+	0	19			4	- 6	1	4	0	20	T						11	5	15	5.4	
VERMONT																																
BURLINGTON	101	1000.0	1015.1	2.8	- 9.4	- 3.3	-1.8	16.1	26	-22.8	16	0	27	- 7.8	66	60	6	13	14	0	546	533	3.9	S	21.9	S	6	5	10	16	7.0	53
VIRGINIA																																
LYNCHBURG	289	993.6		16.1	3.9	10.0	2.5	27.8	30	- 2.8	23+	0	8			116	24	33	9	0	T	T	3.9		17.4	W	6	12	6	13	5.5	60
NORFOLK	8	1016.4	1017.9	17.8	6.1	11.9	3.0	27.8	30	- 1.1	3	0	1	3.9	63	76	- 12	28	10	0	T	T	6.1	SW	25.5	W	6	9	9	13	5.7	61
RICHMOND	49	1011.1	1017.5	17.2	3.9	10.4	2.3	27.2	30	- 3.9	3	0	5	1.7	59	143	56	44	9	2	T	T	4.3	SW	16.5	W	6	8	11	12	5.6	61
ROANOKE	358	974.8	1017.6	16.1	3.9	9.8	2.3	29.4	30	- 3.3	3	0	9	0.0	55	99	9	29	10	0	18	T	5.2	WNW	15.6*	WSW	6	9	11	11	5.8	
WASHINGTON																																
OLYMPIA	58	1009.1	1016.2	11.1	0.0	5.6	-1.2	18.3	21	- 5.0	3	0	17	2.2	80	130	- 8	45	19	1	T	T	3.3	SSW	13.0*	W	11	1	7	23	8.3	
SEATTLE TACOMA	122	1001.4	1015.5	10.6	2.8	6.6	0.0	17.8	21	- 2.2	6	0	6	2.2	78	87	- 9	24	18	1	T	T	4.2	SSW	15.6*	SW	28	4	6	21	7.8	
SEATTLE U	4			11.7	5.0	8.2	0.2	17.2	21	1.7	6+	0	0			76	- 9	26	16		T	T										47
SPOKANE	718	944.8	1014.1	10.0	0.0	4.8	1.4	17.8	21	- 5.6	4+	0	18	- 2.2	65	42	- 4	13	8	1	30	T	4.6	SW	17.9	SW	27	3	10	18	7.5	58
STAMPEDE PASS R	1206	875.7		2.8	- 2.8	0.0	1.1	11.1	8	- 5.6	3	0	28			204	- 65	33	19		1656	1829						5	3	23	7.8	
TATOOSH ISLAND	31	1011.9	1014.6	8.9	3.9	6.6	-0.2	13.3	21	0.6	30	0	0	3.3	80	163	- 49	28	19	0	T	T	7.6	ENE	27.3	S	21	6	3	22	7.5	55
WALLA WALLA U	289	978.5		13.9	3.9	8.8	1.0	22.8	21	- 0.6	4+	0	2			20	- 21	10	8	0	0	0	2.7	WNW	20.6	W	28	7	7	17	6.7	49
YAKIMA	323	975.3	1014.8	13.3	- 0.6	6.4	0.9	20.6	20	- 6.7	13	0	17	- 1.7	59	21	6	10	5	0	T	T	3.6	WNW	18.3*	SSW	28	7	7	17	6.5	
WEST INDIES																																
SAN JUAN P.R.	5	1014.9	1017.9	28.9	20.6	24.6	0.6	30.6	29+	17.8	20	0	0	19.4	75	119	63	52	17	0	0	0	4.4	ENE	13.0	NE	26	4	20	7	6.1	75
SWAN ISLAND	9	1013.4		28.9	23.9	26.6	-0.1	30.0	8	20.6	24	0	0			102	86	51	13		0	0						11	13	7	5.1	
WEST VIRGINIA																																
CHARLESTON	286	980.8	1016.9	16.1	3.3	9.7	2.8	27.8	29	- 6.1	23	0	6	1.7	64	162	52	38	14	1	T	T	3.9	WSW	13.4*	SW	6	6	6	19	7.2	
ELKINS	600	946.6	1017.0	12.8	- 1.7	5.6		24.4	30+	-10.0	3	0	23	0.0	74	225		75	18	5	127	127	4.2	WNW	17.9*	WNW	20+	3	7	21	7.6	
HUNTINGTON U	252	986.5	1017.0	16.7	4.4	10.4		28.9	29	- 4.4	23+	0	7	1.1	59	192	86	50	15	3	10	T	3.9	WSW	13.4	N	4	6	7	18	7.2	
PARKERSBURG U	187			14.4	2.8	8.4	2.4	27.8	29	- 4.4	23	0	11			248	158	88	15	2	3	T	3.8		13.9	W	20					42
WISCONSIN																																
GREEN BAY	208	991.2	1014.6	5.0	- 6.7	- 1.1	1.3	22.2	30	-19.4	9	0	25	- 3.3	84	66	31	16	14	4	338	254	3.7	SW	16.1	NW	20	6	7	18	7.1	52
LA CROSSE	199	989.2	1014.4	7.2	- 3.3	2.0	2.8	24.4	30	-16.1	9+	0	20	- 3.3	71	57	5	18	14	1	363	229	4.8	S	12.5*	NW	20	6	8	17	6.9	
MADISON	262	978.0	1014.4	6.7	- 4.4	1.1	2.4	23.9	30	-21.7	1	0	26	- 3.9	70	59	12	18	12	2	325	229	4.4	S	13.9	NW	20	5	8	18	7.3	47
MILWAUKEE	205	989.2	1014.7	6.1	- 2.8	1.8	2.3	23.3	29	-18.3	1	0	24	- 2.2	74	56	- 3	17	13	1	180	127	5.4	NNE	18.8	S	29	4	7	20	7.5	49
WYOMING																																
CASPER	1621	833.3	1013.9	7.8	- 5.0	1.6	1.5	19.4	31	-16.1	13	0	26	- 7.8	56	9	- 17	3	6	0	127	51	6.3	SW	20.1*	SW	28	10	10	11	5.7	
CHEYENNE	1867	809.1	1015.0	6.7	- 6.7	- 0.1	-0.1	22.2	28	-22.8	5	0	26	- 8.3	58	19	- 12	9	10	0	300	152	6.5	WNW	27.7	W	28	14	7	10	4.6	77
LANDER	1696	831.2	1013.9	7.8	- 6.1	0.8	0.7	18.3	31+	-18.9	13	0	27	- 8.3	55	43	14	24	8	0	757	356	2.9	SW	17.9	N	1	14	7	10	5.1	86
SHERIDAN	1202	881.1	1014.0	10.6	- 3.9	3.4	3.9	21.7	28+	-15.0	13	0	27	- 6.7	52	14	- 22	8	7	0	170	76	4.3	WNW	29.5	SW	28	5	10	16	6.7	62

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
* Value entered in column headed "Fastest Mile" is the highest observed wind speed. This station is not equipped with an automatic recording wind instrument.
A Maximum hourly average.
\+ And also on an earlier date or dates.
Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.
B Number of days maximum 21.1°C. or above for Alaskan Stations.
Wind direction to 8 compass points only.
Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.) MARCH 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	225	2896	2631
Huntsville	281	3339	2913
Mobile	108	1880	1608
Montgomery	185	2562	2201
ALASKA			
Anchorage	1266	8470	9078
Annette	746	4701	5655
Barrow	2630	15341	15828
Barter Island	2524	14861	15642
Bethel	1543	10228	10815
Cold Bay	940	6983	7550
Cordova	1118	7158	7796
Fairbanks	1777	11661	12434
Juneau	1023	6683	7283
King Salmon	1289	8628	9296
Kotzebue	2212	12217	12858
McGrath	1738	11906	12255
Nome	1783	10832	11354
St. Paul	1101	8211	8433
Shemya	960	6891	7253
Yakutat	1036	6689	7185
ARIZONA			
Flagstaff	940	5509	5761
Phoenix (U)	123	992	
Phoenix	151	1223	1541
Prescott	637	3443	3829
Tucson	234	1450	1792
Winslow	591	4031	4302
Yuma	74	662	863
ARKANSAS			
Ft. Smith	317	3296	3126
Little Rock	258	3151	3084
Texarkana	186	2584	2428
CALIFORNIA			
Bakersfield	276	1846	1998
Bishop	629	3414	3790
Blue Canyon	879	3779	4392
Burbank	272	1248	1409
Eureka (U)	484	3272	3548
Fresno	356	2186	2381
Long Beach	275	1137	1515
Los Angeles (U)	202	988	1140
Los Angeles	255	1118	1603
Mt. Shasta (R)	782	4286	4691
Oakland	379	2264	2345
Point Arguello (R)	430	2680	2715
Red Bluff	434	2229	2300
Sacramento (U)	371	2136	2170
Sacramento	428	2394	2252
Sandberg (R)	744	3120	3462
San Diego	227	1078	1191
San Francisco (U)	332	2260	2303
San Francisco	399	2468	2396
San Jose (U)	323	1753	
Santa Catalina	361		
Santa Maria	423	2244	2287
Stockton	418		
COLORADO			
Alamosa	1011	7065	7225
Colorado Springs	817	4992	5492
Denver	748	5080	5115
Grand Junction	708	5087	5087
Pueblo	703	4705	4844
CONNECTICUT			
Bridgeport	811	5373	4872
Hartford	890	6235	5478
Middletown	890	6092	
New Haven	821	5447	5064
DELAWARE			
Wilmington	641	4942	4425
DIST. OF COLUMBIA			
Washington (U)	455	4172	
Washington	505	4306	3862
FLORIDA			
Apalachicola (U)	104	1540	1275
Daytona Beach	73	1078	864
Fort Myers	13	427	442
Jacksonville	90	1486	1218
Key West	0	79	108
Lakeland (U)	33	797	661
Miami	6	246	214
Miami Beach	1	122	141
Orlando	33	831	773
Pensacola (U)	134	1761	1409
Tallahassee	151	1849	1449
Tampa	37	818	683
West Palm Beach	9	337	253
GEORGIA			
Athens	251	3069	2766
Atlanta	272	3255	2789
Augusta	206	2648	2307
Columbus	201	2597	2287
Macon	167	2455	2073
Rome	324	3558	3115
Savannah	168	2163	1774
Thomasville (U)	116	1800	1496
IDAHO			
Boise	636	4598	5032
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	950	6544	7241
Idaho Falls 42NW(R)	964	6837	7523
Lewiston	609	4607	4787
Pocatello	824	5489	6026
ILLINOIS			
Cairo (U)	355	3966	3579
Chicago (Midway)	720	5895	5386
Chicago (O'Hare)	776	6297	
Moline	734	6332	5700
Peoria	723	6106	5383
Rockford	819	6537	6018
Springfield	630	5515	4981
INDIANA			
Evansville	471	4753	4202
Ft. Wayne	757	6054	5511
Indianapolis	691	5646	5051
South Bend	813	6267	5618
IOWA			
Burlington	672	5867	5478
Des Moines	787	6216	5864
Dubuque	862	6843	6492
Sioux City	745	6096	6259
Waterloo	859	6821	6422
KANSAS			
Concordia	611	4992	4853
Dodge City	539	4362	4499
Goodland	727	5069	5356
Topeka	544	4854	4716
Wichita	463	4286	4257
KENTUCKY			
Lexington	495	4704	4253
Louisville	476	4651	4295
LOUISIANA			
Alexandria	193	2383	
Baton Rouge	98	1747	1581
Lake Charles	117	1760	1452
New Orleans	73	1323	
(Audubon Park)			
New Orleans	91	1762	1427
Shreveport	162	2302	2130
MAINE			
Caribou	1390	8557	8258
Greenville (U)	1291	8321	
Portland	1019	6669	6353
MARYLAND			
Baltimore (U)	521	4234	3758
Baltimore	583	4826	4237
Frederick	647	5212	4564
MASSACHUSETTS			
Blue Hill Obs. (R)	892	5878	5453
Boston	798	5202	4877
Nantucket	837	5007	4840
Pittsfield	988	6897	6487
Worcester	953	6386	5975
MICHIGAN			
Alpena	1216	7764	6846
Detroit (City AP)	838	6047	5454
Detroit	866	6294	5615
(M. Wayne Co.)			
Detroit	863	6258	5465
(Willow Run)			
Escanaba (U)	1194	7604	7089
Flint	941	6769	6065
Grand Rapids	911	6355	5961
Lansing	924	6640	5988
Marquette (U)	1150	7569	6977
Muskegon	940	6309	5957
S. Ste. Marie	1296	8157	7724
MINNESOTA			
Duluth	1159	8510	8442
Internat. Falls	1200	8986	9161
Minneapolis	946	7429	7420
Rochester	1003	7364	7167
St. Cloud	977	7589	7782
MISSISSIPPI			
Jackson	179	2508	2152
Meridian	200	2710	2208
Vicksburg (U)	146	2349	1972
MISSOURI			
Columbia	519	4851	4589
Kansas City	490	4583	4435
St. Joseph	593	5165	4988
St. Louis (RFC)	453	4445	4127
St. Louis	507	4762	4404
Springfield	420	4362	4159
MONTANA			
Billings	750	5389	6062
Butte	915	7410	
Glasgow	830	6731	7863
Great Falls	788	5727	6380
Havre	819	6467	7498
Helena	842	6259	6902
Kalispell	855	6612	7342
Miles City	758	6160	6774
Missoula	808	6643	6894
NEBRASKA			
Grand Island	764	6027	5550
Lincoln (U)	642	5316	5261
Norfolk	734	6019	6200
North Platte	745	5711	5860
Omaha	681	5549	5619
Omaha N. Omaha AP	726	5850	6025
Scottsbluff	833	5536	5836
Valentine	774	5995	6474
NEVADA			
Elko	920	5721	6218
Ely	1007	5740	6380
Las Vegas	337	2169	2535
Reno	750	4797	5074
Tonopah	840	4516	
Winnemucca	852	5190	5672
NEW HAMPSHIRE			
Concord	966	6602	6374
Mt. Washington Obs. (R)	1603	11519	11027
NEW JERSEY			
Atlantic City	596	4594	4244
Atlantic City (U)	622	4429	
Newark	691	4847	4520
Trenton (U)	664	4911	4448
NEW MEXICO			
Albuquerque	605	4010	3934
Clayton	636	4348	4528
Raton	787	5162	5321
Roswell	450	3626	3788
Silver City	533	3291	
NEW YORK			
Albany	968	6558	6027
Binghamton	911	6711	6322
Buffalo	907	6341	6131
New York (U)	653	4758	4327
New York	720	4844	4267
(LaGuardia)			
Rochester	902	6310	5824
Schenectady	941	6312	
Syracuse	948	6366	5893
NORTH CAROLINA			
Asheville (U)	426	4047	3682
Cape Hatteras (R)	314	2711	2410
Charlotte	333	3475	2950
Greensboro	420	3888	3524
Raleigh	354	3596	3179
Wilmington	243	2701	2251
Winston-Salem	379	3760	3351
NORTH DAKOTA			
Bismarck	890	7177	7890
Devils Lake (U)	1100	8146	8629
Fargo	1112	7675	8150
Grand Forks CAA	1075	7689	
Pembina	1136	7953	
Williston (U)	905	7169	7848
OHIO			
Akron	786	5993	5509
Cincinnati (U)	507	4505	
Cincinnati	619	5302	4528
Cincinnati Obs.	546	4891	4343
Cleveland	793	5961	5554
Columbus	683	5780	4848
Columbus (U)	641	5227	
Dayton	688	5618	4980
Mansfield	796	6165	5555
Sandusky (U)	795	5792	5067
Toledo	859	6338	5649
Youngstown	817	6295	5409
OKLAHOMA			
Oklahoma City	372	3551	3581
Tulsa	343	3557	3443
OREGON			
Astoria	612	3883	4140
Burns (U)	856	5378	5844
Eugene	589	3742	3886
Meacham	942	6083	6282
Medford	645	4167	4007
Pendleton	598	4228	4569
Portland (U)	520	3209	3482
Portland	606	3653	3889
Roseburg	572	3488	3696
Salem	630	3927	3862
Sexton Summit (R)	875	4531	4949
PENNSYLVANIA			
Allentown	783	5723	5148
Erie	839	5989	5518
Harrisburg	666	5241	4673
Philadelphia (U)	566	4458	
Philadelphia	680	5025	4594
Pittsburgh (U)	611	5075	4527
Pittsburgh	747	5948	5273
Reading (U)	647	5012	4468
Scranton	820	6115	5663
Williamsport	803	5942	5265
RHODE ISLAND			
Block Island	860	5168	4686
Providence	805	5405	5133
SOUTH CAROLINA			
Charleston (U)	160	2101	1752
Charleston	172	2360	1963
Columbia	208	2732	2403
Florence	207	2750	2303
Greenville-Spartanburg	306		
SOUTH DAKOTA			
Huron	781	6779	7056
Pierre	746	6064	
Rapid City	776	5749	6278
Sioux Falls	803	6569	6918
TENNESSEE			
Bristol	454	4321	3880
Chattanooga	314	3663	3171
Knoxville	312	3717	3328
Memphis (U)	271	3189	2870
Memphis	291	3324	2965
Nashville	358	3890	3349
Oak Ridge	387	4084	3503
TEXAS			
Abilene	207	2445	2510
Amarillo	450	3643	3832
Austin	109	1761	1660
Brownsville	17	690	600
Corpus Christi	36	1136	914
Dallas	170	2330	2267
Del Rio (U)	71	1434	
El Paso	279	2476	2473
Ft. Worth	185	2412	2306
Galveston (U)	75	1349	1205
Galveston	82	1428	1241
Houston (U)	49	1256	1248
Houston	88	1432	1254
Laredo	28	989	797
Lubbock	378	3274	3346
Midland	233	2463	2501
Port Arthur	102	1659	1481
San Angelo	161	2124	2146
San Antonio	87	1577	1510
Victoria	68	1375	1152
Waco	136	2057	1964
Wichita Falls	281	2722	2810
UTAH			
Milford	843	5263	5612
Salt Lake City	787	5145	5102
Wendover	734	4990	5142
VERMONT			
Burlington	1204	7584	6724
VIRGINIA			
Lynchburg	461	4234	3821
Norfolk	357	3519	3168
Richmond	434	3878	3612
Roanoke	470	4266	3824
WASHINGTON			
Olympia	705	4387	4302
Seattle (U)	556	3354	3669
Seattle	588	3619	4086
Seattle-Tacoma	651	4053	4293
Spokane	748	5527	5786
Stampede Pass (R)	1016	6965	7291
Tatoosh Island (R)	648	4286	4430
Walla Walla	557	4189	
Walla Walla (U)	526	4005	4241
Yakima	658	4915	5217
WEST VIRGINIA			
Charleston	476	4725	4027
Huntington (U)	438	4737	3831
Parkersburg (U)	549	4936	4294
WISCONSIN			
Green Bay	1079	7320	7087
La Crosse	906	6906	6735
Madison	957	7187	6741
Milwaukee	915	6850	6486
WYOMING			
Casper	928	5926	6243
Cheyenne	1023	5896	6101
Lander	970	6268	6682
Sheridan	827	6001	6522

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

MARCH 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama	10	4	2	54	7					0	0	5	0													1	1	6	5
Alaska										0	0	5	0																
Arizona										0	0	4	0																
Arkansas	1	1	0	0	4					0	0	4	3																
California										0	N	5	0																
Colorado										0	few	°5	C					4	few	0	0								
Connecticut *																													
Delaware *																													
Florida						0	0	4	4	0	0	3	0																
Georgia	4	3	0	2	5																					0	2	5	3
Hawaii										0	0	4	0													0	1	5	4
Idaho *																													
Illinois	1	1	0	0	4					1	0	°5	C													1	0	3	?
Indiana	6	2	2	0	6	0	?	6	3	0	0	4	0	1	0	4	0												
Iowa	4	1	0	0	4																								
Kansas											12																		
Kentucky	1	1	0	10	4					0	0	4	0													2	?	7	0
Louisiana *																													
Maine										0	0	3	0													0	0	F5	0
																										0	0	S3	0
Maryland *																													
Massachusetts																		0	0	4	0					0	0	F5	0
																										0	0	S4	0
Michigan						0	0	4																					
Minnesota *																													
Mississippi	4	1	2	12	5					0	4	5	0																
Missouri	3	1	0	0	4	0	0	5	0	0	4	5	0	3	0	5	0					0	0	4	0				
Montana *																													
Nebraska										0	0	4	0					0	0	4	0								
Nevada N																													
New Hampshire																										0	0	4	0
New Jersey *																													
New Mexico										0	N	5	0																
New York												5								5				4				5	
North Carolina										1	1	5	0	0	0	4	0									0	0	5	0
North Dakota *																													
Ohio *																													
Oklahoma	3	3	0	0	4	0	0	°5	C	0	1	5	0	0	0	5	0												
Oregon										0	6	6	1	0	0	4	1												
Pacific Area *																													
Pennsylvania	1	1	0	0	4					0	0	5	0																
Puerto Rico *																													
Rhode Island *																													
South Carolina																										1	0	5	0
South Dakota																		0	?	4	0	0	?	W4	0				
Tennessee	9	2	1	19	6	0	0	4	3	0	1	6	4	0	0	4	0									0	3	6	5
Texas	3	2	0	0	5	0	0	5	?	0	0	3	?																
Utah N																													
Vermont																		0	0	3	0					0	0	T3	0
																										0	0	R4	0
U.S. Virgin Is. *																													
Virginia										1	?	?	?													1	?	6	?
Washington *																													
West Virginia																										7	?	?	
Wisconsin						0	0	3	0																				
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
N Report not received.
° Includes crop damage.
C Crop Damage
F Flood
S Snow accumulation
W Wind was also a contributing factor.
T Temperature and rain effects.
R River floods.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

MARCH 1963

Destructive floods occurred in the Ohio Basin during March. The Guyandot and Tug Fork Rivers in West Virginia reached the highest stages of record. Crest stages in the headwaters of the Kentucky Basin were only 2 feet below the record flood of 1957. Major flooding occurred in the upper Cumberland Basin in southeastern Kentucky and on Stones and Harpeth Rivers in Tennessee. Small streams in Woodbury, Tenn., were the highest since 1902. The main stem of the Ohio was above flood stage for 22 consecutive days at Cincinnati, Ohio, the longest consecutive period on record. Parts of West Virginia, Virginia, and Kentucky were declared Disaster Areas by the President. At least 17 persons lost their lives and damages were estimated in the tens of millions.

ST. LAWRENCE DRAINAGE

Lake Erie.--Moderate to locally heavy rains and snowmelt from snow depths averaging 4 to 8 inches over the entire Maumee Basin and over deep, hard frozen ground, caused above flood stage readings at all gaging points excepting at Grand Rapids, Ohio. Flooding was minor and affected mainly farmlands along the St. Marys, the St. Joseph, and the Auglaize and Blanchard Rivers. Numerous ice jams occurred along the Maumee River. The only damage of importance occurred at Napoleon, Ohio. As the ice broke up, an ice jam formed below the city and caused a rise to near or slightly above 14.9 feet (flood stage 10 feet) on the 8th. Normal pool of the dam extends upstream through the city of Napoleon. Many families were affected by the flood and found it necessary to move their furniture.

Mild weather during the last 3 weeks of March caused local flooding at Sunset Bay, along the south shore of Lake Erie just west of the mouth of Cattaraugus Creek. The peak was during the period from the 17th to the 19th. An ice jam at the mouth of the creek caused the waters to back up, flooding some 400 cottages with up to 5 feet of water and possibly destroying 6 of the cottages. Many of these cottages were moved off their foundations by huge chunks of ice. An adjacent trouble spot was Evans, N. Y., where an ice jam caused Big Sister Creek to overflow. A rise of 4 feet forced some evacuations of homes. In East Aurora, N. Y., on the 17th, ice jams sent Tannery Brook over its banks, flooding several streets and numerous basements. Many families were forced to leave their homes.

Heavy rain, 1.6 inches, from the 4th to the 6th caused flooding on the Sandusky River at Upper Sandusky and Fremont, Ohio, beginning on the 6th. The flooding continued until the 10th at Fremont. The cold winter season had frozen the ground to a considerable depth and formed very heavy ice over the entire length of the Sandusky. Ice jams formed on some of the tributaries, producing large bodies of water which were still in evidence a week after the crests had been reached. Industrial and community damages were held to a minimum through precautionary measures.

Lake Ontario. --There were two periods of flooding in the Lake Ontario Drainage during March. The first was due to generally light rain during the 24-hour period ending on the morning of the 17th, plus snowmelt. Canaseraga Creek overflowed its banks at Groveland, N. Y., by 2 feet on the 17th. Valley roads were affected. Oatka Creek was in flood from the 18th to the 21st, with a crest of 5.9 feet (flood stage 5 feet) at midnight on the 18th and 19th. Black Creek overflowed its banks at Churchville, N. Y., by over 2 feet on the 18th and was in flood from the 17th to the 21st. Minor flooding occurred on the Genesee River at Scio, N. Y., and Rochester, N. Y. Minor flooding occurred again on Canaseraga and Oatka Creeks and on the Genesee River at Scio, N. Y., between the 26th and 28th.

ATLANTIC SLOPE DRAINAGE

During the first 3 weeks of March, Maine's large rivers remained at their low winter levels. Warm weather toward the end of the month started a general increase in river flows. Lack of previous thawing weather had allowed snow deposits to build up to well over 4 feet deep in up-river areas. Snow depths had decreased to 2 or 3 feet on most interior uplands by the end of the month and snow had almost disappeared in southernmost coastal sections of Maine. Water content of the snow measured as high as 7 to 16 inches on March 31. Ice on the rivers did not develop as thick or as strong as is customary during the winter. At the end of the month, there was considerable open water on the swifter-moving portions of the southern rivers, but ice was still intact on most northern rivers.

The Nashua River at East Pepperell, Mass., exceeded flood stage on the 29th and 30th due to melting snow. The flood caused no damage, but low-lying mills were on the alert and had some of their pumps in operation. No flood stages were reached at any station on the Merrimack River. Tributaries in Massachusetts were running near bankfull as the month ended.

Continued thawing of the snowpack after the first week caused a continuous rise of the Charles River to near bankfull at Charles River Village, Mass., on March 19. Except for slight fluctuations it remained near 3.7 ft. (flood stage 4 feet) until the end of the month.

On March 26, high temperatures caused rapid snowmelt and smaller streams in Vermont to overflow their banks. Otter Creek near Weybridge and Vergennes and the Lemon Fair near its confluence with the Otter were out of banks for 12 to 18 hours.

Spring began with above normal snow cover and water equivalents in central and northern New England. Warm temperatures the last week of March caused considerable snowmelt runoff. Smaller streams and brooks ran full with some minor overflowing of their banks on the 27th. The Housatonic River in Connecticut crested 0.9 foot above flood stage at Gaylordsville, Conn., with only minor overflow. The Connecticut River showed appreciable rises, but remained below flood stage at all points. Normal lowland flooding of marshes and meadows along the Connecticut River particularly in southern Massachussetts and Connecticut began about the 29th and continued into April.

Light to moderate rainfall over central New Jersey on the 4th and 5th, followed by heavy rain on the 6th caused the highest stages on the Raritan and Assunpink Watersheds in about a year. Some blocking of roads was reported in the Manville-Boundbrook area. Otherwise little or no damage resulted from the flooding.

There was up to 2 inches of snow on the ground in sections of southeastern Pennsylvania during the first few days of March. The ground was generally frozen except for

surface thawing where the ground was bare. There was high runoff from the moderate rain on the morning of the 5th to which was added some snowmelt in the headwaters of the streams. This resulted in some overflow of the upper Brandywine and near bankfull conditions downstream as far as Chadds Ford. Similar conditions existed on the Perkiomen and Neshaminy Creeks with these creeks running almost bankfull in their upper reaches. Additional rain on the 6th resulted in a repetition of conditions on the Brandywine and Perkiomen and minor flooding on the Neshaminy.

During the first part of March there were from 15 to 30 inches of snow on the ground over the upper Delaware Basin in New York. This had generally dwindled to 3 to 6 inches by the 25th when a period of unseasonably warm weather began. Rain (0.40 to 0.70 inch) during the night of the 26th-27th added to the melting snow resulted in a rapid rise of the East and West Branches of the Upper Delaware to above flood stage on the 27th. The rise on the 27th completely cleared the East Branch of ice. Downstream there was a significant rise of the Delaware on the 27th and 28th, but stages were generally 5 to 7 feet below flood stage at reporting points.

Slight to moderate overflows occurred along the Susquehanna River in New York and Pennsylvania and tributaries in New York towards the end of the month due to snowmelt. The water content of the snow cover on the 24th was estimated at 2 to 3 inches. Temperatures were in the upper 60's on the 24th and 25th and reached the low 70's on the 26th, causing rapid snowmelt and resulting overflows. Precipitation on the 27th had little affect on the rise. Slight overflows occurred on the Chemung on the 17-18th and again on the 26th and 27th.

The flooding on the Juniata River at Newport, Pa., on the 6th was due to an ice jam on the lower portion of the river. Streams were ice-covered at the beginning of the month. Rainfall on the 5th averaging 1.20 inches above Newport, Pa., started the ice to move and an ice jam to form about 2 or 3 miles downstream from Newport. Some minor flooding occurred in the city, but most of the damage was caused as the ice jam broke and moved downstream. The highest water levels occurred in the Amity Hall area near the mouth of the Juniata where an ice jam formed and held in January. This was the worst flood in the memory of residents along the Juniata River.

A period of moderate to heavy rain on the 5th and 6th resulted in sharp rises along the entire length of the Potomac River with light flooding on the North Branch at Cumberland, Md., on the 5th and in the lower Potomac near Washington, D. C., on the 7th and 8th. Snow cover in the basin was light and contributed very little to the runoff. Moderate to strong rises occurred again in the Potomac and Rappahannock Basins between the 12th and 15th following heavy rains on the 12th, but flood level was not reached at any reporting station. Minor flooding occurred on the North and South Branches of the Potomac as well as the mainstem from the heavy rain on the 20th. This was the largest rise in the Potomac Basin since August 1955. There were no reports of any significant damage.

Serious flooding occurred throughout most of the James River Basin in Virginia during the period from the 12th to the 17th. Crest stages ranged from 3 to 8 feet above flood stage. This was the most extensive flooding in the James Basin in many years. This flooding was due to rainfall of about 30 to 36 hours duration from the morning of the 11th to the afternoon of the 12th. The rainfall averaged 2.8 inches on the Maury above Buena Vista and near 3 inches on the James above Lickrun. The rainfall tapered off downstream to near 1.3 inches at Richmond, Va. Rainfall over the Rivanna Basin averaged 2.4 inches. There were 6 deaths due to drowning in the James and its tributaries. Operations in Richmond harbor were suspended for several days during the high water. There were numerous industrial shutdowns of 1 to 3 days at and above Lynchburg, Va. A trailer park had to be evacuated at Buchanan, Va., and at Covington, Va. Many people left their homes. Many highways throughout the James Basin were closed for brief periods with little damage resulting.

A series of rains, ranging from light to locally heavy in eastern North Carolina, kept the ground wet throughout March and caused a rather unusual number of occurrences of minor flooding. Rains on the 5th and 6th ranging from 1 to 2.5 inches were sufficient to cause near bankfull stages on the Dan, Tar, and portions of the upper Roanoke Rivers and from 1 to 3 feet above bankfull on the Neuse and Cape Fear Rivers. Rains on the 11th and 12th averaging from 1 1/2 to 3 1/2 inches caused sharp rises on all rivers. Stages ranged from bankfull to about 4 feet above bankfull on the Roanoke, Dan, Neuse, and portions of the Tar Rivers. Rains (1 inch or less) on the 17th caused another rise with crests about the same as the previous rise. Rainfall during the night of the 19th prolonged the minor flooding on the Neuse and Cape Fear Rivers.

Considerable flooding occurred along the Yadkin-Pee Dee system in the Carolinas during March. Heavy rain on the 5th and 6th (1.5 to 2.7 inches) caused the Rocky River to rise 17 feet in 11 hours, to crest slightly over 6 feet above flood stage on the 6th. A rapid rise followed downstream on the Pee Dee. At Cheraw, S. C., the river rose from 12 feet to near 35 feet on the 8th, 5 feet above flood stage. The lower portion of the stream at Peedee, S. C., rose out of its banks on the 8th to continue in flood most of the month. Very heavy rain (4 to 5 inches) on the 11th and 12th caused the Yadkin to rise rapidly from 4 feet on the 12th to 27 feet (flood stage 18 feet) on the 13th. This was the highest stage reached at this point since August 15, 1940, when it reached a crest of 33.8 feet. The reservoir prevented flooding at Wilkesboro, N. C., and filled to highest elevation of 1045.7 feet on the 13th. This was 15.7 feet above normal pool, but well below the top of flood control pool. The highest stage reached at Wilkesboro was slightly over 10 feet on the 12th (flood stage 14 feet) and the highest stage since control began. The Rocky River rose rapidly on the 12th at Norwood, N. C., cresting near 24 feet on the 13th, 8 feet above flood stage. Flooding followed shortly on the Pee Dee at Cheraw, S. C., cresting near 38 feet on the 15th, 8 feet above flood stage, the highest since January 1962. It is likely that some crop loss occurred in the vicinity of Yadkin College on the Yadkin

All branches of the Santee River System in South Carolina experienced flooding during the first week of the month and again at midmonth. There was considerable flooding of lowlands along the lower Santee, but more extensive flooding was prevented by the control of Lake Marion. Because of the unusually high crests and the

condition of the two flood periods occurring so close together, the flooding was extensive and prolonged. The flooding was due to heavy rains on the 5th and 6th, with amounts up to 4 inches. These rains saturated the soil and brought most reservoirs to full or near full stages. Rains up to 3 inches on the 12th and 13th falling on wet soil produced a high degree of runoff with general flooding.

A slow rise on the Savannah River reached flood stage at Clyo, Ga., on the 13th and Millhaven, Ga., on the 19th. The river remained above flood stage at Millhaven until the 27th. At Clyo the river continued above flood stage into April. Damages were confined to the removal of livestock from swamplands and time losses by lumbering interests.

The Ocmulgee and Oconee Rivers rose to above flood stage at Macon and Milledgeville, Ga., on the 13th and continued in flood at these points until the 15th. Although the crest at Milledgeville was considerably above flood stage, only lowlying areas outside of the city were affected. The same applies to Macon. Flooding at other points on these streams was minor. The Altamaha River was above flood stage at Charlotte, Ga., from the 23d to the 26th. The crest on the Satilla River at Atkinson, Ga., in the beginning of the month was flat and remained above flood stage for 5 days.

EAST GULF OF MEXICO DRAINAGE

Heavy rainfall over northwest Georgia, ranging from 1.16 inches at Cartersville, Ga., to 4.97 inches at Ellijay on the morning of the 6th, caused flooding on the Oostanaula River at Resaca, Ga., from the 7th to the 10th. Additional heavy rainfall over northwest Georgia on the morning of the 13th, ranging from 1.29 inches at Dalton to 4.92 inches at Woodstock, caused moderate to heavy flooding on the Oostanaula and Etowah Rivers in Georgia. Heavy rainfall amounts were reported in Alabama on the morning of the 12th, with 24-hour rainfall amounts of 5.34 inches at Huntsville, Ala., and 4.08 inches at Muscle Shoals, Ala. The USGS reported a maximum discharge of 49,600 c.f.s. on Paint Rock River near Woodville, Ala., on the 12th, which exceeded the previous maximum discharge of 31,300 c.f.s. set in December 1942. A maximum discharge of 60,000 c.f.s. was recorded on the Flint River near Chase, Ala., on the 12th, exceeding the maximum discharge of 42,000 c.f.s. (January 1954) since this station was opened in 1929. Moderate flooding occurred on the Coosa River at Gadsden, Ala., from the 13th to the 20th.

Heavy rains on the 12th and 13th caused rapid rises with minor flooding in the upper Tombigbee in Mississippi between the 12th and 18th. Minor flooding occurred a week earlier at Amory, Miss., due to moderate rainfall causing some soil saturation. Very little damage resulted from the overflows.

Moderate rain on the 1st caused minor flooding on the Pearl River at Bogalusa, La., on the 7th and 8th. Light to moderate rain between the 10th and 16th caused additional flooding on the Pearl at Bogalusa from the 15th to the 22d. No damage was reported.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Snowfall was near normal during March and fell generally on the 18-19th. Because snowfall was light this season and temperatures were very cold in January and early February, frost depth penetration, with the exception of northeast Wisconsin, averaged 18 to 30 inches deeper than that of last year. Frost depth on February 15 ranged from near 75 inches in north-central Minnesota to 42 inches in southwest Minnesota, 30 inches southeast Minnesota, 36 inches central Wisconsin to 12 inches northeast Wisconsin. The water content of the snows as of March 1, was low as compared to March 1, 1962, as shown in the following table:

WINTER PRECIPITATION
November 1 through February 28

Drainage Area (River or Stream)	Season 1962-63	Season 1961-62	Season 1960-61	Normal (1931-60)	Percent of normal this season	Moisture Content 3-1-62	Moisture Content 3-5-63
Mississippi River to Guttenberg, Iowa	1.81	5.25	3.08	4.57	40	3.30	1.06
Mississippi River to Minneapolis, Minn.	1.42	4.32	2.33	3.32	43	3.45	0.48
Minnesota	1.54	3.96	2.52	3.43	45	2.45	0.18
St. Croix	1.69	5.20	3.03	4.21	40	3.70	0.93
Chippewa	2.22	5.62	4.13	4.80	46	3.95	2.15
Trempealeau	1.70	5.64	3.69	4.48	38	2.05	0.74
Black	1.72	5.50	3.90	5.08	34	3.05	1.50
Zumbro-Whitewater	1.51	3.51	3.62	4.30	35	3.00	0.61
La Crosse	1.56	5.88	2.29	4.96	31	2.30	1.37
Root	1.53	5.35	3.33	4.98	31	3.50	0.86
Kickapoo-Pine	1.80	7.58	2.96	5.55	32	3.00	1.23
Wisconsin	1.97	7.38	3.93	5.63	35	3.90	1.76
Fox	3.07	7.50	2.89	6.31	49	4.30	0.80
Lake Superior	2.98	5.35	4.10	6.15	48	4.10	2.23
Upper Iowa	1.49	5.55	3.65	5.30	28	4.00	0.92

Total March precipitation was below normal except in southeastern Minnesota and the southern half of Wisconsin. March temperatures were above normal and ranged from 10° to 25° above the daily mean during the last 9 days of the month. The combination of warm temperatures, snowfall concentrated on the 18-19th, moderate rains over the southern portion on the 16-17th and again on the 25-26th helped to remove the frost from the ground. Snow-

melt runoff was held to a minimum. The overflow that resulted on the Black and Kickapoo Rivers in Wisconsin, on the Root at Hokah, Minn., and the upper Iowa at Dorchester, Iowa, was minor.

Light flooding occurred on the Turkey and Maquoketa Rivers in eastern Iowa, and on the Pecatonica River in northern Illinois and southern Wisconsin. Although the snow cover was not great, frost depth was considerable. The soil remained frozen while the melt occurred very rapidly accompanied by a rainfall of 1/2 to 3/4 inch.

Minor flooding occurred in the Des Moines Basin during March. The water equivalent of snow on the ground in Iowa at the beginning of the month was less than 1/2 inch over the southern sections and 1/2 to 3/4 inch over northern sections. A mild warm spell from the 2d through the 5th caused small streams to rise in the southern counties. Small tributaries in the lower Des Moines overflowed agricultural land on the 4th and 5th, and a slight overflow occurred on the lower Skunk. A large ice jam on the Des Moines River upstream from Chillicothe caused the Des Moines River to overflow agricultural land in the vicinity of Eddyville, Iowa. A second warm spell from the 14th through the 17th caused another rise in the streams of southern Iowa. The Skunk again overflowed its banks in the vicinity of Oskaloosa. The final and major warm spell of the month began on the 22d and continued through the end of the month. By this time, much of the available water had already moved downstream and no overflow was reported. Light rains on the 4th and 5th contributed to the minor flooding during the first week. Showers on the 11th and again on the 18th were followed by increased flow with some minor flooding. No damage occurred as the minor flooding was limited to agricultural land, which was idle at the time.

The flooding on streams in Illinois was due to generally heavy rain on the 4th and 5th, plus snowmelt. The month of March began with a snowstorm that deposited up to 5 inches of snow across southern Illinois. The wet condition of the soil and partially frozen ground contributed to appreciable runoff. The Illinois exceeded flood stage below Havana by as much as 3 1/2 feet. The Sangamon exceeded flood stage in the reach between Monticello and Riverton by as much as 4.3 feet. The Kaskaskia exceeded flood stage by 2 to 3 feet. In the area around Murphysboro, the Big Muddy exceeded flood stage by 6 to 7 feet. Extensive lowlands were inundated but there was little damage as these areas are not planted. Additional heavy rains from the 15th to the 18th caused flooding on the Kaskaskia at Carlyle, Ill., from the 19th to the 24th.

Missouri Basin. --Four to 10 inches of snow occurred over most of South Dakota from the 16th to the 18th and in the Black Hills, as much as 15 to 18 inches of snow was deposited. At Sioux City, Iowa, most of the precipitation from this storm occurred as rain and amounted to 0.79 inch. The soil absorbed most of the water as the snow melted during the unusually warm, drying weather during the last 10 days of March. Streams in South Dakota generally held to less than half of bankfull. The river ice was generally gone by the 22d.

Fifteen to 23 inches of snow was reported in a few northwestern counties in Kansas during March, with most of it occurring on the 13th. Locally heavy snow was also reported on the upper Big Blue River Valley in Nebraska on the 5th. Minor rises occurred in the upper Big Blue River Valley, the Marais Des Cynes, and on Stranger Creek in Kansas from general rains of 1 to 2 inches on the 4-5th.

Flooding in Missouri during March was not damaging. Most extensive flooding was on the Grand River early in the month. As much as 18,000 acres of cropland, which had not been planted, was flooded in the reach around Sumner, Mo. Flooding in the upper Grand Basin receded quickly and did little if any damage. Flooding along the Chariton was confined mostly to low cropland.

Ohio Basin. -- Four separate rises occurred during March, with flood stages being exceeded on two occasions in most of the upper basin. During the last week of the month headwater areas in the Allegheny Basin experienced overflow resulting from snowmelt runoff and ice conditions. Excessive rainfall and snowmelt runoff combined to produce flooding over much of the remainder of the upper Ohio Basin during the first week of the month.

At the beginning of March the Allegheny River was frozen over from Natrona, Pa., upstream to Olean, N. Y., with ice reported 7 to 24 inches thick. Snow cover in the Allegheny Basin ranged from 4 to 28 inches deep, with a water content of 5 to 8 inches. Warming temperatures on the 16th and 17th combined with light rainfall over the Allegheny Basin resulted in sufficient runoff to begin ice movement. Backwater flooding occurred over Lock 9, Rimerton, Pa., to East Brady, Pa., and ice gorges 7 to 30 feet high were reported. Many summer homes and cottages were affected. French Creek at Meadville, Pa., experienced minor damages from backwater flooding.

Temperatures ranging from 60° to 70° over the upper Allegheny Basin during the period from the 25th through the 30th resulted in rapid snowmelt and a slow, steady rise in the headwater streams. The main stem of the Allegheny rose to bankfull level to 2 feet above from Olean, N. Y., to Warren, Pa., with only minor damages resulting.

Rainfall on the 4th and 5th averaging 2 to 3 inches over the Monongahela Basin and smaller basins in the upper Ohio River drainage resulted in swift rises and pretty general overflow. Serious flooding occurred along Chartiers Creek at Heidelberg, Canonsburg, and Carnegie, Pa., with preliminary estimates of $6 million damage at Carnegie alone. Extensive damage to homes, businesses, and public utilities occurred along Wheeling Creek in the vicinity of Wheeling, W. Va. Portions of the West Fork, Cheat, and Tygart Rivers, tributaries of the Monongahela, overflowed at stages ranging up to 3 feet above flood stage. Flood stage was exceeded by 2 to 10 feet along the Monongahela River.

Moderate to heavy rain showers and thundershowers, ranging from 1 to more than 3 inches on the 19th and 20th over the Monongahela, lower Allegheny, and upper Ohio River drainages, resulted in flood levels again being exceeded in much of the Monongahela Basin. Headwater areas received the heaviest rainfall and flood levels were higher than those which occurred earlier in the month. Stages were the fourth highest of record on the West Fork and fifth highest on the Cheat River. Stages along the main stem of the Monongahela were lower than those which occurred on the 5th and 6th, and ranged from 1 to 6.5 feet above flood stage.

Very heavy rain on March 4 resulted in serious flooding

on the Little Kanawha River in West Virginia and on the Hocking River in Ohio. Flash flooding occurred near Parkersburg, W. Va., on either side of the Ohio River, when several houses and a large number of automobiles were flooded in Vienna, W. Va., and near Belpre, Ohio. On the 5th and 6th the Little Kanawha River crested near 3.5 feet above flood level at Glenville and Creston, W. Va., and the Hocking River reached 6 to 7 feet or so above flood stage from Enterprise to Athens, Ohio. Major damages resulted from this overflow. Light flooding occurred at Pikeville, Ky., on the Levisa Fork of the Big Sandy during this same period.

On the 11th large amounts of rain, ranging from 2.5 to 4.5 inches, fell in the Guyandot Basin in West Virginia and in the Big Sandy Basin in Kentucky, resulting in severe flooding. The Guyandot River reached the highest stages on record from the 12th to the 13th. The Tug Fork of the Big Sandy also exceeded the previous high stage of record at Williamson, W. Va., when it rose to 17 to 18 feet above flood stage on the 12th. On the Levisa Fork of the Big Sandy flood stage was exceeded by 15 to 17 feet on the 12th and 13th in the Pikeville-Prestonburg, Ky., reach of the river. Wholesale damage to property occurred in the many towns drained by the Guyandot and the Big Sandy Rivers. Hundreds of people were driven from their homes. Numerous houses and business places were damaged and in some cases totally destroyed. Schools and other public buildings, highways, bridges, and power plants suffered great damage. The town of Gilbert, W. Va., was isolated by the flood waters and in Logan, W. Va., the only contact with the outside world was by rail. In some places roads were cut off by mud slides.

During the third week of March scattered showers occurred on the 16th and changed to general rain during the night of the 16th-17th. This resulted in rises ranging up to 2 feet above flood stage on tributaries in southeastern Kentucky and southwestern West Virginia where the floods during the period of the 11th to the 13th did so much damage. General rains on the 19th produced overflow again on the Little Kanawha and Hocking Rivers. Crest stages were 1 to 2 feet higher than those which occurred during the first decade of the month on the Little Kanawha but were about 5.5 to 6.5 feet lower along the Hocking River.

The Scioto Basin received heavy rainfall during the period from the 4th to the 6th, averaging near 3 inches in the upper basin to 4 to 5 inches in the lower basin. Paint Creek at Bourneville, Ohio, rose to 10.5 feet over flood stage on the 5th, the highest stage ever recorded since the station was established in the early 1920's. Stages along the Scioto River were about 5 feet above flood stage in the upper portion of the river and ranged from 8 to 14 feet above flood level in the lower portion of the river below Columbus, Ohio. The overflow which occurred during the last part of the second week and first part of the third week was of a minor nature.

General flooding developed in the Great Miami and Little Miami Basins during the night of 4th-5th, from heavy rainfall on the 4th-5th, averaging 3 to 4 inches. Runoff from the rain was augmented by the melting of 3 to 8 inches of snow over the northern portions of these basins. Stages up to nearly 9 feet above flood stage were reported on the Little Miami River. The crest on the Great Miami River at Miamitown, Ohio, was 11 feet above flood stage. The lower sections of Loveland and Newtown, Ohio, were flooded. Stages 3 to 5 feet above flood stage occurred on the lower tributaries, namely the East Fork of the Little Miami and on the Whitewater River. Two deaths by drowning were reported on the East Fork of the Whitewater River near Liberty, Ind. One death by drowning occurred on the East Fork of the Little Miami and two other deaths were caused indirectly by the heavy rains. The flood waters receded quickly to within banks on the 6th.

Severe flooding developed during the night of the 11-12th in the headwaters of the Kentucky River, with most damaging effects in and around Hazard, Ky. Rainfall averaged about 4 inches over the headwaters of the Kentucky River and 1 to 3 inches over the remainder of the Kentucky Basin and in the Licking Basin. The crest stage at Hazard, Ky., on the North Fork was 15 feet above flood stage, only 2 feet below the record flood of January 1957. The entire downtown area of Hazard was flooded and evacuated and damages have been estimated at $4 to $5 millions in that vicinity alone. State Police at Hazard reported one death as a result of a railroad washout. Two days after the flood, 6 persons on a trip to help flood-stricken relatives were drowned when their car plunged down a 60-foot embankment into the river near Hazard. Damage was relatively minor in other areas of the Kentucky and the Licking Basins.

The heavy rains on the 4-5th produced flooding on the Green River in Kentucky where stages ranged up to more than 5 feet above flood level. Moderate rain on the 11-12th and again on the 16-17th prolonged the period of high water. Damage in the Green River Basin was relatively light and limited largely to agricultural lands.

At the beginning of the month a 2- to 9-inch blanket of snow covered the greater portion of the Wabash Basin. Rivers and small streams were mostly frozen over. There was deep frost penetration to as much as 36 inches in some instances. The general rains of the 4-5th caused the rivers to rise very rapidly to moderate to high flood levels throughout most of their lengths. The streams had already crested at most points by the 16th when 2 to 3 inches of additional rain during the period 16th to the 19th resulted in another general rise, but stages were substantially lower than those experienced earlier in the month.

The highest stage since March 1913 occurred at Columbus, Ind., when the East Fork of the White River rose to 16.2 feet on the 6th. A number of families were evacuated. An 80-year old man drowned in the East Fork near Brownstown, Ind. A number of families were also evacuated at Spencer, Ind., where the White River crested more than 8 feet above flood stage. However, there was no extensive damage to residential areas. Many state and county roads were closed due to the flood waters and some winter crops were damaged. A 6-year old girl was drowned at Indianapolis, Ind., when she fell into a rain-swollen drainage ditch and was swept into a drainage tile.

Extensive overflow of bottom lands occurred along the Wabash River, resulting in considerable damage. A few families in Lafayette, Ind., had to be evacuated. Crests formed suddenly at some points along the Wabash because of ice jams.

March 1963 was the wettest March in recent years over the Cumberland River basin. Total rainfall at Nashville, Tenn., was 10.03 inches for the wettest March since 1891.

and only 0.29 inch short of the wettest March in the history of the Nashville Weather Bureau, dating back to 1871. About 40 percent of the rainfall stations in the basin measured in excess of 10 inches for the month. Severe flooding of the smaller streams occurred from frequent short period heavy rains which fell in many localities. Major flooding occurred over the upper Cumberland Basin in southeastern Kentucky at Williamsburg, Ky., and above, and also on the Stones and Harpeth Rivers in Tennessee. Operations of flood control dams by the U. S. Engineers prevented major flooding on the main stem of the Cumberland River from Wolf Creek Dam downstream.

The first period of flooding in the Cumberland Basin resulted from the heavy rains of the 4-6th which averaged about 3 inches. The greatest flooding at most points was due to a heavy rain on the 11-12th. During this latter period rainfall over the upper Cumberland Basin averaged more than 4 inches and occurred in only a few hours, between 5 p.m. on the 11th and 3 a.m. on the 12th. A record-breaking crest of 29.2 feet occurred at Baxter, Ky., near Harlan, on the morning of the 12th. This was 3.5 feet higher than the great flood of 1946, about 7 feet higher than the devastating flood of January 1957 and more than 13 feet above flood stage. The crest produced a stage 1.3 feet above that which occurred in the 1957 flood when it passed Pineville, Ky., late on the 12th. When it passed Barbourville, Ky., just before noon on the 13th it was 14.4 feet above flood stage, almost a foot below the crest of the 1957 flood. The crest continued to flatten as it passed Williamsburg, Ky.

Rainfall averaged about 4 inches over the Stones River Basin in Tennessee, with a heavy upstream concentration. Small streams in the Woodbury, Tenn., area were reported to be the highest since 1902. The crest on the Stones River at Donelson, Tenn., was 9.3 feet above flood stage and a little over a foot lower than the February 1962 crest. The Poor Fork of the Cumberland River at Cumberland, Ky., was a little less than 2 feet lower than the record flood of January 1957.

Another storm covered the Cumberland River Basin with heavy rains on the 16-17th. Amounts up to 3 inches falling mostly in a few hours during the night produced more major flooding over the upper Cumberland Basin. A crest of 23.1 feet was reached on the Baxter gage at 9 a.m., Sunday, the 17th. While this was 6 feet below the record crest which occurred on the 12th, it was almost a foot higher than the 1957 crest. Downstream crests at Pineville and Barbourville, Ky., were 5.6 and 4.6 feet lower, respectively, than those which occurred the previous week. The crest flattened on its way to Williamsburg, Ky., and acted only to keep the stage above flood level at Williamsburg for a total of 10 days.

Widespread damage resulted from the flooding over the upper Cumberland Basin. Preliminary estimates of losses have been set at $25 million. The city of Cumberland, Ky., sustained over $1 million damages with over 200 homes and 50 businesses flooded, bridges and streets washed out, and serious damage to city water and sewage lines. In the city of Harlan, Ky., 29 homes were destroyed, 209 residences suffered major damage and 242 minor damage, 26 businesses with serious damage and 43 others damaged to a lesser extent. Many residents had just cleaned up their homes and refurnished them after the flood on the 12th when they were hit and damaged again by the flood on the 17th. In Harlan County alone, 1,000 families suffered total or partial loss to their homes and furnishings and about 100 bridges were washed out in the County. Mass evacuations were required for people living outside the flood wall protected areas in the Barbourville and Pineville, Ky., areas and numerous homes and businesses outside the flood wall were damaged.

Damage in the Cumberland Basin in Tennessee was chiefly caused by flash flooding of small streams and erosion damage to farmlands and roads. A flash flood on Town Creek in downtown Lebanon, Tenn., early on the morning of the 17th caused a quarter million dollars loss to businesses and several homes as water stood 4 feet deep in the Public square. Considerable damage in the Nashville, Tenn., area resulted from overflowing storm sewers and overflow of small shallow streams due to the heavy thundershowers. An example of the intensity of the rainfall was that of 3.67 inches of rain falling in a 2-hour period at McMinnville, Tenn., early on the night of the 11th. Damage was light on the main stem of the Cumberland River from Celina to Clarksville, Tenn.

Two separate periods of heavy rain fell over the French Broad Basin of western North Carolina during the night of the 11th through the 12th, with storm totals ranging from 3.14 to 6.45 inches. The French Broad River rose to only moderately high flood level and damage was light. A slide occurred along the river about 5 miles south of Marshall, N. C., at the time a train was passing, forcing the diesel locomotive head-first into the edge of the French Broad River.

The flooding in the Tennessee River basin during the first decade of March resulted from the rains of the 4-6th which averaged 3.5 to 4.5 inches. In general, damage was rather light. However, the flash flooding on the Little Pigeon River on the 5-6th caused considerable damage to streets, stores, and merchandise and required evacuations of a number of families in low areas along the river.

Most of the main rivers in Tennessee went into flood following the heavy rains which averaged near 5 inches over central and eastern Tennessee. The rains began on the afternoon of the 11th and continued until early morning of the 13th. Flash flooding developed on many small streams. Damage was relatively light in most areas of flooding. The greatest losses were sustained along First Creek in Knoxville, Tenn., and at Sevierville, Tenn., on the Little Pigeon River. There was considerable flooding of streets and underpasses in Knoxville, and water reached a number of homes and business places and some damage resulted to streets, culverts, and bridges. Little Pigeon River flooded most of the city of Sevierville, Tenn., to a depth of 2 to 3 feet. Many families were evacuated from homes near the river and substantial damage was reported.

Heavy tributary discharge kept the Ohio River at high stages during the greater part of the month. On March 20 and 21 the Ohio was above flood level throughout its entire length. An interesting and extremely rare situation developed during a period on the 21st and 22d when due to progressive heavy contributions of previous rainfall and runoff, the middle and lower portions of the river crested at about the same time as a considerable portion of the upper river, so that the Ohio River was virtually at its

maximum stage over a distance of approximately 850 miles. The Ohio was above flood stage for 22 consecutive days at Cincinnati, Ohio, the longest consecutive period on record and 3 days longer than during the record flood of 1937. Flood stage was exceeded for 22 consecutive days also at Louisville, Ky., only 1 day short of the record 23 consecutive days in 1937. The lower portions of the river (extending upstream for 170 miles or so) remained above flood level well into April. Downstream from Dam 53, Grand Chain, Ill., a point 18 miles above the mouth, the river was above flood stage for 31 days, going below flood stage on April 8. Crest stages during the first decade ranged up to 3 feet higher than those which occurred during the third decade from Cincinnati, Ohio, to Wheeling, W. Va.

Arkansas Basin.--Minor to moderate rises occurred on the Verdigris and Neosho Rivers in Kansas and Oklahoma due to rainfall between the 4th and 12th. The Neosho reached near bankfull stage in the Iola, Kans., area on the 9th.

A thundershower on the 4th caused Walnut Creek to overflow in Tulsa, Okla.

The lower Black River overflowed at Black Rock, Ark., on the 17th and 18th due to heavy rain on the morning of the 17th. Flood damage was limited to loss of lowlands for planting or grazing purposes.

Lower Mississippi Basin.--Flooding developed along the main stem of the Lower Mississippi at New Madrid and Caruthersville, Mo., on March 14 due to high flow from the Ohio River. This high flow was due to heavy rains during the first week of the month in the Ohio, Cumberland, and Tennessee River Basins. Heavy rains also occurred in the Mississippi between St. Louis, Mo., and Cairo, Ill. Three to 4 inches were reported over the northern tributaries of the Ohio on the morning of the 5th, and 2 or 3 inches in the lower Ohio, Cumberland, and Tennessee Basins. Moderate rainfall was reported on the 10th, 11th, and 12th in the middle Ohio Basin and in the lower Mississippi Basin. Very heavy rainfall was reported on the 12th in the Cumberland and Tennessee Basins, with additional amounts on the Upper Tennessee on the 13th. Heavy rains occurred again on the Middle and Lower Ohio Basins on the 16th and 17th with additional moderate amounts on the Middle Ohio on the 19th. Flooding extended downstream by late afternoon of the 21st. By April 1, the Mississippi had reached a stage of 42.7 ft. at Helena, Ark., (flood stage 44 ft.). Stages along the Mississippi were not unusually high but the rise was of rather long duration. Losses were not heavy as spring crops had not been planted.

PACIFIC SLOPE DRAINAGE

Heavy rain (3.5 inches) from the 27th to the 29th caused a rapid rise in the Russian River in California. About 3 inches of this rainfall fell within the 24 hours of the 27th. At Guerneville, the river rose from a stage of 5 feet in the early morning of the 27th to a crest of 26 feet about 9 a.m. on the 28th, 3 feet below flood stage.

Concentration of precipitation near the end of the month brought substantial rises to all rivers and streams in the Sacramento and San Joaquin Basins in California. Overflow occurred at all fixed-sill weirs of the Sacramento River flood control system. By the month's end overflow was occurring only at the Tisdale weir into Sutter Bypass.

Coquille Basin.--Rainfall totals of 3 to 5 inches over the Coquille Basin during the period from the 27th to the 30th caused minor flooding on the Coquille at Myrtle Point, Oreg., on the 30th and 31st. No damages were reported.

Columbia Basin.--Heavy precipitation during the 3-day period beginning on the evening of the 27th produced flood or near flood flows on all coast range and low elevation Cascade Range Willamette tributaries in Oregon. Only near bankfull flows were experienced on Cascade Range tributaries draining higher elevations as the very cold air associated with this storm series lowered freezing levels 2 to 3 thousand feet. Cascade Mountain passes which had been practically bare of snow all winter received 20 to 40 inches of snow cover from the 28th to the 31st. Total storm precipitation was slightly better than 4 inches at all Willamette Valley reporting stations and near 6 inches at most coast and Cascade Range stations. Flood damages were confined to lowland flooding of farmland, primarily in the Lukiamute, Mary's, Pudding, and lower Tualatin drainages.

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE	Ft.			Ft.	
Lake Erie					
St. Marys: Decatur, Ind.	13	4	11	A 18.95	8
St. Joseph: Montpelier, Ohio	10	17	20	A 10.6	19
Maumee: Fort Wayne, Ind.	15	9	10	A 15.9	9
Defiance, Ohio	10	9	9	A 10.5	9
		11	12	A 15.6	11
Napoleon, Ohio	10	8	13	A 14.9	8
Sandusky: Upper Sandusky, Ohio	13	6	7	15.6	6
Tiffin, Ohio	8	7	8	9.7	7
Fremont, Ohio	10	6	10	15.3	7
Lake Ontario					
Canaseraga Creek: Groveland, N.Y.	11	17	18	13.0	17
		26	27	12.0	27
Oatka Creek: Garbutt, N. Y.	5	18	21	5.9	18-19
		26	28	5.4	27
Black Creek: Churchville, N. Y.	5	17	21	7.1	18
Genesee: Scio, N. Y.	8	18	18	8.05	18
		27	27	8.85	27
Rochester, N. Y.	13	18	18	13.4	18
ATLANTIC SLOPE DRAINAGE					
Nashua: East Pepperell, Mass.	8	29	30	# 8.3	29
Housatonic: Gaylordsville, Conn.	8	27	30	8.9	28
Stevenson, Conn.	12	27	28	12.3	27-28
Passaic: Chatham, N. J.	6	8	8	6.0	8
Millstone: Blackwells Mills, N.J.	8	6	7	8.4	7
Raritan: Manville, N. J.	12	6	7	13.6	6
Bound Brook, N. J.	8	6	7	9.45	7
Assunpink Creek: Trenton, N. J.	6	6		6.35	6
East Branch Delaware: Fishs Eddy, N. Y.	11	27	27	12.5	27
West Branch Delaware: Hale Eddy, N. Y.	11	27	27	11.0	27
Unadilla: Rockdale, N. Y.	11	28	28	11.9	28
Tioughnioga: Whitney Point, N. Y.	12	26	31	14.0	27
Chenango: Sherburne, N. Y.	8	27	29	9.2	27
Greene, N. Y.	13	27	28	14.3	27
Chenango Forks, N. Y.	10	27	28	11.0	28
Chemung: Elmira, N. Y.	10	18	18	10.5	18
		27	27	10.3	27
Chemung, N. Y.	12	17	18	14.9	18
		26	27	14.6	27
Juniata: Newport, Pa.	22	6	6	25.0	6
Susquehanna: Unadilla, N. Y.	11	27	29	12.6	28
Bainbridge, N. Y.	13	26	31	E 18.4	28
Conklin, N. Y.	11	26	Apr. 2	15.75	28
Binghampton, N. Y.	14	27	29	E 15.6	28
Vestal, N. Y.	18	27	30	22.5	28
Towanda, Pa.	16	27	29	17.6	27
Wilkes-Barre, Pa.	22	28	28	22.3	28
North Branch Potomac: Cumberland, Md.	17	5	5	17.9	5
		20	20	17.5	20
South Branch Potomac: Springfield, W. Va.	15	20	20	# 18.3	20
Potomac: Harpers Ferry, W. Va.	18	21	21	18.2	21
Washington, D. C. (NR)	12	7	8	12.6	7
		21	22	13.9	21
Jackson: Covington, Va.	7	7	7	7.2	7
		12	13	13.4	12
		17	17	7.8	17
Rivanna: Palmyra, Va.	15	12	13	19.1	12
James: Buchanan, Va.	17	12	13	22.8	13
Holcombs Rock, Va.	22	12	13	24.9	13
Lynchburg, Va.	18	13	13	18.5	13

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE (Cont'd.)	Ft.			Ft.	
James (Cont'd.):					
Scottsville, Va.	20	13	14	20.9	14
Bremo Bluff, Va.	19	13	15	26.3	14
Columbia, Va.	18	12	15	26.9	14
Cartersville, Va.	20	13	16	21.4	14
Richmond, Va.(Westham)	12	13	16	16.4	15
		19	19	12.0	19
Richmond, Va. (City Locks)	9	13	16	13.5	15
Dan: Danville, Va.	11	12	14	# 13.7	14
Roanoke: Alta Vista, Va.	18	13	13	# 19.45	13
Randolph, Va.	21	7	7	21.4	7
		13	14	24.0	14
Neuse: Neuse, N. C.	14	8	11	# 17.5	10
		19	19	# 14.0	19
Smithfield, N. C.	13	8	22	18.25	11
Goldsboro, N. C.	14	13	26	# 17.5	17
Kinston, N. C.	14	16	28	# 15.7	20
Cape Fear: Moncure, N. C.	20	7	7	21.0	7
Fayetteville, N. C.	35	8		# 38.2	8
Elizabethtown, N. C.	20	8	11	28.7	9
		14	22	24.6	15
				22.0	19
				21.7	22
Yadkin: Yadkin College, N. C.	18	13	14	E 26.8	13
Rocky: Norwood, N. C.	16	6	8	E 22.1	6
		13	14	E 23.5	13
Pee Dee: Cheraw, S. C.	30	7	9	E 35.1	8
		13	17	E 38.0	15
Peedee, S. C.	19	8	28	E 24.6	20
Saluda: Pelzer, S. C.	6	6	9	12.9	6
		12	15	11.3	13
Chappells, S. C.	13	(8	9	19.6	8
		(13	15	22.9	13
Broad: Gaffney, S. C.	10	6	7	12.6	6
		13	13	13.0	13
Blair, S. C.	14	6	10	27.2	8
		13	16	26.5	14
Congaree: Columbia, S. C.	19	8	9	21.5	8
		14	15	22.9	15
Catawba: Catawba, N. C.	8	12	31	14.6	13
				12.5	25
Savannah: Millhaven, Ga.	15	19	31	17.2	27
Clyo, Ga.	11	13	31	15.3	31
Ocmulgee: Macon, Ga.	18	13	15	20.8	14
Abbeville, Ga.	12	20	23	13.3	21
Oconee: Milledgeville, Ga.	20	13	15	28.3	13
Mount Vernon, Ga.	16	20	22	16.7	21
Altamaha: Charlotte, Ga.	15	23	26	16.1	24
Satilla: Atkinson, Ga.	13	Feb. 27	3	13.2	1-2
EAST GULF OF MEXICO DRAINAGE					
Oostanaula: Resaca, Ga.	22	7	10	26.7	8
		14	17	25.1	15
Rome, Ga.	25	13	14	25.8	14
Etowah: Canton, Ga.	17	13	14	22.4	13
Coosa: Gadsden, Ala.	20	13	20	23.0	15
				22.7	18
Tombigbee: Tupelo, Miss.	21	12	12	25.2	12
Fulton, Miss.	16	13	15	18.6	13
Amory, Miss.	20	6	6	21.0	6
		13	17	25.6	14
Aberdeen, Miss.	34	14	18	38.7	16
Pearl: Bogalusa, La.	15	7	8	15.1	7
		15	22	17.4	18
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Black: Galesville, Wis.	12	27	28	A 12.4	28

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

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River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Upper Mississippi Basin (Cont'd.)					
Root: Hokah, Minn.	47	17	21	A 49.6	18
		22	25	A 48.4	23
				48.2	24
Upper Iowa: Dorchester, Iowa (NR)	14	17	17	14.1	17
Kickapoo: Soldiers Grove, Wis.	723	17	19	723.5	17
		24	28	724.7	26
Gays Mills, Wis.	698	18	18	698.2	18
		25	28	699.5	26
Turkey: Garber, Iowa	17	17	18	19.0	17
Maquoketa: Maquoketa, Iowa	13	17	17	14.8	17
East Branch Pecatonica: Blanchardville, Wis.	11	17	20	13.7	17
Pecatonica: Darlington, Wis.	11	17	19	15.4	17
Martintown, Wis.	11	15	24	18.5	20
Freeport, Ill.	13	20	25	14.7	21
Shirland, Ill.	10	14	31	13.8	20
Rock: Joslin, Ill.	10	14	15	10.9	15
Cedar: Bussey, Iowa	15	4	5	20.2	5
		19	19	17.9	19
Skunk: Oskaloosa, Iowa	15	4	5	16.0	4
		14	14	15.4	14
Augusta, Iowa	15	5	10	18.3	6
Middle: Indianola, Iowa	16	4	4	19.6	4
Des Moines: Eddyville, Iowa	15	5	6	19.0	5
Fox: Wayland, Mo.	15	5	6	16.4	5
Kankakee: Momence, Ill.	4	9	9	6.15	9
Sangamon: Monticello, Ill.	13	4	8	# 15.1	7
Riverton, Ill.	13	5	13	# 17.3	11
Illinois: Havana, Ill.	14	[illegible]	16	# 14.2	11-13
Beardstown, Ill.	14	7	15	# 15.15	9
Meredosia, Ill.	10	4	28	13.4	9
Kaskaskia: Vandalia, Ill.	18	6	8	# 21.0	7
Carlyle, Ill.	21	9	16	23.0	12
		19	24	# 21.5	22-23
Big Muddy: Murphysboro, Ill.	16	17	31	23.6	22
Missouri Basin					
Nishnabotna: Hamburg, Iowa	18	12	12	# 23.15	12
Grand: Pattonsburg, Mo.	25	4	5	E 26.0	4
Chillicothe, Mo.	24	4	6	# 28.9	5
Sumner, Mo.	26	5	8	32.6	6
		20	[illegible]	# 27.0	20
Chariton: Novinger, Mo.	20	4	5	# 21.7	4
Prairie Hill, Mo.	15	5	5	# 17.7	5
Ohio Basin					
Allegheny: Olean, N. Y.	10	26	30	12.1	27
Salamanca, N. Y.	1370	27	27	1370.1	27
Warren, Pa.	14	27	27	14.0	27
Tygart: Elkins, W. Va.	17	5	7	18.0	6
		20	20	18.5	20
Belington, W. Va.	14	5	7	15.5	6
		19	20	16.5	20
Philippi, W. Va.	17	5	7	19.6	5
		19	20	21.5	20
West Fork: Weston, W. Va.	17	5	5	19.0	5
		19	20	22.2	19
Clarksburg, W. Va.	7	5	6	10.0	5
		19	21	10.1	20
Cheat: Parsons, W. Va.	11	5	6	12.4	5
		19	20	16.1	19
Monongahela: Lock 15, Hoult, W.Va.	18	5	5	19.9	5
		20	20	18.1	20
Lock 7, Greensboro, Pa.	23	5	6	28.1	5
		20	20	26.6	20
Lock 6, Rice's Landing, Pa.	25	5	5	26.8	5

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Ohio Basin (Cont'd.)					
Monongahela (Cont'd.):					
Lock 5, Brownsville, Pa.	23	5	7	31.2	5
		20	21	28.1	20
Lock 4, Charleroi, Pa.	24	5	7	33.8	5
		20	21	30.5	20
Lock 3, Elizabeth, Pa.	23	5	7	29.5	5
		20	21	26.6	20
Lock 2, Braddock, Pa.	26	5	7	31.8	5
		20	21	29.7	20
Chartiers Creek: Carnegie, Pa.	10	4	5	14.2	5
Muskingum: Lock 7, McConnelsville, Ohio	11	5	5	11.7	5
Little Kanawha: Glennville, W.Va.	23	5	6	26.4	5
		19	20	28.5	20
Creston, W. Va.	20	5	7	23.45	6
		20	21	24.2	20
Hocking: Enterprise, Ohio	12	4	7	19.2	5
		20	20	12.6	20
Athens, Ohio	17	5	[illegible]	22.9	6
		20	20	17.4	20
Greenbrier: Alderson, W. Va.	14	12	13	18.0	12
Coal: Tornado, W. Va.	25	12	13	27.9	12
Guyandot: Pineville, W. Va.	13	12	12	15.25	12
Logan, W. Va.	20	12	13	31.7	12
		17	18	21.4	17
Branchland, W. Va.	30	12	14	44.05	13
		18	19	32.7	18
Tug Fork: Williamson, W. Va.	27	12	13	E 45.0	12
		17	17	27.2	17
Kermit, W. Va.	38	12	13	46.5	13
Levisa Fork: Elkhorn City, Ky.	18	12	12	21.1	12
Pikeville, Ky.	35	6	7	36.4	7
		12	13	50.0	12
		17	17	36.2	17
Prestonsburg, Ky.	30	[illegible]	[illegible]	35.4	7
		12	14	46.6	13
		18	18	35.0	18
Paintsville, Ky.	40	12	15	44.4	13
Big Sandy: Louisa, Ky.	45	13	15	50.4	14
Alum Creek: Columbus, Ohio	10	4	6	15.2	5
Paint Creek: Bourneville, Ohio	10	4	7	20.3	5
		17	21	14.75	20
Scioto: La Rue, Ohio	11	5	10	15.95	5
		20	21	13.0	20
Prospect, Ohio	10	5	10	14.75	6
		21	22	10.1	22
Circleville, Ohio	14	5	9	21.9	6
		18	21	15.9	21
Chillicothe, Ohio	16	[illegible]	[illegible]	25.2	6
Piketon, Ohio	16	5	11	30.1	6
		17	23	25.0	20
East Fork Little Miami: Perintown, Ohio	19	4	6	22.0	4
Little Miami: Kings Mills, Ohio	17	4	6	25.7	5
Milford, Ohio	12	4	6	19.5	5
Licking: Salyersville, Ky.	19	12	12	22.6	12
Whitewater: Brookville, Ind.	20	4	6	24.8	5
Miami: Miamitown, Ohio	16	4	8	27.0	5
North Fork Kentucky: Hazard, Ky.	20	11	12	35.0	12
		17	17	23.3	17
Jackson, Ky.	29	12	13	37.2	17
Whitesburg, Ky.	10	12	12	13.5	12
South Fork Kentucky: Oneida, Ky.	29	12	12	35.0	12
Brashears Creek: Taylorsville, Ky.	20	5	6	23.3	5
		17	17	22.0	17
Rolling Fork: Boston, Ky.	40	7	8	# 41.3	7
Green: Munfordville, Ky.	28	6	9	31.8	8
		13	15	30.4	15

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(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates From—	To—	Crest* Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Ohio Basin (Cont'd.)					
Green (Cont'd.): Lock 6, Brownsville, Ky.	18	7	9		
Lock 4, Woodbury, Ky.	33	8	11	36.7	8
		12	17	35.8	16
		20	21	33.1	20
Lock 2, Calhoun, Ky.	23	8	Apr. 2	28.7	20-23
Vermillion: Danville, Ill.	18	5	7	21.0	6
Embarass: Ste. Marie, Ill.	18	7	7	19.0	7
Lawrenceville, Ill.	T 11	5	12	16.55	10
		17	22	14.45	20
Muscatatuck: Austin, Ind.	T 16	5	8	24.8	6
		17	22	22.5	18
Eel: Bowling Green, Ind.	17	5	6	22.15	5
		20	20	17.3	20
East Fork White: Columbus, Ind.	10	6	7	16.2	6
Seymour, Ind.	14	5	9	18.3	5
				18.65	7
		17	18	16.0	17
		19	20	14.4	19
Bedford, Ind.	20	8	13	28.7	9
		20	25	22.85	22
Williams, Ind.	10	8	12	16.8	10
		21	23	10.9	22
Shoals, Ind.	25	10	12	26.8	11
White: Muncie, Ind.	6	5	6	9.85	5
Anderson, Ind.	10	4	8	17.6	6
		20	21	10.7	20
Noblesville, Ind.	14	4	7	18.9	6
Ravenswood, Ind.	T 7	4	7	10.7	7
Indianapolis, Ind. (Morris St.)	16	8	7	17.5	7
Centerton, Ind.	603	5	9	609.3	5
Spencer, Ind.	14	5	11	22.55	6
		17	23	18.9	21
Elliston, Ind.	18	5	12	27.7	8
		17	24	22.5	21
Newberry, Ind.	18	7	11	21.8	8
Edwardsport, Ind.	15	6	14	23.95	9
		17	26	20.5	24
Petersburg, Ind.	16	6	1/	24.0	11-12
				23.5	24
Hazelton, Ind.	16	7	1/	25.2	13
				23.5	26
Skillet Fork: Wayne City, Ill.	15	5	7	17.6	6
		17	19	18.1	17
Little Wabash: Wilcox, Ill. (NR)	16	4	11	20.8	7
		17	21		
Wabash: Bluffton, Ind.	10	5	9	13.7	7
Huntington, Ind.	20	4	4	A 20.2	4
Wabash, Ind.	12	5	10	15.85	5
				17.9	6
				18.3	8
Lafayette, Ind.	11	5	12	22.6	6
Covington, Ind.	16	5	13	25.7	8
Montezuma, Ind.	14	5	15	25.55	8
		20	20	14.1	20
Clinton, Ind.	18	5		24.6	9
Terre Haute, Ind.	14	5	15	20.7	9-10
Hutsonville, Ill.	20	8	16	23.8	11
Riverton, Ind.	18	8	17	21.1	12
Vincennes, Ind.	16	8	21	20.7	13
Mt. Carmel, Ill.	17	8	30	24.1	14
New Harmony, Ind.	15	10	31	18.8	17
Saline: Harrisburg, Ill.	13	5	8	18.8	6
		12	Apr. 7	22.4	20
Poor Fork: Cumberland, Ky.	7	11	12	9.75	12
		17	17	7.25	17
Stones: Donelson, Tenn.	40	6	6	43.3	6
		12	13	49.3	13

River and station	Flood stage	Above flood stages -dates From—	To—	Crest* Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Ohio Basin (Cont'd.)					
Harpeth: Kingston Springs, Tenn.	15	5	5	15.8	5
		12	12	19.5	12
		17	17	21.7	17
Cumberland: Baxter, Ky.	16	6	6	18.3	6
		11	13	29.2	12
		17	17	23.1	17
Pineville, Ky.	1002	12	13	1006.8	12
Barbourville, Ky.	27	6	8	34.1	7
		12	15	41.4	13
		17	20	36.75	18
Williamsburg, Ky.	21	7	8	23.0	7
		12	21	(29.2	14
				(24.4	18
Nashville, Tenn.	40	13	13	40.3	13
Eddyville, Ky.	50	13	Apr. 1	58.5	21-22
Little Pigeon: Sevierville, Tenn.	9	5	6	14.6	6
		12	13	15.8	12
French Broad: Asheville, N. C.	8	12	13	8.6	13
Marshall, N. C.	10	6	6	11.0	6
		12	12	15.0	12
Hot Springs, N. C.	13	6	6	19.0	6
		12	12	16.4	12
		12	13	20.0	12
First Creek: Knoxville, Tenn.	6	5	5	7.0	5
		5	6	8.0	6
		12	12	9.0	11
Tuckasegee: Bryson City, N. C.	11	6	6	12.3	6
		12	12	11.0	12
Emery: Oakdale, Tenn.	23	12	12	29.1	12
Chickamauga Creek: Chickamauga, Tenn.	10	7	8	15.6	7
		12	15	15.2	12
Elk: Fayetteville, Tenn.	659	6	8	663.5	6
		11	16	668.8	12
Duck: Shelbyville, Tenn.	719	5	6	720.5	6
		11	13	729.5	12
Columbia, Tenn.	32	6	7	32.6	7
		12	15	37.5	14
Tennessee: Chattanooga, Tenn.	651	12	17	653.7	13
Whitesburg, Ala.	560	6	24	572.4	14
Florence, Ala.	419	9	20	425.6	14
Savannah, Tenn.	380	13	22	389.0	17
Gilbertsville, Ky.	320	7	1/	340.3	19
Ohio: Pittsburgh, Pa.	25	20	21	26.7	21
Dashields Dam, Pa.	26	20	21	27.1	21
Montgomery Dam, Pa. (Lower Gage)	32	21	21	32.2	21
Dam 10, Steubenville, Ohio	33	6	7	34.6	6
		21	22	35.2	21
Dam 12, Wheeling, W. Va.	36	6	7	37.3	6
		21	22	37.4	21
Dam 14, Clarington, Ohio	37	6	7	39.2	7
		21	22	38.7	21
Dam 15, Duffy, Ohio	37	6	7	38.6	7
		21	22	37.6	21
Dam 16, New Matamoras, Ohio	38	6	7	39.45	7
Dam 17, Reno, Ohio	34	6	8	38.7	7
		20	23	36.3	22
Marietta, Ohio	35	6	8	41.0	7
		20	23	38.3	22
Dam 18, Belpre, Ohio	36	6	8	42.5	7
		20	23	39.2	22
Parkersburg, W. Va.	36	5	8	41.8	7
		20	23	38.9	22
Dam 19, Washington, W. Va.	40	6	8	44.8	7
		20	23	41.8	22
Dam 20, Belleville, W. Va.	40	6	9	45.5	7
		20	23	42.8	22
Dam 22, Ravenswood, W. Va.	44	6	9	48.0	7
		21	23	45.3	22
Dam 23, Racine, Ohio	45	6	9	50.5	8
		20	23	47.9	22
Pemeroy, Ohio	46	6	9	51.6	8
		20	23	49.6	21

FLOOD STAGE DATA

(All dates in March unless otherwise specified)

River and station	Flood stage	Above flood stages -dates From-	To-	Crest * Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Ohio Basin (Cont'd.)					
Ohio (Cont'd.) Point Pleasant, W. Va.	40	6	10	49.1	8
		13	14	40.3	13
		19	25	47.1	21
Gallipolis Dam, Hogsett, W. Va.	50	7	9	54.35	8
		20	23	52.7	21
Huntington, W.Va. (Old Dam 28)	50	7	10	55.2	8
		13	14	50.4	14
		20	24	53.4	21
Ashland, Ky.	52	6	11	59.6	8
		13	15	55.0	14
		19	24	57.9	21
Greenup Dam, Ky.	54	7	11	61.8	9
		13	15	56.6	14
		19	25	60.0	22
Portsmouth, Ohio	50	6	16	59.7	9
		17	25	57.8	22
Dam 32, Vanceburg, Ky.	53	7	15	60.1	9
		19	25	58.8	22
Dam 33, Maysville, Ky.	50	7	27	59.8	9
				58.9	22
Dam 34, Chilo, Ohio	49	7	26	57.2	9
				56.7	22
Cincinnati, Ohio	52	6	27	59.4	10
				59.3	22
Fernbank, Ohio	50	6	28	59.1	10
				59.0	22
Warsaw-Markland Dam, Ky.	51	8	26	54.6	11
				56.1	22
Madison, Ind.	46	7	27	51.7	22
Dam 41, Louisville, Ky. (Upper Gage)	28	7	28	36.5	22
(Lower Gage)	55	7	28	62.7	22
Dam 43, Evans Landing, Ind.	57	8	28	64.2	22
Dam 44, Leavenworth, Ind.	53	7	30	63.8	21
Dam 45, Addison, Ky.	47	7	30	54.7	21
Tell City, Ind.	38	7	Apr. 1	46.9	20
Dam 46, Owensboro, Ky.	41	9	31	45.4	20
Dam 47, Newburgh, Ind.	38	7	Apr. 5		
Evansville, Ind.	42	10	31	44.8	22-23
Dam 48, Cypress, Ind.	38	8	Apr. 5	47.8	22

River and station	Flood stage	Above flood stages -dates From-	To-	Crest * Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Ohio Basin (Cont'd.)					
Ohio (Cont'd.): Mount Vernon, Ind.	35	5	Apr. 6	46.7	22-23
Dam 49, Uniontown, Ky.	37	9	Apr. 7	49.7	22
Shawneetown, Ill.	33	8	Apr. 8	50.8	24
Dam 50, Fords Ferry, Ky.	34	7	Apr. 9		
Dam 51, Golconda, Ill.	40	11	Apr. 6	51.0	26
Paducah, Ky.	39	12	Apr. 5	49.9	19
Dam 52, Brookport, Ill.	37	5	Apr. 7	51.6	19
Dam 53, Grand Chain, Ill.	42	9	Apr. 8	54.9	19
Cairo, Ill.	40	9	Apr. 8	51.5	20
White Basin					
Black: Black Rock, Ark.	14	17	18	14.8	17
Lower Mississippi Basin					
Mississippi: New Madrid, Mo.	34	14	Apr. 7	40.3	21-22, 26-28
Caruthersville, Mo.	32	14	Apr. 8	39.0	26-27
Memphis, Tenn.	34	21	Apr. 6	36.6	29-30
PACIFIC SLOPE DRAINAGE					
Sacramento Basin					
Sacramento: Colusa Weir, Calif.	62	29	30	63.7	29
Tisdale Weir, Calif.	46	29	Apr. 2	47.7	30
Fremont Weir, Calif.	33	30	31	33.7	30
Coquille Basin					
Coquille: Myrtle Point, Oreg.	35	30	31	35.8	31
Columbia Basin					
Pudding: Aurora, Oreg.	20	30	Apr. 4	24.45	31
Tualatin: Dilley, Oreg.	12	29	Apr. 1	12.7	30
Farmington, Oreg.	29	Apr. 1	Apr. 3	29.5	Apr. 2
Johnson Creek: Sycamore, Oreg.	8	30	30	8.5	30

* Provisional
\# Highest Stage Observed
1/ Continued at the end of the month
A Stage Readings Affected by Ice Jams in vicinity of Gage
E Estimated
T Tentative

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	ALBANY, N. Y. 1005 MB						ALBUQUERQUE, N. MEX. 836 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	86	- 2.5	82	264	1.7	31	1,619	1.3	57	84	2.9
1000	31	128			258	2.5	31	153				
950	31	538	- 1.7	72	268	5.6	31	571				
900	31	967	- 2.9	68	282	9.9	31	1,019				
850	31	1,420	- 3.6	62	289	17.1	31	1,487				
800	31	1,898	- 4.8	63	285	22.5	31	1,979	3.2	39	290	2.9
750	31	2,405	- 6.8	61	285	28.0	31	2,495	.3	42	276	15.7
700	31	2,941	- 9.4	61	283	31.1	31	3,049	- 3.4	43	273	19.4
650	31	3,510	-12.5	60	281	35.4	31	3,626	- 7.4	43	269	23.5
600	31	4,119	-15.9	55	282	38.7	31	4,250	-11.3	39	262	27.0
550	31	4,771	-19.9	45	279	41.8	31	4,909	-15.4	40	261	32.6
500	31	5,472	-24.7	40	276	46.4	31	5,625	-20.4	40	259	37.5
450	31	6,230	-30.1		278	50.5	31	6,388	-26.1	37	257	42.9
400	31	7,061	-35.9		278	56.3	31	7,239	-32.3	36	256	46.8
350	31	7,977	-42.3		277	66.5	31	8,169	-38.5		258	51.7
300	31	9,004	-48.8		275	67.0	31	9,212	-45.5		259	64.1
250	31	10,187	-54.3		276	66.3	31	10,407	-53.1		265	67.6
200	31	11,602	-58.0		275	60.0	31	11,830	-56.6		267	64.7
175	31	12,444	-57.1		274	59.5	30	12,679	-56.9		269	62.4
150	31	13,423	-56.1		277	51.7	30	13,653	-58.2		269	58.7
125	31	14,582	-56.3		278	45.9	30	14,791	-61.6		268	55.8
100	31	15,995	-58.0		274	42.7	30	16,163	-64.4		266	48.8
80	31	17,399	-58.6		276	36.5	30	17,526	-64.3		269	41.8
70	30	18,242	-57.8		276	30.5	30	18,350	-62.7		271	28.8
60	30	19,212	-58.3		275	27.2	28	19,298	-62.2		271	18.3
50	30	20,357	-58.9		277	24.3	27	20,427	-62.2		265	15.5
40	30	21,759	-58.1		277	25.1	25	21,814	-59.6		262	14.6
30	30	23,579	-56.8		276	28.6	22	23,627	-55.5		262	21.6
25	30	24,736	-56.1		278	30.5	22	24,795	-53.5		263	29.1
20	30	26,160	-54.6		274	40.0	18	26,211	-51.1		259	40.0
15	25	28,000	-53.0		272	42.4	14	28,070	-49.3		259	59.3
10	9	30,655	-48.5									
7												

Standard pressure surface (mb)	AMARILLO, TEXAS 890 MB						ANCHORAGE, ALASKA 1010 MB						ANNETTE, ALASKA 1008 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,095	3.9	59	231	4.7	31	29	- 5.4	64	298	1.4	31	37	3.0	79	126	1.9
1000	31	140					31	103			193	1.2	31	104			316	1.0
950	31	563					31	503	- 6.2	56	148	1.6	31	516	.2	73	194	3.3
900	31	1,012					31	928	- 7.5	56	198	1.0	31	949	- 2.8	73	225	5.1
850	31	1,474	6.5	45	243	10.5	31	1,372	- 9.2	61	251	2.1	31	1,401	- 5.3	71	236	7.6
800	31	1,970	5.2	37	251	15.5	31	1,840	-11.0	61	263	6.1	31	1,875	- 7.9	69	252	9.3
750	31	2,492	2.6	35	255	19.8	31	2,333	-13.2	57	268	7.2	31	2,372	-11.0	62	261	11.4
700	31	3,050	- 1.0	36	260	22.5	31	2,857	-15.6	56	283	10.5	31	2,902	-13.9	56	267	12.4
650	31	3,631	- 5.1	32	259	24.5	31	3,413	-18.5	56	284	14.4	31	3,456	-17.7	53	269	14.6
600	31	4,260	- 9.2	28	255	30.1	31	4,007	-21.6	55	284	18.8	31	4,056	-21.3	48	275	17.3
550	31	4,923	-13.9		255	33.6	31	4,640	-25.6	52	289	23.3	31	4,692	-25.4	43	278	18.8
500	31	5,645	-18.9		260	37.9	31	5,324	-30.1	51	291	27.4	31	5,380	-30.0	41	279	19.8
450	31	6,412	-24.6		262	43.5	31	6,064	-35.1	54	288	29.9	31	6,116	-35.4		274	22.7
400	31	7,268	-31.0		259	49.7	31	6,882	-40.8		288	31.5	31	6,933	-41.4		272	20.0
350	31	8,201	-37.9		256	56.7	31	7,779	-46.8		289	37.9	31	7,827	-47.5		292	21.0
300	31	9,245	-45.5		257	65.5	31	8,786	-53.1		286	40.4	31	8,833	-52.8		297	22.5
250	31	10,439	-54.2		259	74.4	31	9,950	-56.5		286	45.7	29	10,000	-56.0		301	24.5
200	31	11,857	-57.3		260	73.4	31	11,372	-64.3		276	30.9	28	11,420	-56.3		306	25.1
175	31	12,701	-57.5		260	70.1	31	12,229	-53.3		281	31.3	28	12,270	-55.1		306	21.4
150	31	13,672	-58.9		263	64.5	31	13,222	-53.2		281	26.0	28	13,254	-55.2		303	21.0
125	31	14,808	-61.6		263	63.0	31	14,393	-53.9		279	26.8	28	14,418	-55.1		304	18.3
100	30	16,181	-64.7		262	56.7	31	15,828	-53.9		275	28.0	28	15,841	-55.7		301	18.1
80	31	17,556	-63.6		262	52.6	31	17,256	-55.0		283	23.9	28	17,259	-56.6		299	16.7
70	30	18,385	-64.1		260	48.6	31	18,112	-55.3		287	21.6	28	18,105	-57.2		294	17.3
60	30	19,323	-63.9		261	43.1	31	19,090	-56.0		286	21.6	26	19,074	-57.5		290	17.7
50	30	20,453	-61.9		263	35.2	30	20,248	-57.0		292	20.6	26	20,223	-58.3		296	18.5
40	30	21,840	-59.7		262	28.8	29	21,654	-58.2		299	21.8	25	21,627	-59.7		298	18.3
30	30	23,668	-55.0		262	21.6	26	23,448	-59.5		300	22.7	23	23,417	-60.8		302	16.5
25	30	24,835	-53.5		263	27.0	25	24,587	-59.8		297	23.9	19	24,557	-61.6		303	19.6
20	30	26,277	-50.1		276	31.1	20	25,987	-60.0		301	25.3	18	25,937	-61.4		303	19.6
15	25	28,201	-47.3				15	27,787	-60.8		306	30.3	16	27,723	-60.9		302	21.6
10	11	28,201	-47.3				7	30,322	-60.4				11	30,249	-60.4			
7													5	32,496	-57.3			

Standard pressure surface (mb)	ATHENS, GA. 991 MB						BARROW, ALASKA 1017 MB						BARTER IS., ALASKA 1017 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	246	8.2	79	273	2.7	29	8	-29.0	59	209	3.3	29	15	-28.1	74	246	3.1
1000	31	169					29	125	-26.0	60	247	6.0	29	137	-25.2	62	265	5.6
950	31	599	11.1	60	258	11.3	29	506	-22.8	60	261	7.0	29	515	-21.5	60	271	10.5
900	31	1,047	9.3	55	258	14.4	29	897	-21.5	60	263	9.3	29	911	-20.6	57	273	13.4
850	31	1,519	7.1	49	265	16.5	29	1,318	-21.6	59	261	9.7	29	1,334	-20.7	58	275	15.0
800	31	2,017	5.2	37	264	18.7	29	1,765	-22.1	59	260	11.1	29	1,781	-22.0	57	275	16.1
750	31	2,541	2.5		263	22.7	29	2,241	-23.4	56	263	11.9	29	2,255	-23.2	54	277	16.5
700	31	3,097	- .2		266	27.4	29	2,741	-25.3	52	263	15.0	29	2,758	-25.2	54	278	17.3
650	31	3,682	- 3.5		269	31.9	29	3,275	-27.9	50	260	17.9	29	3,291	-27.8	56	280	20.4
600	31	4,316	- 7.0		266	40.2	29	3,848	-31.2	47	264	20.6	29	3,866	-30.9	56	280	23.1
550	31	4,981	-11.4		265	44.3	29	4,458	-34.7	44	266	22.0	29	4,475	-34.3	54	277	26.4
500	31	5,715	-16.2		264	50.1	29	5,121	-38.8		268	23.1	29	5,140	-38.3	54	279	29.1
450	31	6,496	-21.4		264	57.3	29	5,840	-43.2		266	26.0	29	5,854	-43.0		280	30.9
400	31	7,360	-27.4		265	59.7	29	6,623	-48.1		270	29.0	29	6,644	-47.9		280	35.9
350	31	8,308	-34.2		264	67.2	29	7,495	-52.2		271	32.3	29	7,515	-52.9		280	39.4
300	31	9,358	-42.6		263	72.9	29	8,486	-54.5		274	32.6	29	8,500	-56.0		279	39.8
250	31	10,576	-50.8		267	77.5	29	9,656	-53.0		275	32.1	29	9,662	-54.3		284	37.7
200	31	12,004	-56.9		270	88.2	29	11,102	-50.9		277	27.8	28	11,102	-51.7		284	34.2
175	31	12,847	-58.5		271	67.4	29	11,972	-50.8		274	28.6	28	11,968	-51.4		288	31.5
150	30	13,812	-61.0		272	76.6	29	12,974	-51.3		273	28.4	28	12,968	-51.6		289	29.7
125	30	14,937	-64.2		273	61.8	28	14,154	-52.0		275	27.8	28	14,150	-52.2		289	31.3
100	30	16,294	-66.8		274	56.0	28	15,597	-52.6		273	29.3	28	15,591	-52.9		289	29.1
80	30	17,643	-66.6		271	40.4	27	17,035	-53.7		277	30.5	28	17,026	-54.1		289	29.5
70	30	18,459	-65.5		270	34.4	27	17,899	-54.4		277	31.3	28	17,878	-54.8		290	30.7
60	30	19,395	-63.3		273	24.7	27	18,877	-55.4		280	31.3	28	18,863	-55.7		291	30.3
50	30	20,525	-60.1		272	18.1	24	20,034	-56.5		277	32.4	28	20,021	-56.9		291	29.3
40	29	21,926	-57.2		271	18.3	23	21,460	-57.7		276	32.3	27	21,427	-58.3		293	31.7
30	28	23,761	-54.1		279	20.0	20	23,293	-58.6		278	32.4	24	23,241	-59.8		301	29.7
25	26	24,937	-52.4		277	17.9	18	24,451	-59.6		280	30.7	20	24,417	-60.5		307	29.0
20	23	26,393	-50.2		279	25.1	18	25,843	-60.6		282	29.9	16	25,824	-61.5		305	30.5
15	18	28,271	-47.7		274	36.7	16	27,617	-62.1		283	36.9	9	27,637	-63.0			
10	8	30,976	-42.7				6	30,153	-62.2									

Standard pressure surface (mb)	BETHEL, ALASKA 1010 MB						BISMARCK, N. DAK. 953 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	39	-10.4	84	31	1.7	31	505	- 2.9	77	10	1.4
1000	30	113			325	3.7	31	116				
950	30	511	- 8.1	68		.0	31	528			337	.8
900	30	930	- 8.7	70	287	4.3	31	958	.2	58	288	8.2
850	30	1,373	- 9.9	68	284	6.4	31	1,416	- .3	51	296	13.8
800	30	1,839	-11.7	66	281	8.4	31	1,899	- 3.0	48	298	17.3
750	30	2,330	-13.6	61	276	11.5	31	2,405	- 6.1	48	300	18.7
700	30	2,854	-16.0	58	278	12.6	31	2,944	- 9.8	48	299	21.4
650	30	3,407	-18.7	58	279	15.2	31	3,506	-13.6	42	298	26.0
600	30	4,004	-21.6	53	264	18.5	31	4,116	-17.5	39	293	27.6
550	30	4,638	-25.4	54	270	19.4	31	4,755	-22.0	35	290	31.3
500	30	5,327	-29.7	52	270	23.5	31	5,457	-26.8		285	32.1
450	30	6,064	-34.6	52	267	24.5	31	6,199	-32.5		284	35.9
400	30	6,886	-40.1		264	31.5	31	7,029	-38.8		284	40.1
350	30	7,786	-46.0		267	34.0	31	7,932	-45.7		283	41.4
300	30	8,797	-51.9		270	38.9	31	8,942	-52.9		282	43.7
250	30	9,967	-55.7		275	46.2	31	10,104	-57.0		278	45.9
200	29	11,393	-54.9		276	40.4	31	11,515	-56.7		278	43.7
175	28	12,248	-53.7		277	37.1	31	12,363	-56.0		275	45.7
150	28	13,239	-53.3		274	31.7	31	13,345	-54.9		276	43.5
125	27	14,404	-53.1		274	27.2	31	14,509	-55.1		278	39.2
100	26	15,741	-53.8		271	26.8	30	15,937	-55.8		274	37.3
80	26	17,271	-54.6		274	26.6	30	17,354	-57.1		275	32.8
70	26	18,123	-54.8		270	23.7	30	18,195	-57.4		276	30.5
60	26	19,111	-55.0		275	26.0	30	19,171	-58.0		278	28.6
50	26	20,274	-55.3		277	24.7	30	20,320	-58.1		274	27.4
40	26	21,692	-56.9		280	27.2	29	21,723	-59.0		277	27.2
30	25	23,503	-58.4		279	29.1	29	23,528	-58.9		277	31.3
25	20	24,660	-58.4		290	27.2	28	24,667	-58.8		275	33.2
20	16	26,070	-59.8		276	26.4	25	26,083	-57.3		273	40.0
15	12	27,839	-60.9				24	27,909	-55.9		270	51.3
10							9	30,517	-53.9			

Standard pressure surface (mb)	BOISE, IDAHO 915 MB						BROWNSVILLE, TEXAS 1014 MB						BUFFALO, N. Y. 989 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	868	2.9	61	149	2.7	31	7	18.6	87	132	5.4	31	218	- .4	80	229	3.9
1000	31	137					31	128	18.9	84	136	9.1	31	129				
950	31	558					31	564	17.0	81	162	16.9	31	543	- .4	73	249	12.2
900	31	999	4.1	52	162	2.9	31	1,030	16.5	69	179	15.9	31	973	- 1.1	70	272	16.9
850	31	1,462	2.0	49	258	3.5	31	1,516	14.7	53	185	16.1	31	1,428	- 2.3	69	280	20.6
800	31	1,949	- 1.4	51	268	7.2	31	2,027	12.8	46	198	10.9	31	1,908	- 4.1	61	276	25.3
750	31	2,461	- 5.2	52	268	10.7	31	2,560	11.0	35	221	9.1	31	2,417	- 6.1	60	279	29.5
700	31	2,998	- 8.9	54	265	12.6	31	3,139	7.8	37	247	8.9	31	2,955	- 9.1	58	279	31.9
650	31	3,566	-12.8	54	265	13.8	31	3,739	3.7	37	254	15.7	31	3,519	-12.3	51	281	34.4
600	31	4,174	-17.1	51	258	15.3	31	4,391	- 1.1	37	258	19.6	31	4,130	-15.7	47	277	38.7
550	31	4,823	-21.5	45	258	19.2	31	5,069	- 6.0	33	260	23.9	31	4,777	-19.6	45	276	40.2
500	31	5,517	-26.6	43	255	21.0	31	5,820	-10.8		260	28.0	31	5,484	-24.4	41	278	45.1
450	31	6,257	-32.2	40	258	24.5	31	6,613	-16.4		259	33.0	31	6,239	-29.9	39	274	51.9
400	31	7,091	-38.4		263	26.6	31	7,498	-23.1		257	39.2	31	7,072	-36.0		274	61.0
350	31	7,996	-45.0		272	28.2	31	8,461	-30.4		257	45.5	31	7,987	-42.4		273	72.7
300	31	9,011	-51.8		270	32.8	31	9,539	-38.7		258	51.7	31	9,015	-48.8		276	74.3
250	31	10,177	-57.6		267	36.1	31	10,765	-48.2		261	59.8	31	10,198	-54.3		276	78.9
200	31	11,577	-59.2		270	32.3	31	12,206	-56.3		263	69.9	31	11,617	-57.3		275	71.9
175	30	12,421	-57.9		273	34.2	31	13,048	-59.4		262	65.3	31	12,463	-56.8		274	69.2
150	30	13,395	-57.2		270	33.4	31	14,044	-63.4		259	60.4	31	13,442	-55.9		274	63.0
125	30	14,547	-57.6		270	31.1	31	15,108	-69.2		258	52.3	29	14,597	-56.2		272	55.4
100	30	15,952	-58.4		270	26.2	29	16,424	-74.2		260	41.0	29	16,013	-57.5		273	46.6
80	30	17,355	-58.6		266	24.7	27	17,722	-75.5		259	24.9	29	17,419	-56.2		270	33.6
70	29	18,203	-58.9		265	21.0	26	18,507	-73.1		258	17.9	29	18,262	-58.3		270	29.7
60	28	19,165	-58.8		267	17.9	25	19,409	-68.9		260	9.7	28	19,229	-58.6		272	25.3
50	26	20,312	-59.3		271	15.5	24	20,513	-62.9		267	2.3	28	20,376	-58.0		268	21.2
40	25	21,706	-59.9		269	13.8	24	21,907	-57.5		102	1.9	28	21,783	-57.9		271	23.9
30	24	23,507	-59.0		262	18.1	23	23,743	-52.7		75	3.5	27	23,600	-56.6		270	24.7
25	24	24,653	-58.2		268	24.5	23	24,929	-49.6		55	4.7	27	24,759	-56.0		270	29.3
20	21	26,070	-56.4		271	32.4	22	26,401	-46.4		77	7.4	27	26,183	-54.2		268	30.5
15	17	27,915	-53.9		270	40.2	22	28,329	-42.0		74	8.9	24	28,049	-52.3		269	41.0
10							20	31,104	-37.3		163	2.9	9	30,684	-47.9			
7							16	33,583	-31.6		83	4.3						
5							6	35,993	-25.1									

Standard pressure surface (mb)	BURRWOOD, LA. 1018 MB						CANTON IS., PACIFIC AREA 1009 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	3	15.2	89	117	3.1	31	4	26.8	80	49	11.5
1000	31	158	17.4	77	121	5.6	31	87	26.1	81	58	13.0
950	31	596	16.0	61	166	10.7	31	584	22.8	82	83	18.7
900	31	1,054	14.5	48	190	10.3	31	1,010	19.5	82	86	21.8
850	31	1,535	12.2	46	214	10.9	31	1,501	16.7	74	87	23.5
800	31	2,041	9.6	44	235	12.8	31	2,017	15.2	53	86	21.2
750	31	2,572	6.8	42	242	12.8	31	2,558	13.2	36	85	19.4
700	31	3,139	4.6	31	256	15.3	31	3,140	10.2	31	78	9.5
650	31	3,736	1.4	29	264	19.0	31	3,750	6.6	29	80	6.4
600	31	4,379	- 2.6		258	26.0	31	4,406	3.0		100	5.2
550	31	5,057	- 6.8		264	29.0	31	5,102	- .8		115	6.0
500	31	5,800	-11.7		264	32.6	31	5,861	- 5.2		116	4.9
450	31	6,594	-17.4		262	39.6	31	6,679	- 9.9		123	2.7
400	31	7,470	-23.9		263	45.9	31	7,583	-15.7			.0
350	31	8,433	-31.2		261	53.2	31	8,576	-22.9		247	2.7
300	31	9,505	-39.5		262	62.0	31	9,687	-31.4		245	5.8
250	31	10,726	-48.9		261	67.2	31	10,951	-41.6		196	7.2
200	31	12,161	-56.4		266	76.2	30	12,426	-53.7		207	11.3
175	30	13,005	-58.4		264	75.6	30	13,271	-60.7		225	9.5
150	30	13,963	-62.1		264	72.1	30	14,213	-68.1		250	10.9
125	30	15,076	-67.3		262	61.2	30	15,286	-75.9		268	15.3
100	30	16,406	-71.2		265	52.5	30	16,551	-83.0		249	11.3
80	30	17,725	-72.1		264	36.5	29	17,795	-79.2		265	3.3
70	29	18,532	-70.0		262	27.2	29	18,559	-76.4		314	2.1
60	29	19,444	-66.1		263	18.1	29	19,451	-73.7		105	1.7
50	28	20,565	-61.6		281	5.4	29	20,525	-70.0		82	21.6
40	28	21,964	-56.3		105	1.2	28	21,869	-64.7		92	49.0
30	28	23,810	-51.6		163	1.7	28	23,658	-57.3		90	68.0
25	25	25,004	-49.8		210	1.2	28	24,821	-53.4		92	72.7
20	23	26,478	-46.6		185	1.6	26	26,273	-49.1		91	74.2
15	20	28,403	-41.9		301	7.0	25	28,196	-41.8		95	41.2
10	21	31,184	-37.1		262	14.2	24	30,968	-38.8		148	1.9
7	16	33,668	-30.9		265	29.3	22	33,417	-36.7		69	5.4
5	6	36,060	-26.8				20	35,749	-33.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	CAPE HATTERAS, N. C. 1018 MB						CARIBOU, ME. 990 MB						CHARLESTON, S. C. 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	4	10.4	85	293	2.9	31	191	-10.8	82	299	3.7	31	13	11.0	81	246	2.7
1000	31	149	12.4	72	266	6.2	31	114	-14.4				31	162	13.5	72	227	4.1
950	31	576	11.1	56	256	15.2	31	508	- 7.7	65	298	6.4	31	595	13.1	56	253	8.2
900	31	1,029	8.7	54	265	16.7	31	932	- 8.6	62	297	10.5	31	1,048	10.8	51	261	12.2
850	31	1,499	5.9	51	268	19.0	31	1,375	- 9.2	56	299	16.3	31	1,523	8.7	43	258	15.5
800	31	1,993	3.2	48	262	22.5	31	1,844	- 9.9	53	296	19.6	31	2,023	6.5	36	266	17.3
750	31	2,513	.9	39	264	28.4	31	2,340	-11.7	50	294	23.3	31	2,552	3.8		266	20.4
700	31	3,066	- 1.7	36	267	30.1	31	2,867	-13.9	49	292	25.8	31	3,109	1.1		267	24.7
650	31	3,649	- 4.7		269	34.4	31	3,425	-16.7	45	291	29.7	31	3,701	- 1.8		268	31.3
600	31	4,279	- 8.0		269	39.6	31	4,026	-19.6	44	289	33.2	31	4,336	- 5.5		269	35.9
550	31	4,944	-12.3		269	43.5	31	4,659	-23.6	43	287	37.1	31	5,009	-10.2		270	40.0
500	31	5,673	-17.0		265	50.1	31	5,358	-27.8	41	284	39.2	31	5,741	-15.2	36	271	45.1
450	31	6,449	-22.4		270	50.5	31	6,105	-33.0	42	281	44.9	31	6,525	-20.8	38	270	49.4
400	31	7,310	-28.7		270	56.0	31	6,928	-39.1		281	47.0	31	7,392	-26.7	39	271	55.4
350	31	8,253	-35.5		269	63.9	31	7,831	-45.5		279	53.6	31	8,343	-33.4	36	271	60.6
300	31	9,309	-43.1		269	71.1	31	8,844	-51.4		277	57.5	31	9,408	-41.3		271	70.9
250	31	10,516	-51.3		273	79.1	31	10,020	-53.4		271	67.0	31	10,622	-50.4		273	79.9
200	31	11,944	-57.1		278	87.6	31	11,455	-53.5		276	58.1	31	12,051	-57.4		277	85.1
175	30	12,784	-57.8		278	79.9	31	12,315	-52.5		276	55.8	31	12,892	-58.9		276	75.8
150	30	13,752	-59.9		282	74.8	31	13,311	-52.6		274	48.8	31	13,854	-61.7		273	78.9
125	30	14,883	-62.6		278	64.1	31	14,489	-52.4		271	43.3	31	14,973	-65.0		276	68.2
100	30	16,252	-64.2		275	49.5	31	15,929	-53.6		271	39.4	30	16,325	-67.5		275	55.0
80	30	17,614	-64.7		275	36.9	30	17,356	-54.6		270	34.4	30	17,668	-67.5		273	40.6
70	30	18,438	-62.9		274	25.8	30	18,213	-55.4		273	32.3	29	18,492	-65.8		274	31.7
60	30	19,385	-61.1		274	25.6	29	19,194	-55.8		273	29.1	29	19,421	-63.1		268	23.3
50	30	20,526	-58.0		275	21.2	29	20,354	-56.3		271	23.7	29	20,554	-59.1		270	15.0
40	29	21,942	-55.6		276	21.8	28	21,770	-55.9		272	27.4	29	21,966	-55.8		277	9.7
30	29	23,787	-52.9		278	21.8	28	23,601	-56.1		271	24.3	29	23,812	-52.5		272	12.6
25	29	24,966	-51.6		276	22.7	27	24,773	-54.5		263	24.7	29	24,994	-50.9		268	13.8
20	26	26,422	-49.0		273	27.6	26	26,208	-54.3		261	27.4	29	26,457	-47.7		267	19.0
15	24	28,326	-45.4		275	34.6	24	28,058	-52.3		265	31.5	24	28,356	-44.6		272	26.4
10	21	31,069	-38.8		269	54.0	23	30,698	-47.7		264	50.3						
7	13	33,544	-33.7				19	33,058	-41.9		267	62.2						
5							10	35,314	-37.6									

Standard pressure surface (mb)	COLD BAY, ALASKA 1014 MB						COLUMBIA, MO. 986 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	30	.4	87	236	6.0	31	238	4.2	78	221	.6
1000	31	138			235	6.0	31	124				
950	31	545	- 1.6	71	235	14.2	31	542	5.4	66	231	6.4
900	31	978	- 3.7	69	260	17.3	31	983	4.3	59	262	13.6
850	31	1,428	- 5.3	62	265	22.7	31	1,449	3.5	50	270	19.6
800	31	1,902	- 7.3	56	266	27.0	31	1,938	1.2	47	272	22.2
750	31	2,400	- 9.6	53	262	29.9	31	2,456	- 1.5	45	273	23.9
700	31	2,934	-11.8	48	255	33.6	31	3,002	- 5.0	42	272	26.4
650	31	3,494	-14.6	46	250	45.3	31	3,577	- 8.5	39	270	31.1
600	31	4,101	-18.2	45	251	51.7	31	4,197	-12.6	38	274	33.2
550	31	4,742	-22.2	44	244	52.8	31	4,851	-16.7		263	37.1
500	31	5,440	-26.9	42	255	50.7	31	5,567	-21.5		261	40.4
450	31	6,185	-32.0		259	50.3	31	6,327	-26.7		264	43.7
400	31	7,016	-37.7		259	56.2	31	7,176	-32.9		261	46.6
350	31	7,926	-43.8		260	57.3	31	8,102	-39.6		258	52.7
300	31	8,945	-50.7		251	53.4	31	9,140	-47.2		264	54.4
250	31	10,117	-56.2		258	50.9	31	10,327	-54.1		263	59.8
200	31	11,524	-58.3		249	52.3	31	11,743	-57.6		270	61.4
175	30	12,357	-56.3		252	39.2	30	12,576	-57.3		269	63.3
150	29	13,345	-55.1		252	26.8	29	13,549	-57.1		273	61.6
125	29	14,506	-56.8		259	24.9	29	14,697	-59.1		274	54.4
100	26	15,931	-55.6		259	23.3	29	16,090	-60.8		272	44.9
80	26	17,354	-55.2		272	16.9	29	17,473	-61.8		271	37.5
70	26	18,204	-55.9		274	14.0	29	18,300	-60.8		271	34.2
60	26	19,186	-55.8		283	16.1	29	19,262	-60.9		272	29.0
50	26	20,345	-56.1		281	9.9	27	20,401	-60.4		277	20.4
40	25	21,759	-56.9		311	16.3	25	21,806	-58.7		275	19.0
30	24	23,574	-58.5		315	17.7	25	23,626	-55.9		266	24.9
25	24	24,719	-58.8		306	17.3	23	24,778	-54.1		263	26.8
20	22	26,119	-59.1		309	25.3	22	26,210	-52.7		265	34.8
15	20	27,918	-59.0		290	21.8	20	28,072	-50.0		267	49.4
10	17	30,487	-57.8		285	24.7	6	30,720	-44.6			
7	12	32,782	-56.3									
5	6	34,878	-56.0									

Standard pressure surface (mb)	DAYTON, OHIO 980 MB						DENVER, COLO. 834 MB						DODGE CITY, KANS. 923 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	297	3.0	77	218	2.1	31	1,611	- 2.1	63	209	2.3	29	792	3.3	68	251	3.1
1000	31	133					31	145					29	139				
950	31	552	3.9	68	236	9.5	31	562					29	557				
900	31	983	3.0	60	255	16.5	31	999					29	1,001	6.0	51	238	6.8
850	31	1,451	1.0	57	262	19.8	31	1,461					29	1,470	5.7	44	255	13.0
800	31	1,937	- 1.2	54	267	22.5	31	1,949	1.8	43	276	4.1	29	1,964	3.9	41	264	16.1
750	31	2,449	- 4.1	54	268	25.6	31	2,464	- 1.2	40	284	7.6	29	2,485	.9	42	263	18.8
700	31	2,992	- 6.9	54	265	28.2	31	3,013	- 5.1	41	284	12.0	29	3,037	- 2.7	41	265	22.3
650	31	3,563	-10.1	50	264	32.3	31	3,589	- 9.2	42	285	17.5	29	3,616	- 6.9	41	265	25.5
600	31	4,180	-13.5	44	264	37.5	31	4,206	-13.4	39	286	20.8	29	4,240	-11.2	38	257	26.2
550	31	4,836	-17.4	42	266	41.8	31	4,858	-18.0	34	277	23.7	29	4,899	-15.7	38	253	28.6
500	31	5,546	-22.0		264	47.2	31	5,567	-23.2	34	277	23.5	29	5,616	-20.7	36	259	31.7
450	31	6,306	-27.3	41	264	52.1	31	6,322	-29.2	35	271	25.5	29	6,378	-26.1		259	36.3
400	31	7,153	-33.0		263	56.2	31	7,160	-35.7		268	30.5	29	7,230	-32.5		257	43.1
350	31	8,079	-39.8		269	55.4	31	8,076	-41.9		266	35.6	29	8,157	-39.4		258	48.6
300	31	9,115	-47.1		266	62.6	31	9,104	-49.3		263	41.4	29	9,196	-46.8		258	56.7
250	31	10,303	-53.6		266	63.1	31	10,281	-55.3		264	45.3	29	10,384	-53.8		258	63.1
200	31	11,720	-57.4		272	64.5	31	11,695	-57.5		261	49.7	29	11,802	-57.4		258	70.1
175	31	12,563	-57.1		277	62.6	31	12,539	-57.2		262	56.2	28	12,642	-57.0		260	70.3
150	31	13,538	-57.5		279	55.8	31	13,514	-57.0		262	55.2	27	13,619	-57.1		262	64.9
125	31	14,685	-58.9		278	45.9	31	14,666	-58.1		262	51.5	27	14,766	-59.6		264	61.0
100	31	16,080	-60.5		273	39.1	31	16,065	-59.8		264	49.0	26	16,153	-61.3		266	49.0
80	31	17,469	-60.9		275	32.3	31	17,458	-60.6		266	32.3	26	17,534	-61.9		266	37.7
70	31	18,301	-60.6		271	27.2	31	18,294	-60.0		266	27.4	24	18,353	-61.5		265	32.3
60	31	19,259	-60.4		271	25.3	31	19,253	-60.3		266	22.5	24	19,311	-61.0		265	25.6
50	30	20,401	-58.7		275	22.0	31	20,393	-60.0		268	20.0	24	20,447	-60.1		268	20.0
40	30	21,803	-58.1		267	23.7	28	21,787	-59.0		268	19.4	23	21,844	-58.9		266	18.3
30	29	23,628	-56.1		268	24.3	25	23,597	-57.1		266	23.5	21	23,649	-56.0		262	21.2
25	28	24,791	-55.5		272	27.2	25	24,754	-56.1		268	29.5	20	24,800	-53.9		262	26.6
20	25	26,217	-53.6		268	34.4	25	26,181	-53.8		270	36.7	13	26,249	-50.8		265	33.8
15	21	28,087	-51.0		269	43.1	21	28,073	-50.0		271	47.4	11	28,133	-48.3		269	45.5
10	16	30,742	-46.5		265	56.5	16	30,750	-47.9		276	63.5	5	30,820	-43.7			
7	5	33,189	-44.1				7	33,092	-47.2									

Standard pressure surface (mb)	EL PASO, TEXAS 882 MB						ELY, NEV. 805 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	1,193	7.6	38	290	2.5	31	1,908	- 4.5	69	186	6.8
1000	30	137					31	171				
950	30	564					31	586				
900	30	1,021					31	1,025				
850	30	1,496	9.8	29	283	4.5	31	1,481				
800	30	1,997	7.1	30	259	10.7	31	1,963			185	6.4
750	30	2,523	4.0	30	254	17.1	31	2,475	- 3.0	48	191	4.5
700	30	3,082	.4	31	252	22.3	31	3,018	- 6.4	46	253	5.6
650	30	3,669	- 3.3		250	28.6	31	3,592	- 9.9	43	264	10.7
600	30	4,302	- 7.3		251	33.0	31	4,207	-13.6	39	276	13.0
550	30	4,965	-12.0		251	36.3	31	4,862	-17.9		274	15.9
500	31	5,698	-16.7		254	45.5	31	5,568	-23.1		273	18.5
450	31	6,474	-21.9		255	52.1	31	6,326	-28.7		280	21.4
400	31	7,339	-28.2		256	52.7	31	7,164	-34.9		267	24.9
350	31	8,284	-35.0		257	60.6	31	8,082	-41.8		257	24.1
300	31	9,342	-43.1		256	70.1	31	9,110	-48.8		261	26.8
250	31	10,547	-52.1		256	76.9	31	10,289	-55.4		268	31.7
200	31	11,969	-58.0		257	83.5	31	11,701	-58.1		272	36.3
175	31	12,815	-59.2		258	79.9	30	12,541	-57.8		267	40.8
150	31	13,777	-61.4		258	76.9	30	13,516	-56.9		265	41.2
125	31	14,899	-64.7		258	69.2	30	14,668	-58.1		267	37.7
100	31	16,252	-67.3		261	52.8	30	16,068	-59.3		265	33.0
80	31	17,596	-68.0		262	41.4	29	17,462	-59.9		266	28.0
70	31	18,400	-66.8		259	32.3	29	18,305	-59.7		267	23.5
60	31	19,335	-66.2		260	22.0	29	19,262	-59.4		270	20.2
50	31	20,449	-64.0		269	15.3	29	20,403	-59.5		263	17.3
40	31	21,832	-59.6		264	11.1	28	21,800	-58.8		266	14.4
30	31	23,652	-54.9		267	13.8	28	23,616	-56.2		272	19.0
25	31	24,827	-52.8		267	18.7	28	24,779	-54.7		270	22.2
20	31	26,273	-50.3		268	23.5	28	26,213	-52.4		270	29.5
15	31	28,170	-47.6		258	35.9	18	28,055	-49.5			
10	31	30,811	-44.2									

Standard pressure surface (mb)	FAIRBANKS, ALASKA 1000 MB						FLINT, MICH. 987 MB						FORT WORTH, TEXAS 996 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	135	-15.5	73	315	1.4	31	234	- 1.2	83	229	2.1	31	180	11.5	64	207	2.7
1000	31	136			59	.6	31	131					31	142				
950	31	518	-12.5	57	211	1.3	31	544	.1	68	258	6.2	31	574	12.7	56	206	8.7
900	31	934	-13.6	56	232	6.2	31	974	- .4	59	274	10.3	31	1,026	11.6	48	227	11.9
850	31	1,368	-14.5	55	252	9.1	31	1,430	- 1.9	55	273	15.2	31	1,502	9.9	39	240	12.6
800	31	1,826	-16.1	54	256	11.7	31	1,911	- 4.0	51	277	19.0	31	2,004	7.3	36	249	14.6
750	31	2,307	-17.8	53	260	13.6	31	2,419	- 6.3	51	278	21.2	31	2,531	4.3	32	261	15.7
700	31	2,825	-20.1	51	262	16.5	31	2,956	- 8.9	48	277	23.7	31	3,090	1.0	32	254	20.0
650	31	3,367	-23.0	48	264	19.0	31	3,526	-11.9	46	277	27.0	31	3,679	- 2.9	33	255	25.3
600	31	3,954	-26.3	46	265	21.2	31	4,135	-15.7	44	276	29.3	31	4,311	- 7.0	32	257	30.1
550	31	4,572	-30.1	45	267	23.9	31	4,782	-19.8	41	272	34.0	31	4,979	-11.3		255	37.9
500	31	5,251	-34.4	45	267	28.8	31	5,487	-24.4	37	272	37.1	31	5,709	-16.2		257	44.7
450	31	5,976	-39.0		267	32.6	31	6,238	-30.1		272	41.0	31	6,487	-21.8		262	50.5
400	31	6,782	-44.1		269	38.3	31	7,074	-36.1		270	48.0	31	7,351	-28.1		262	57.3
350	31	7,666	-49.8		274	46.6	31	7,989	-42.4		267	55.6	31	8,295	-35.1		264	62.6
300	31	8,663	-55.0		279	48.0	31	9,017	-48.7		266	65.7	31	9,353	-42.8		264	67.0
250	31	9,822	-55.9		282	47.2	31	10,201	-53.7		268	69.9	31	10,559	-51.6		268	73.3
200	31	11,251	-53.2		284	40.0	31	11,624	-56.7		269	66.6	31	11,983	-57.5		269	78.5
175	31	12,112	-52.8		284	36.5	31	12,471	-56.1		271	62.4	31	12,823	-59.0		268	79.7
150	31	13,107	-52.8		284	34.2	31	13,450	-56.0		271	57.5	31	13,787	-60.7		270	78.5
125	29	14,288	-52.7		281	32.3	30	14,613	-56.3		272	49.9	31	14,911	-64.7		271	65.9
100	29	15,727	-53.2		284	31.5	30	16,028	-56.9		269	42.4	31	16,263	-67.5		271	55.2
80	29	17,160	-54.6		285	29.9	30	17,438	-58.2		269	34.8	31	17,607	-67.6		271	43.9
70	29	18,008	-55.6		285	29.3	30	18,280	-58.5		270	32.4	31	18,422	-67.4		272	30.7
60	29	18,995	-56.1		286	28.4	30	19,248	-58.1		272	28.2	30	19,345	-65.4		272	21.6
50	27	20,150	-56.6		288	26.4	28	20,390	-58.0		275	24.9	30	20,463	-62.1		276	16.1
40	27	21,560	-58.4		295	24.7	27	21,798	-57.8		272	25.3	29	21,849	-58.5		268	15.0
30	26	23,358	-60.1		292	28.6	27	23,620	-56.6		271	30.9	29	23,678	-54.5		258	20.4
25	25	24,489	-60.7		296	26.8	26	24,774	-55.5		270	32.4	29	24,851	-52.1		266	19.2
20	21	25,890	-61.1		297	34.0	23	26,218	-54.0		264	37.3	29	26,306	-49.2		273	23.7
15	19	27,686	-61.6		295	37.3	12	28,054	-51.6				22	28,209	-45.6		270	29.0
10	10	30,282	-60.8										5	30,954	-39.3			
7	5	32,534	-60.4															
5																		

Standard pressure surface (mb)	GLASGOW, MONT. 930 MB						GRAND JUNCTION, COLO. 850 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	696	- 1.4	81	55	1.7	31	1,474	1.5	59	135	3.1
1000	31	110					31	145				
950	31	524					31	564				
900	31	959	1.0	61	281	6.6	31	1,010				
850	31	1,419	.3	52	298	14.8	31	1,476			131	4.5
800	31	1,902	- 3.0	52	300	16.5	31	1,965	1.4	45	169	6.2
750	31	2,403	- 6.5	52	301	18.1	31	2,481	- 1.9	46	224	6.0
700	31	2,946	-10.2	50	300	19.8	31	3,027	- 5.8	48	246	8.5
650	31	3,508	-14.1	47	294	21.0	31	3,600	-10.1	49	247	12.4
600	31	4,115	-18.0	46	292	22.0	31	4,216	-14.3	43	255	18.1
550	31	4,753	-22.5	40	289	23.7	31	4,865	-18.6	37	259	20.2
500	31	5,452	-27.5	37	287	26.8	31	5,574	-23.5		263	21.8
450	31	6,194	-33.3		287	30.5	31	6,330	-29.2		272	24.7
400	31	7,018	-39.7		284	29.9	31	7,167	-35.5		272	28.8
350	31	7,917	-46.5		285	32.1	31	8,083	-42.5		272	34.4
300	31	8,922	-53.7		286	35.6	31	9,106	-50.1		275	38.5
250	31	10,079	-58.1		286	39.8	31	10,280	-55.5		272	48.2
200	31	11,484	-57.2		283	38.5	31	11,694	-57.4		265	46.2
175	31	12,334	-56.4		281	35.4	31	12,538	-56.6		262	47.4
150	31	13,312	-55.6		281	33.4	31	13,516	-56.9		262	50.5
125	31	14,473	-55.6		276	32.4	31	14,666	-59.0		261	45.9
100	29	15,891	-56.1		280	31.3	30	16,061	-61.2		262	38.7
80	29	17,308	-56.3		278	29.1	29	17,442	-61.2		264	35.0
70	29	18,148	-57.4		276	27.2	29	18,281	-60.5		264	25.8
60	29	19,127	-57.7		277	27.4	27	19,231	-60.6		261	24.1
50	27	20,275	-58.3		282	25.8	27	20,365	-60.5		267	16.7
40	27	21,679	-59.0		280	26.4	25	21,757	-59.6		271	15.3
30	26	23,507	-58.7		270	26.0	24	23,567	-57.2		265	21.6
25	24	24,664	-58.9		269	26.6	24	24,732	-55.6		269	27.6
20	22	26,075	-57.9				23	26,161	-53.1		267	33.4
15	20	28,014	-50.5				20	28,014	-50.5		268	42.9
10	19	30,676	-45.7				19	30,676	-45.7		269	59.7
7	17	33,072	-43.0				17	33,072	-43.0		264	73.4
5	14	35,355	-39.4				14	35,355	-39.4			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	GREAT FALLS, MONT. 884 MB						GREEN BAY, WIS. 988 MB						GREENSBORO, N. C. 986 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,123	.3	60	222	9.5	31	210	- 4.8	91	340	.6	31	273	6.0	78	238	2.7
1000	31	117					31	116					31	157				
950	31	535					31	525	- 1.8	67	278	2.7	31	584	9.7	55	252	10.1
900	31	972					31	953	- 2.0	57	286	6.8	31	1,028	7.8	53	263	16.1
850	31	1,435	.9	46	235	18.1	31	1,406	- 3.0	49	287	8.5	31	1,498	5.4	53	267	19.4
800	31	1,919	- 2.2	49	257	14.8	31	1,885	- 4.6	50	290	11.1	31	1,992	3.4	44	270	22.3
750	31	2,425	- 6.1	53	273	15.3	31	2,388	- 7.1	54	288	15.3	31	2,515	.6	42	270	26.2
700	31	2,965	- 9.7	53	278	17.7	31	2,926	- 9.9	53	283	19.6	31	3,065	- 2.6	41	268	28.4
650	31	3,528	-13.6	51	279	18.7	31	3,489	-13.1	52	283	22.7	31	3,650	- 6.1	43	266	34.6
600	31	4,137	-17.4	46	276	19.6	31	4,099	-17.0	48	282	27.6	31	4,273	- 9.5	43	267	38.9
550	31	4,779	-21.9	46	273	24.1	31	4,745	-20.9	45	283	31.5	31	4,937	-13.6	42	266	44.1
500	31	5,479	-26.9	42	272	26.4	31	5,445	-25.6	43	281	32.3	31	5,661	-18.1	38	265	46.2
450	31	6,225	-32.4	36	275	29.1	31	6,195	-31.1	39	281	34.2	31	6,435	-23.4	37	263	53.0
400	31	7,052				29.3	31	7,025	-37.2		279	40.2	31	7,293	-29.4		263	57.1
350	31	7,954				29.7	31	7,935	-43.8		277	44.3	31	8,233	-36.1		265	69.8
300	31	8,963				29.1	31	8,954	-50.5		271	50.5	31	9,286	-43.9		267	71.3
250	31	10,122	-58.2		281	32.8	31	10,130	-54.9		267	57.3	31	10,488	-51.9		271	81.8
200	31	11,523	-57.8		276	35.8	31	11,547	-56.7		269	59.3	30	11,913	-57.1		274	88.6
175	31	12,367	-56.8		274	33.0	31	12,397	-55.8		269	55.4	29	12,761	-58.0		275	78.9
150	31	13,346	-55.6		273	34.0	31	13,378	-55.4		271	51.5	29	13,728	-60.3		280	76.6
125	30	14,509	-54.4		275	29.5	31	14,540	-55.7		271	47.0	29	14,859	-62.3		280	61.2
100	30	15,935	-55.4		273	27.6	31	15,959	-56.3		272	39.6	29	16,226	-65.1		280	48.6
80	29	17,352	-56.6		273	24.3	31	17,373	-57.1		272	36.9	20	17,587	-64.6		276	38.7
70	29	18,201	-57.0		273	23.1	31	18,218	-57.3		271	33.6	28	18,411	-64.0		274	35.6
60	29	19,173	-57.3		275	21.2	31	19,191	-58.0		272	31.3	27	19,353	-62.1		274	26.6
50	28	20,320	-58.1		278	22.9	31	20,337	-58.0		272	28.2	27	20,486	-60.0		271	22.5
40	27	21,720	-58.9		278	20.2	31	21,740	-57.7		273	26.2	27	21,891	-57.0		269	26.8
30	27	23,525	-59.1		281	22.9	31	23,547	-56.9		270	30.1	26	23,725	-54.8		273	26.0
25	27	24,668	-59.1		281	24.9	26	[illegible]	-56.2		269	34.4	25	24,900	-53.0		269	29.9
20	26	26,065	-58.4		278	27.6	21	26,[illegible]	[illegible]		271	43.1	25	26,343	-51.6		272	32.4
15	23	27,890	-56.9		279	31.1	12	28,00[illegible]	[illegible]				24	28,222	-48.5		271	38.7
10	21	30,461	-54.5		277	40.8							13	30,927	-44.2			
7	19	32,743	-51.7		272	47.4												
5	17	34,943	-47.2															

Standard pressure surface (mb)	GUAM, MARIANA IS. 999 MB						HILO, HAWAII 1015 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	111	24.6	85	76	7.0	31	11	19.9	89	226	5.2
1000	31	102			66	7.2	31	136	21.0	81	203	5.1
950	31	556	22.5	79	74	17.9	31	578	18.5	81	149	5.6
900	31	1,022	19.5	76	86	18.7	31	1,042	15.8	82	146	8.0
850	31	1,514	17.0	65	87	16.5	31	1,526	13.1	81	150	8.7
800	31	2,030	15.4	51	88	14.2	31	2,035	10.6	77	158	9.8
750	31	2,576	13.1	35	91	12.2	31	2,570	7.8	70	194	9.3
700	31	3,153	10.9		90	10.7	31	3,138	4.7	65	216	5.8
650	31	3,770	7.5		88	9.9	31	3,735	1.0	60	233	3.7
600	31	4,422	3.5		84	10.5	31	4,378	- 2.6	46	247	11.7
550	31	5,119	- .9		84	9.3	31	5,057	- 6.6	38	252	15.2
500	31	5,876	- 5.5		86	7.4	31	5,803	-11.3	36	254	18.1
450	31	6,692	-10.5		104	5.6	31	6,598	-16.9	36	262	20.6
400	31	7,593	-15.9		135	6.9	31	7,479	-23.1	36	254	26.4
350	31	8,587	-22.6		270	2.7	31	8,444	-29.7		258	33.4
300	31	9,699	-30.9		262	5.4	31	9,526	-37.4		262	42.6
250	31	10,965	-41.0		250	9.1	31	10,764	-45.1		269	50.1
200	31	12,440	-53.7		228	13.2	31	12,224	-54.1		271	58.5
175	31	13,284	-60.9		226	13.8	31	13,070	-59.4		276	58.1
150	31	14,224	-68.7		202	17.9	31	14,022	-65.1		279	50.5
125	30	15,292	-76.9		195	18.1	31	15,115	-70.8		277	47.4
100	25	16,545	-83.8		183	9.9	31	16,422	-75.1		269	35.4
80	20	17,784	-81.2		119	2.1	31	17,719	-74.2		268	20.6
70	20	18,541	-77.3		36	.8	29	18,499	-71.9		259	12.8
60	20	19,439	-72.3			.0	29	19,413	-69.0		264	6.2
50	19	20,528	-67.3		108	7.2	29	20,513	-64.7		250	4.7
40	19	21,890	-62.7		95	18.7	29	21,891	-60.0		272	1.4
30	19	23,686	-56.4		88	30.3	28	23,703	-56.0		81	4.3
25	19	24,853	-52.9		87	32.3	27	24,870	-53.3		96	8.8
20	18	26,308	-48.2		84	34.8	25	26,311	-50.2		86	8.4
15	12	28,210	-45.8				22	28,197	-47.4		93	8.9
10	8	30,934	-41.2				11	30,891	-43.8			

Standard pressure surface (mb)	HUNTINGTON, W. VA. 988 MB						INTERNAT. FALLS, MINN. 970 MB						JACKSON, MISS. 1007 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	246	6.2	69	228	2.9	31	360	- 6.5	72		.0	31	94	11.1	87	181	1.7
1000	31	146					31	116					31	156			167	1.9
950	31	570	7.3	61	236	11.9	31	517	- 6.0	70	252	1.2	31	586	12.9	55	220	8.2
900	31	1,011	4.8	62	254	19.8	31	963	- 4.7	64	258	3.7	31	1,046	11.2	52	235	11.9
850	31	1,476	3.0	61	260	24.1	31	1,392	- 5.4	60	282	12.4	31	1,515	9.2	47	246	15.7
800	31	1,965	.3	57	267	25.6	31	1,867	- 6.7	53	287	14.8	31	2,016	6.8	45	254	20.2
750	31	2,477	- 2.6	51	271	25.1	31	2,364	- 9.2	49	289	17.7	31	2,540	3.8	44	254	22.2
700	31	3,001	- 5.8	48	268	29.1	31	2,900	-12.1	46	286	21.6	31	3,101	1.1	34	260	25.1
650	31	3,598	- 8.9	49	267	33.6	31	3,456	-15.3	45	286	25.1	31	3,695	- .0		264	29.9
600	31	4,219	-12.0	45	266	37.9	31	4,065	-19.1	41	284	28.4	31	4,326	- 5.0		261	34.6
550	31	4,873	-15.7	41	265	43.9	31	4,702	-23.4	40	284	30.1	31	4,995	-10.5		261	39.2
500	31	5,593	-20.4		265	49.5	31	5,398	-28.3	40	284	33.2	31	5,729	-15.4		263	42.7
450	31	6,356	-25.4		265	53.0	31	6,141	-33.6		282	38.1	31	6,509	-20.8		262	46.4
400	31	7,210	-31.5	41	269	57.3	31	6,963	-39.6		281	42.4	31	7,378	-26.8		265	52.5
350	31	8,141	-38.4		268	60.6	31	7,864	-46.3		279	44.5	31	8,328	-34.0		266	56.0
300	31	9,184	-45.5		270	59.5	31	8,871	-53.1		277	45.3	31	9,390	-42.2		268	59.5
250	31	10,381	-52.7		273	65.3	31	10,033	-57.0		276	50.1	31	10,601	-50.4		275	64.1
200	31	11,801	-57.5		275	70.3	30	11,440	-55.7		274	49.0	31	12,032	-57.4		282	58.9
175	31	12,644	-57.4		278	70.7	30	12,292	-54.6		275	46.2	30	12,873	-59.0		286	58.7
150	31	13,616	-58.1		277	63.3	30	13,280	-53.8		273	43.1	30	13,835	-61.7		289	52.8
125	31	14,759	-60.1		278	53.8	30	14,450	-54.3		275	41.8	30	14,956	-65.0		287	47.4
100	31	16,145	-61.7		280	41.0	29	15,869	-54.8		274	35.9	30	16,305	-68.4		289	42.7
80	30	17,523	-62.5		276	34.0	29	17,293	-55.9		274	35.6	29	17,640	-68.2		288	30.3
70	30	18,351	-61.8		273	29.5	29	18,140	-56.6		275	32.3	29	18,448	-67.2		286	24.7
60	30	19,305	-60.6		274	24.9	28	19,113	-57.5		273	29.9	29	19,376	-64.8		289	16.5
50	30	20,444	-59.5		278	20.8	27	20,259	-58.0		272	28.2	29	20,497	-61.2		298	9.9
40	28	21,845	-57.7		279	18.5	24	21,679	-58.3		274	27.6	29	21,897	-57.1		292	8.7
30	27	23,670	-55.4		274	25.6	21	23,512	-58.4		275	27.4	29	23,732	-54.1		259	10.5
25	26	24,838	-54.4		275	28.2	20	24,677	-57.5		273	26.4	28	24,904	-52.2		269	12.6
20	25	26,279	-52.9		271	34.6	18	26,078	-56.9		268	27.0	28	26,356	-49.5		274	18.1
15	25	28,148	-49.3		277	48.0	16	27,909	-55.1		269	33.6	25	28,261	-45.8		273	24.7
10	5	30,746	-45.2				15	30,542	-48.9		271	44.1	9	30,998	-40.7			
7							9	32,997	-44.2									
5																		

Standard pressure surface (mb)	JACKSONVILLE, FLA. 1020 MB						JOHNSTON IS., PACIFIC AREA 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	5	13.4	90	299	1.7	31	3	24.6	78	72	11.5
1000	31	173	15.5	74	291	1.0	31	123	23.5	78	77	10.5
950	31	605	14.0	67	244	4.9	31	571	19.9	75	86	9.5
900	31	1,063	11.5	63	246	9.5	31	1,033	16.7	74	99	8.5
850	31	1,540	9.8	52	256	12.4	31	1,519	14.4	67	102	4.7
800	31	2,042	8.2	37	259	14.8	31	2,029	11.7	59	140	2.5
750	31	2,574	5.9	34	260	19.2	31	2,571	9.6	44	197	2.7
700	31	3,136	3.1	33	266	22.2	31	3,137	6.9	36	215	4.5
650	31	3,731	- .3		268	26.8	31	3,728	3.6		281	5.1
600	30	4,368	- 4.3		265	30.1	31	4,387	- .1		284	7.4
550	30	5,040	- 8.9		266	32.3	31	5,067	- 4.3		296	11.1
500	30	5,781	-13.7		269	41.2	31	5,822	- 9.2		292	15.4
450	30	6,570	-19.1		269	46.8	31	6,621	-14.6		280	21.4
400	31	7,443	-25.3		274	47.4	31	7,511	-21.0		290	27.4
350	31	8,399	-32.0		271	55.6	31	8,485	-27.0		288	38.1
300	31	9,468	-40.3		274	58.5	31	9,581	-33.7		284	47.8
250	31	10,686	-49.6		275	65.9	31	10,836	-42.6		283	52.3
200	31	12,107	-56.9		277	70.9	31	12,307	-53.7		284	51.1
175	31	12,962	-58.8		273	67.2	30	13,153	-59.7		286	54.0
150	31	13,922	-62.2		275	66.3	29	14,099	-66.4		285	49.0
125	31	15,046	-66.4		275	56.3	27	15,187	-73.5		286	44.1
100	31	16,306	-69.7		273	47.2	27	16,471	-79.4		283	32.3
80	30	17,700	-69.7		275	32.8	23	17,744	-76.7		282	19.6
70	29	18,607	-68.3		278	26.8	21	18,524	-72.3		272	7.2
60	28	19,431	-64.5		274	14.6	20	19,438	-68.5		249	3.3
50	28	20,596	-60.1		274	6.6	19	20,545	-64.9		250	1.4
40	28	21,961	-56.0		277	3.7	19	21,919	-61.3		97	8.4
30	26	23,817	-51.8		44	1.9	19	23,727	-56.2		89	18.7
25	24	25,000	-49.8		285	1.0	18	24,897	-52.3		82	17.3
20	22	26,468	-47.1		248	2.1	14	26,335	-49.4		87	16.7
15	19	28,392	-42.4		279	11.7	12	28,222	-46.5		91	15.2
10	14	31,157	-36.8		261	14.4	8	30,877	-44.4			
7	8	33,672	-34.0									
5	5	35,941	-29.8									

Standard pressure surface (mb)	KING SALMON, ALASKA 1013 MB						KOTZEBUE, ALASKA 1017 MB						LAKE CHARLES, LA. 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	15	- 5.7	75	184	1.0	31	5	-22.0	78	83	1.6	31	5	13.0	90	138	1.7
1000	31	111			339	2.3	31	127	-20.4	69	45	1.6	31	154	15.3	73	151	4.1
950	31	513	- 6.0	66	286	2.9	31	513	-16.9	64	252	2.1	31	587	14.5	60	182	8.7
900	31	937	- 7.1	66	261	6.8	31	918	-16.2	60	275	5.8	31	1,045	13.0	47	211	10.1
850	31	1,382	- 8.2	63	261	10.1	31	1,348	-16.4	54	276	8.4	31	1,525	11.5	42	227	13.8
800	31	1,852	- 9.5	60	269	13.6	31	1,803	-17.7	52	277	10.1	31	2,030	9.0	39	237	16.9
750	31	2,353	-11.8	59	270	17.3	31	2,283	-19.3	48	271	13.8	31	2,561	6.2	40	241	17.3
700	31	2,875	-14.1	55	270	18.3	31	2,795	-21.6	46	266	16.3	31	3,125	3.2	33	252	20.8
650	31	3,438	-17.1	53	268	22.3	31	3,335	-24.1	44	263	19.2	31	3,721	.3	28	257	25.6
600	31	4,033	-20.1	52	272	25.1	31	3,919	-27.5	44	263	21.6	31	4,360	- 3.9		260	30.1
550	31	4,675	-23.4	49	271	26.4	31	4,536	-31.3	42	265	27.2	31	5,036	- 8.2		261	34.4
500	31	5,365	-27.8	46	268	29.1	31	5,210	-35.3	41	260	30.3	31	5,775	-13.3		262	39.1
450	31	6,110	-33.3		264	33.0	31	5,933	-39.9		263	35.2	31	6,567	-18.8		262	45.7
400	31	6,931	-39.1		260	35.9	31	6,732	-45.2		259	36.9	31	7,438	-25.1		263	54.0
350	31	7,834	-45.4		263	39.6	31	7,613	-50.4		265	41.0	31	8,394	-32.5		265	60.6
300	31	8,848	-51.9		266	43.9	31	8,608	-56.9		265	41.8	31	9,462	-40.6		266	65.9
250	31	10,018	-55.8		270	44.9	31	9,770	-55.2		266	41.6	31	10,678	-49.9		265	73.1
200	30	11,437	-55.9		271	38.5	31	11,204	-52.4		265	34.8	31	12,109	-57.1		265	81.6
175	28	12,282	-54.2		273	31.3	31	12,068	-51.9		262	32.3	31	12,950	-59.0		267	81.4
150	27	13,270	-53.7		267	28.2	31	13,066	-51.9		263	31.5	31	13,910	-62.6		268	73.1
125	27	14,440	-53.9		276	28.6	31	14,245	-52.2		264	31.5	31	15,022	-66.9		267	66.8
100	27	15,873	-54.1		272	25.1	31	15,687	-53.0		263	29.1	31	16,355	-71.1		266	57.9
80	26	17,299	-55.4		282	24.9	31	17,122	-54.0		264	30.1	31	17,674	-71.4		268	39.2
70	24	18,155	-55.8		270	22.9	31	17,981	-54.7		267	28.2	31	18,478	-69.7		267	27.4
60	23	19,137	-55.9		276	21.8	31	18,962	-55.4		267	29.1	30	19,394	-66.6		266	17.9
50	21	20,298	-56.1		282	20.6	31	20,123	-56.2		268	26.8	30	20,509	-62.2		263	11.7
40	21	21,713	-57.0		286	20.4	31	21,536	-57.8		269	29.5	30	21,903	-57.9		257	8.5
30	21	23,527	-58.7		290	22.3	30	23,353	-59.0		276	31.1	29	23,738	-53.9		249	5.8
25	19	24,655	-59.3		283	23.7	29	24,499	-59.8		273	30.5	29	24,915	-51.7		257	6.4
20	15	26,041	-59.9		285	26.0	27	25,891	-61.1		274	33.4	28	26,374	-48.5		267	7.2
15	8	27,845	-60.2				26	27,672	-62.0		285	36.1	24	28,285	-44.8		264	11.3
10	6	30,402	-59.3				11	30,267	-62.0				11	31,048	-39.8			

Standard pressure surface (mb)	LANDER, WYO. 825 MB						LAS VEGAS, NEV. 938 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	1,696	- 3.0	63	271	2.7	31	660	7.7	39	249	4.7
1000	31	144					31	126				
950	31	556					31	554				
900	31	995					31	1,004	9.9	29	322	3.5
850	31	1,457					31	1,476	6.8	31	309	3.1
800	31	1,941	- .7	45	260	2.1	31	1,970	3.2	34	278	4.1
750	31	2,452	- 3.7	46	279	4.7	31	2,484	- .5	36	249	5.8
700	31	2,995	- 7.4	45	283	8.5	31	3,038	- 4.0	34	244	9.3
650	31	3,554	-11.5	45	283	12.2	31	3,613	- 7.4		255	13.6
600	31	4,178	-15.3	41	285	16.1	31	4,239	-11.5		261	17.1
550	31	4,822	-19.5	38	278	17.7	31	4,895	-15.8		266	20.8
500	31	5,532	-24.6	37	274	20.4	31	5,613	-20.9		264	25.1
450	31	6,282	-30.6	37	273	22.5	31	6,376	-26.4		262	28.2
400	31	7,117	-37.2		270	26.8	31	7,225	-32.8		268	31.7
350	31	8,026	-44.1		271	30.7	31	8,152	-39.6		271	38.3
300	31	9,042	-51.6		272	33.4	31	9,191	-46.4		270	46.4
250	31	10,210	-56.9		275	41.6	31	10,384	-53.4		269	51.1
200	31	11,615	-58.5		275	43.5	31	11,801	-57.8		268	58.9
175	31	12,457	-57.0		271	45.5	31	12,644	-57.3		268	59.1
150	31	13,436	-56.0		268	45.1	31	13,617	-57.8		266	55.0
125	31	14,595	-56.5		267	40.2	31	14,762	-59.6		266	50.1
100	30	16,001	-58.1		266	33.2	31	16,149	-61.5		261	43.3
80	29	17,402	-58.5		266	28.2	30	17,529	-61.9		259	33.4
70	29	18,241	-58.5		267	24.7	28	18,355	-61.4		257	27.0
60	29	19,211	-58.5		267	22.0	27	19,306	-61.2		264	22.0
50	28	20,351	-59.3		266	19.6	25	20,449	-59.9		264	14.0
40	27	21,753	-59.5		268	15.7	23	21,853	-58.6		261	13.6
30	26	23,564	-58.1		280	18.3	21	23,674	-55.4		275	17.7
25	24	24,714	-57.2		274	22.5	19	24,845	-52.9		274	21.0
20	18	26,150	-54.8		273	32.4	15	26,280	-50.9		266	31.5
15	12	28,017	-52.9		279	43.3	5	28,212	-45.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MARCH 1963

LIHUE, HAWAII — 1012 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	36	20.7	84	36	1.9
1000	31	139	20.9	80	63	3.3
950	31	579	18.1	80	88	5.2
900	31	1,043	14.7	81	114	4.1
850	31	1,525	12.1	78	160	3.9
800	31	2,031	9.5	71	192	4.7
750	31	2,561	6.9	65	210	7.6
700	31	3,130	4.2	50	225	9.3
650	31	3,723	.7	49	234	10.9
600	31	4,368	-2.9	42	244	12.8
550	31	5,045	-7.3	38	250	15.5
500	31	5,789	-12.2	37	253	18.1
450	31	6,581	-17.7		260	21.4
400	31	7,458	-24.0		264	24.7
350	31	8,417	-31.0	39	261	27.4
300	31	9,493	-38.5		271	32.4
250	31	10,723	-46.7		274	49.0
200	30	12,176	-54.4		273	66.6
175	29	13,019	-59.3		273	64.3
150	29	13,973	-64.1		274	58.5
125	28	15,074	-69.5		275	49.9
100	26	16,388	-73.9		273	39.4
80	22	17,691	-73.5		272	23.7
70	21	18,473	-70.7		261	15.9
60	20	19,395	-67.9		256	7.0
50	20	20,498	-64.6		287	3.3
40	19	21,878	-60.1		267	4.3
30	18	23,693	-55.5		238	2.1
25	17	24,860	-53.0		279	1.7
20	17	26,307	-50.5		278	4.3
15	17	28,202	-46.6		253	3.7
10	14	30,902	-43.6		254	13.8
7	12	33,324	-37.8		272	14.6
5	8	35,683	-32.2			

LITTLE ROCK, ARK. — 1008 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	9.2	78	257	2.3
1000	31	144			247	4.7
950	31	568	10.8	55	238	11.7
900	31	1,022	9.6	48	247	14.8
850	31	1,495	7.7	45	255	17.3
800	31	1,993	5.1	42	258	21.0
750	31	2,515	2.5	40	256	23.9
700	31	3,073	-.9	38	262	26.4
650	31	3,656	-4.6	35	265	32.8
600	31	4,287	-8.6		263	37.9
550	31	4,952	-13.0		261	40.4
500	31	5,678	-17.8	33	259	46.2
450	31	6,451	-23.3		257	50.7
400	31	7,311	-29.5		258	56.2
350	31	8,250	-36.3		261	64.7
300	31	9,303	-43.8		267	68.2
250	31	10,505	-52.1		271	66.1
200	30	11,930	-57.2		275	62.8
175	30	12,774	-57.5		277	61.6
150	30	13,746	-59.2		286	49.9
125	30	14,878	-63.2		283	43.7
100	28	16,242	-65.7		285	34.8
80	27	17,592	-65.7		281	24.9
70	26	18,409	-65.3			
60	23	19,349	-63.9			
50	23	20,475	-61.0			
40	21	21,867	-57.9			
30	19	23,696	-54.6			
25	19	24,868	-53.0			
20	18	26,322	-50.0			
15	17	28,210	-47.6			
10	9	30,923	-43.5			
7						
5						

MCGRATH, ALASKA — 1003 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	-14.2	61	247	2.5
1000	31	127			329	2.1
950	31	520	-11.7	64	16	1.7
900	31	934	-11.7	63	121	2.1
850	31	1,373	-11.9	59	220	2.5
800	31	1,836	-13.1	54	255	5.1
750	31	2,324	-15.2	53	263	7.6
700	31	2,845	-17.8	50	266	9.7
650	31	3,392	-20.8	49	270	13.8
600	31	3,985	-23.8	47	271	17.5
550	31	4,609	-27.6	45	279	19.2
500	31	5,296	-31.6	44	274	25.1
450	31	6,025	-36.5		275	28.4
400	31	6,842	-42.0		268	34.2
350	31	7,735	-47.6		272	42.4
300	31	8,740	-53.2		271	45.3
250	31	9,908	-54.8		272	46.0
200	31	11,338	-53.2		274	38.1
175	30	12,198	-53.2		273	31.9
150	30	13,193	-52.5		272	33.0
125	30	14,369	-52.9		271	30.3
100	29	15,806	-53.4		271	28.8
80	27	17,239	-54.1		271	27.0
70	27	18,094	-54.7		272	26.0
60	27	19,079	-55.4		275	24.1
50	26	20,235	-56.4		277	24.9
40	23	21,638	-57.2		278	26.6
30	22	23,449	-58.6		280	28.2
25	21	24,595	-59.2		280	29.3
20	17	25,986	-60.4		280	25.3
15	11	27,834	-60.6			
10						
7						
5						

MAJURO, MARSHALL IS. — 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	26.5	83	78	10.1
1000	31	91	25.9	83	75	11.7
950	31	538	22.8	83	76	16.9
900	31	1,014	19.9	81	84	17.3
850	31	1,506	17.2	76	87	17.5
800	31	2,023	15.3	67	90	14.6
750	31	2,568	12.9	59	87	12.2
700	31	3,148	10.0	56	86	12.0
650	31	3,760	6.7	53	88	12.8
600	31	4,416	2.9	49	82	14.0
550	31	5,109	-.8	39	77	14.4
500	31	5,872	-5.1	39	79	14.0
450	31	6,693	-10.0	38	70	13.0
400	31	7,595	-15.3		51	10.7
350	31	8,590	-22.2		34	8.5
300	31	9,705	-30.5		8	5.6
250	31	10,974	-40.7		335	4.1
200	31	12,453	-52.9		337	7.0
175	31	13,301	-59.8		344	8.7
150	31	14,248	-67.4		346	9.9
125	31	15,325	-75.3		355	7.6
100	29	16,592	-83.0		61	6.2
80	27	17,841	-79.5		278	4.5
70	27	18,604	-76.4		275	9.3
60	26	19,499	-71.9		353	1.6
50	25	20,585	-68.8		87	20.0
40	23	21,934	-63.7		91	39.8
30	23	23,731	-56.3		89	53.0
25	23	24,901	-52.7		87	56.7
20	23	26,355	-48.3		88	60.6
15	22	28,276	-43.4		91	40.2
10	12	31,008	-40.2			
7						
5						

MEDFORD, OREG. — 970 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	3.0	85	248	1.4
1000	31	153				
950	31	571	4.6	72	258	2.5
900	31	1,011	3.0	69	209	3.7
850	31	1,472	.3	68	206	5.8
800	31	1,956	-2.5	64	226	8.0
750	31	2,466	-5.2	60	241	9.9
700	31	3,005	-8.4	58	251	15.3
650	31	3,576	-11.8	51	263	14.2
600	31	4,186	-15.7	45	273	16.1
550	31	4,834	-20.2	44	269	16.5
500	31	5,537	-25.0	45	269	19.8
450	31	6,287	-30.5	41	270	23.5
400	31	7,122	-36.6		268	25.6
350	31	8,034	-43.2		262	26.2
300	31	9,057	-50.0		259	28.6
250	31	10,230	-56.1		257	33.4
200	31	11,637	-58.8		261	37.7
175	31	12,477	-57.4		266	35.0
150	30	13,458	-57.3		262	34.6
125	30	14,609	-57.4		266	31.5
100	30	16,015	-58.6		265	26.6
80	30	17,419	-57.9		266	23.9
70	30	18,261	-58.4		262	22.3
60	30	19,228	-58.4		266	18.7
50	30	20,374	-58.7		266	19.0
40	30	21,773	-58.8		268	15.7
30	29	23,579	-58.3		269	18.8
25	28	24,730	-57.2		269	23.7
20	26	26,144	-56.0		263	28.0
15	23	27,971	-54.0		270	35.2
10	22	30,588	-50.6		270	47.6
7	17	32,909	-48.3		271	66.6
5	14	35,111	-44.3			

MIAMI, FLA. — 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	19.7	85	48	2.1
1000	31	167	20.0	76	101	4.9
950	31	607	17.6	73	122	7.0
900	31	1,070	15.1	68	133	5.2
850	31	1,553	12.4	65	154	1.4
800	31	2,060	9.8	59	296	1.7
750	31	2,593	7.7	43	291	3.1
700	31	3,163	5.8	32	250	5.2
650	31	3,763	2.9		257	9.5
600	31	4,411	-.9		265	13.2
550	31	5,094	-4.7		272	17.9
500	31	5,846	-9.9		270	20.6
450	31	6,643	-16.0		269	27.0
400	31	7,528	-22.6		269	30.5
350	31	8,494	-29.8		270	32.4
300	31	9,573	-38.6		272	37.9
250	31	10,801	-48.1		275	42.4
200	31	12,244	-55.6		272	49.4
175	31	13,087	-59.4		272	53.8
150	31	14,043	-63.2		271	51.9
125	31	15,149	-68.9		271	45.5
100	31	16,466	-74.1		270	36.9
80	31	17,763	-75.0		270	24.7
70	31	18,552	-72.9		272	16.5
60	31	19,458	-68.1		271	6.4
50	31	20,569	-62.8		59	1.2
40	30	21,966	-57.1		74	7.6
30	29	23,812	-52.2		91	14.2
25	29	25,000	-49.5		91	12.6
20	29	26,472	-46.5		80	11.1
15	25	28,398	-42.6		106	7.0
10	23	31,166	-36.5		298	5.4
7	19	33,686	-29.4		284	11.3
5	5	36,066	-28.2			

MIDLAND, TEXAS — 915 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	874	7.8	57	164	1.9
1000	31	131				
950	31	561				
900	31	1,010	10.3	46	182	4.7
850	31	1,486	10.4	37	219	8.9
800	31	1,990	8.7	30	245	14.2
750	31	2,524	5.6	26	255	16.3
700	31	3,081	2.2	23	256	19.0
650	31	3,673	-1.9		255	24.3
600	31	4,307	-6.4		253	29.1
550	31	4,979	-11.0		256	37.9
500	31	5,707	-16.1		254	42.0
450	31	6,489	-21.5		256	49.0
400	31	7,351	-27.3		256	57.1
350	31	8,298	-34.5		257	64.9
300	31	9,358	-42.8		258	72.7
250	31	10,564	-51.6		257	75.6
200	31	11,990	-57.3		258	79.1
175	31	12,831	-58.7		259	76.0
150	31	13,794	-61.1		259	70.9
125	31	14,916	-64.7		260	65.7
100	31	16,269	-67.1		264	52.1
80	30	17,615	-67.8		267	39.1
70	30	18,435	-67.2		267	27.4
60	30	19,353	-65.4		268	17.5
50	29	20,468	-63.4		264	10.7
40	29	21,853	-58.6		256	12.6
30	27	23,685	-54.0		263	14.4
25	27	24,860	-52.0		263	16.9
20	27	26,314	-49.5		273	19.0
15	23	28,220	-46.1		274	22.3
10	22	30,943	-41.2		277	29.9
7	20	33,380	-38.6		273	35.4
5	17	35,680	-35.1			

MONTGOMERY, ALA. — 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	10.7	79	222	1.4
1000	31	166	13.5	66	234	2.3
950	31	597	12.9	58	236	8.4
900	31	1,051	11.0	50	253	11.3
850	31	1,526	8.9	40	259	14.4
800	31	2,027	6.4	38	261	18.5
750	31	2,552	4.1	35	261	23.9
700	31	3,113	1.5	35	264	27.4
650	31	3,702	-1.5		268	33.2
600	31	4,340	-5.2		266	38.9
550	31	5,010	-9.8		265	43.7
500	31	5,748	-14.4		260	49.4
450	31	6,534	-20.0		262	55.2
400	31	7,402	-26.3		268	59.1
350	31	8,355	-33.3		267	66.1
300	31	9,421	-41.4		265	73.3
250	31	10,635	-50.4		265	76.2
200	31	12,065	-57.1		270	80.4
175	31	12,908	-58.5		271	75.2
150	29	13,868	-61.3		272	73.3
125	29	14,989	-65.3		273	60.6
100	28	16,335	-68.3		274	48.0
80	27	17,676	-68.2		273	32.6
70	26	18,494	-66.9		270	26.6
60	25	19,423	-64.0		271	22.0
50	25	20,548	-60.6		274	14.2
40	25	21,952	-56.6		282	9.3
30	22	23,789	-53.2		285	8.0
25	19	24,964	-51.6		285	11.5
20	16	26,428	-49.0		290	14.2
15	9	28,336	-45.0			
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NANTUCKET, MASS. — 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	1.6	83	304	4.3
1000	31	127			249	3.1
950	31	543	1.4	67	278	9.1
900	31	976	.2	64	276	14.0
850	31	1,433	-1.5	59	275	19.2
800	31	1,915	-2.9	54	280	26.0
750	31	2,422	-5.0	51	278	29.9
700	31	2,965	-7.8	50	279	33.4
650	31	3,536	-10.9	45	277	36.9
600	31	4,150	-14.3	44	274	43.9
550	31	4,800	-18.3	41	276	46.6
500	31	5,511	-23.0	37	275	52.5
450	31	6,268	-28.0		276	59.1
400	31	7,113	-34.2		278	61.6
350	31	8,034	-40.9		275	68.0
300	31	9,067	-47.7		278	73.3
250	31	10,254	-53.8		277	72.9
200	30	11,663	-56.2		277	68.8
175	30	12,511	-55.7		278	69.2
150	30	13,494	-55.3		274	58.3
125	30	14,655	-56.2		271	51.5
100	30	16,065	-58.1		273	43.5
80	30	17,469	-58.5		276	33.4
70	30	18,309	-58.3		272	28.8
60	30	19,279	-58.5		272	25.1
50	30	20,426	-57.9		279	20.8
40	28	21,838	-56.4		278	22.0
30	27	23,666	-54.7		274	22.0
25	26	24,837	-53.4		272	22.5
20	25	26,274	-52.4		275	32.8
15	24	28,149	-49.2		270	46.0
10	21	30,828	-43.7		272	64.7
7	19	33,252	-38.5		271	75.0
5	11	35,578	-32.8			

NASHVILLE, TENN. — 997 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	7.9	80	184	3.7
1000	31	148			160	2.1
950	31	571	9.3	58	238	14.0
900	31	1,021	7.4	53	243	17.1
850	31	1,490	5.1	50	254	22.5
800	31	1,983	2.3	52	262	26.0
750	31	2,502	-.1	48	265	29.1
700	30	3,055	-3.0	43	271	29.3
650	30	3,634	-6.1		271	33.6
600	30	4,261	-10.0		271	40.6
550	30	4,921	-14.1		269	46.6
500	30	5,644	-18.8		270	51.3
450	30	6,414	-24.3		266	55.0
400	30	7,269	-30.3	37	268	60.0
350	30	8,205	-37.3		264	61.8
300	30	9,253	-44.7		266	72.9
250	30	10,451	-52.7		272	66.8
200	30	11,874	-57.1		283	54.4
175	30	12,717	-58.3			
150	29	13,680	-59.8			
125	29	14,814	-62.0			
100	29	16,186	-64.5			
80	28	17,549	-64.0			
70	28	18,370	-63.6			
60	28	19,314	-62.6			
50	28	20,446	-60.3			
40	27	21,852	-57.2			
30	26	23,674	-55.2			
25	26	24,842	-53.6			
20	26	26,284	-51.1			
15	24	28,171	-47.4			
10	22	30,888	-42.3			
7	22	33,323	-39.5			
5	16	35,623	-36.5			

N. Y. INT. AP, IDLEWILD — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	2.5	69	315	4.9
1000	31	137	3.0	62	310	6.8
950	31	556	2.4	58	299	9.9
900	31	990	2.1	53	286	13.4
850	31	1,450	.2	58	282	18.8
800	31	1,934	-1.9	55	281	22.9
750	31	2,446	-4.6	51	281	27.6
700	31	2,986	-7.4	49	279	31.9
650	31	3,559	-10.4	46	276	36.5
600	31	4,172	-14.3	41	275	42.4
550	31	4,826	-17.8	38	276	47.6
500	31	5,535	-22.3	37	277	52.7
450	31	6,297	-27.5		276	58.9
400	31	7,139	-33.6		275	62.2
350	31	8,062	-40.4		277	65.5
300	31	9,096	-47.8		275	76.6
250	31	10,282	-54.0		276	81.4
200	31	11,699	-57.5		277	73.1
175	31	12,543	-57.0		277	65.5
150	31	13,518	-56.8		279	63.1
125	30	14,663	-57.4		276	49.7
100	30	16,068	-59.1		274	45.7
80	30	17,466	-59.4		273	38.3
70	30	18,308	-59.4		276	32.6
60	30	19,267	-59.5		277	27.0
50	30	20,411	-58.8		276	22.3
40	30	21,817	-57.3		280	21.6
30	30	23,645	-55.2		279	22.7
25	27	24,810	-54.4		274	27.6
20	24	26,258	-53.1		277	28.2
15	15	28,092	-51.5			
10						
7						
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NOME, ALASKA — 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	-14.8	73	40	5.2
1000	31	123			30	6.2
950	31	517	-11.9	54	39	2.1
900	31	929	-12.4	53	6	1.9
850	31	1,365	-13.1	52	296	4.1
800	31	1,826	-14.4	50	287	7.6
750	31	2,313	-16.4	47	280	11.3
700	31	2,830	-19.0	46	275	14.8
650	31	3,377	-22.0	47	275	15.3
600	31	3,963	-25.2	45	263	19.8
550	31	4,585	-28.9	46	261	21.4
500	31	5,266	-33.1	45	268	23.1
450	31	5,996	-37.7		262	26.6
400	31	6,803	-43.1		261	30.3
350	31	7,692	-48.7		254	37.7
300	31	8,693	-54.0		255	40.8
250	31	9,855	-56.0		258	44.3
200	31	11,282	-53.3		255	41.2
175	31	12,143	-52.3		254	36.9
150	31	13,140	-52.5		255	36.9
125	30	14,311	-52.7		258	31.7
100	29	15,753	-52.4		257	30.5
80	29	17,190	-53.8		258	29.7
70	28	18,048	-54.0		265	26.6
60	25	19,039	-54.9		261	27.2
50	23	20,203	-55.0		264	28.4
40	21	21,621	-56.6		265	29.9
30	18	23,442	-57.6		271	31.7
25	16	24,601	-58.9		270	30.5
20	16	25,998	-60.1		278	33.8
15	7	27,738	-61.3			
10						
7						
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NORFOLK, VA. — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	8.2	75	244	4.3
1000	31	148	10.0	60	253	7.8
950	31	571	9.3	55	262	15.7
900	31	1,021	7.1	52	265	20.2
850	31	1,489	4.5	51	266	22.7
800	31	1,981	1.7	49	262	25.5
750	31	2,497	-1.1	44	264	28.2
700	31	3,047	-3.7	42	268	31.1
650	31	3,623	-6.3		268	36.7
600	31	4,252	-9.9		268	40.2
550	31	4,913	-14.2		268	47.0
500	31	5,635	-18.9		269	51.5
450	31	6,405	-24.4		270	51.3
400	31	7,260	-30.3		268	61.0
350	31	8,196	-37.0		269	65.9
300	31	9,244	-44.8		270	71.5
250	31	10,442	-52.4		273	75.8
200	31	11,864	-57.6		277	81.0
175	31	12,706	-58.1		279	74.8
150	31	13,674	-59.2		279	71.1
125	31	14,813	-61.1		275	60.8
100	31	16,190	-62.7		275	47.2
80	31	17,564	-62.9		279	41.8
70	31	18,394	-61.6		280	36.9
60	31	19,347	-60.1		275	26.4
50	31	20,491	-58.1		273	23.9
40	30	21,907	-55.8		271	21.4
30	30	23,751	-53.2		269	26.4
25	28	24,933	-51.5		275	24.5
20	26	26,390	-49.2		270	29.5
15	17	28,302	-45.1		272	42.6
10						
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NORTH PLATTE, NEBR. — 914 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	-.6	83	323	3.3
1000	31	124				
950	31	542				
900	31	976	1.9	69	305	4.5
850	31	1,437	2.3	55	311	7.4
800	31	1,925	.3	47	310	10.1
750	31	2,437	-2.8	46	302	10.9
700	31	2,984	-6.3	44	297	16.3
650	31	3,555	-9.9	43	287	18.7
600	31	4,173	-14.1	42	280	20.6
550	31	4,823	-18.5	41	268	23.3
500	31	5,532	-23.7	40	265	26.2
450	31	6,287	-29.5	38	263	30.3
400	31	7,124	-36.0		263	34.0
350	31	8,037	-43.2		261	37.9
300	31	9,059	-50.6		261	45.3
250	31	10,230	-56.3		264	48.0
200	31	11,639	-57.6		266	52.3
175	31	12,483	-56.9		265	51.9
150	31	13,460	-56.7		265	50.7
125	31	14,613	-58.0		266	49.4
100	30	16,006	-59.9		269	39.4
80	29	17,398	-59.6		271	31.1
70	29	18,233	-60.1		269	27.6
60	29	19,194	-60.1		268	25.5
50	28	20,334	-60.1		269	20.6
40	26	21,726	-59.8		268	21.0
30	25	23,536	-57.4		268	23.7
25	24	24,689	-56.0		268	28.2
20	24	26,112	-54.6		274	31.9
15	23	27,975	-51.4		273	40.0
10	22	30,642	-46.9		271	63.3
7	22	33,025	-43.1		270	77.7
5	22	35,308	-39.0			

OAKLAND, CALIF. — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	8.4	77	116	1.0
1000	31	150	9.3	73	202	1.0
950	31	570	7.7	66	261	4.1
900	31	1,019	5.7	59	278	5.6
850	31	1,484	3.0	53	272	6.4
800	31	1,974	.7	46	267	8.7
750	31	2,488	-1.9	41	272	11.1
700	31	3,035	-4.8		279	13.4
650	31	3,611	-8.5	30	279	15.7
600	31	4,231	-12.4		280	18.7
550	31	4,885	-17.0		282	22.2
500	31	5,599	-22.0		280	25.3
450	31	6,361	-27.6		276	28.4
400	31	7,204	-33.3		277	34.4
350	31	8,130	-39.9		271	42.0
300	31	9,168	-47.2		274	47.8
250	31	10,354	-54.9		279	50.1
200	31	11,763	-58.8		276	54.0
175	31	12,603	-58.4		274	51.1
150	31	13,576	-57.7		274	50.1
125	31	14,723	-59.5		271	44.1
100	30	16,114	-60.5		267	37.5
80	29	17,500	-60.8		268	30.3
70	29	18,338	-60.4		268	26.8
60	29	19,293	-59.6		265	23.1
50	27	20,438	-59.3		268	18.5
40	26	21,831	-58.9		270	16.5
30	25	23,652	-56.6		269	21.0
25	25	24,812	-55.0		270	24.7
20	24	26,243	-52.8		265	29.1
15	23	28,120	-49.8		264	42.9
10	22	30,790	-46.2		265	63.9
7	19	33,166	-42.6		265	72.1
5	16	35,435	-38.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	OKLAHOMA CITY, OKLA. 970 MB						OLYMPIA, WASH. 1009 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	392	7.0	75	187	3.1	31	58	2.5	90	205	3.7
1000	31	137					31	130			209	2.7
950	31	563	9.2	60	199	5.1	31	548	3.5	75	181	5.6
900	31	1,010	8.6	49	212	11.9	31	985	1.3	71	216	7.4
850	31	1,482	7.8	40	253	16.7	31	1,443	- 1.2	68	234	10.1
800	31	1,980	5.5	33	259	18.3	31	1,924	- 4.1	64	243	10.5
750	31	2,502	2.3	32	264	20.2	31	2,428	- 6.8	53	244	11.3
700	31	3,058	- 1.1	32	264	22.3	31	2,966	- 9.9	50	250	13.0
650	31	3,639	- 5.2	31	267	24.0	31	3,528	-13.6	44	258	13.8
600	31	4,269	- 9.4		262	32.8	31	4,138	-17.5		263	15.7
550	31	4,928	-14.1		259	36.3	31	4,780	-21.9		265	17.7
500	31	5,652	-19.2		259	42.2	31	5,477	-27.0		257	20.0
450	31	6,422	-24.8		258	47.8	31	6,223	-32.6		273	21.2
400	31	7,275	-30.9		258	55.2	31	7,050	-38.5		279	24.9
350	31	8,209	-37.4		261	64.9	31	7,954	-45.3		283	26.4
300	31	9,256	-45.0		262	74.2	31	8,967	-52.0		281	26.4
250	31	10,452	-53.0		262	79.5	31	10,133	-57.2		294	27.0
200	31	11,870	-57.8		262	86.5	31	11,536	-58.5		291	27.2
175	31	12,711	-58.5		261	84.9	31	12,380	-56.2		284	24.9
150	30	13,682	-59.5		262	80.6	31	13,360	-58.9		280	22.0
125	30	14,816	-62.4		262	70.9	31	14,520	-56.0		280	21.4
100	29	16,178	-64.3		266	56.9	30	15,941	-56.9		284	19.2
80	27	17,540	-64.2		267	40.4	30	17,354	-57.1		281	16.7
70	27	18,362	-63.9		266	32.1	30	18,203	-56.9		282	15.2
60	27	19,305	-63.4		264	24.7	30	19,172	-57.6		277	14.6
50	26	20,431	-62.0		269	18.8	28	20,317	-58.3		284	13.4
40	25	21,823	-58.0		262	17.1	26	21,717	-59.5		287	14.2
30	23	23,638	-55.4		260	25.1	22	23,522	-59.6		285	15.0
25	18	24,818	-53.2		263	27.8	15	24,671	-58.9		289	15.2
20	11	26,285	-50.3				10	26,069	-58.5			
15	6	28,126	-48.4				5	27,830	-58.7			
10												
7												
5												

Standard pressure surface (mb.)	OMAHA, NEBR. 965 MB						PEORIA, ILL. 982 MB						PITTSBURGH, PA. 974 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	403	1.9	79	298	1.2	29	200	1.1	85	204	.8	31	354	1.5	86	262	4.1
1000	31	117					28	132					31	138				
950	31	534	2.8	69	292	4.7	28	551	3.5	68	248	5.6	31	552	3.5	71	251	10.1
900	31	971	3.3	58	297	11.7	28	947	3.0	56	259	10.1	31	992	2.0	65	266	13.0
850	31	1,434	1.9	55	298	12.2	28	1,449	1.8	51	270	11.3	31	1,452	- .2	65	270	22.3
800	31	1,921	- .6	51	291	16.3	28	1,946	- .6	50	275	15.7	31	1,935	- 2.5	66	272	25.1
750	31	2,432	- 3.1	51	288	17.1	28	2,449	- 3.4	50	275	16.4	31	2,445	- 4.7	59	270	26.6
700	31	2,977	- 6.4	49	289	19.8	28	2,993	- 6.4	48	274	20.4	31	2,986	- 7.6	58	271	29.3
650	31	3,551	- 9.9	46	283	21.8	27	3,565	-10.4	44	275	24.4	31	3,557	-10.8	55	267	35.0
600	31	4,166	-14.0	44	282	25.6	27	4,179	-14.0		276	28.2	31	4,172	-14.4	49	268	40.0
550	31	4,817	-18.5	42	273	26.4	27	4,841	-18.4		277	33.0	31	4,824	-18.5	47	271	45.3
500	31	5,526	-23.5		273	31.7	27	5,538	-23.4		276	39.2	31	5,533	-22.9	45	272	52.5
450	31	6,278	-28.6		272	33.2	27	6,298	-28.6		275	40.4	31	6,291	-27.9	42	273	57.9
400	31	7,118	-34.7		270	39.6	27	7,135	-34.7		270	47.4	31	7,135	-33.6	41	271	65.1
350	31	8,034	-42.4		269	47.4	26	8,054	-41.7		266	51.7	31	8,060	-40.3		270	74.6
300	31	9,060	-49.6		265	54.4	26	9,084	-48.6		262	58.5	31	9,095	-47.4		273	77.4
250	31	10,235	-55.9		265	59.5	26	10,264	-55.2		260	64.0	31	10,283	-53.6		275	78.7
200	31	11,648	-57.6		263	60.2	26	11,677	-57.8		264	66.4	30	11,697	-57.9		279	79.9
175	31	12,492	-57.0		264	61.4	26	12,521	-56.7		264	64.5	30	12,539	-57.6		279	78.7
150	31	13,469	-56.6		265	59.1	26	13,498	-57.1		270	58.9	30	13,512	-57.5		280	62.6
125	30	14,624	-58.1		269	51.3	26	14,647	-58.8		272	45.2	30	14,660	-59.0		278	54.0
100	30	16,026	-59.4		267	43.3	26	16,045	-59.7		270	43.7	30	16,056	-59.9		274	46.8
80	30	17,423	-59.5		271	37.7	25	17,432	-60.3		269	34.8	29	17,449	-59.6		277	33.0
70	30	18,260	-59.6		272	30.1	24	18,259	-60.0		268	29.0	29	18,288	-59.4		272	28.9
60	30	19,220	-60.2		271	24.3	24	19,205	-60.1		267	29.1	29	19,250	-59.5		275	25.8
50	30	20,360	-59.3		271	21.2	23	20,355	-59.1		270	26.2	29	20,390	-59.1		272	24.9
40	28	21,755	-59.4		269	20.6	23	21,758	-58.5		268	24.3	29	21,795	-57.9		273	23.1
30	25	23,563	-57.3		270	23.1	22	23,577	-57.0		267	29.7	27	23,615	-55.6		267	28.0
25	18	24,719	-56.0		270	26.6	22	24,735	-55.9		265	33.4	27	24,778	-55.0		269	30.9
20	12	26,148	-54.1		274	33.8	22	26,163	-53.8		265	44.5	26	26,206	-53.7		274	43.1
15	6	28,005	-52.3		269	38.3	22	28,021	-51.1		264	57.1	24	28,066	-50.5		273	54.0
10							21	30,697	-46.3		267	70.1	24	30,735	-46.4		270	64.7
7							19	33,109	-42.2		267	82.3	21	33,148	-41.6		271	88.0
5							17	35,405	-37.4				16	35,464	-37.7			

Standard pressure surface (mb.)	PONAPE, CAROLINE IS. 1004 MB						PORTLAND, ME. 1013 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	39	26.1	86	61	5.6	31	20	- 3.4	81	298	2.7
1000	31	75	26.1	84	65	7.0	31	123			314	4.1
950	31	522	23.7	84	75	15.5	31	530	- 2.4	63	302	6.2
900	31	1,000	20.6	85	80	18.1	31	959	- 4.0	63	288	7.6
850	31	1,494	17.9	82	83	17.3	31	1,409	- 4.9	54	288	12.8
800	31	2,013	15.8	69	84	14.6	31	1,885	- 6.1	49	286	17.1
750	31	2,557	13.0	63	86	15.2	31	2,386	- 8.1	51	279	22.3
700	31	3,138	10.1	58	92	13.0	31	2,923	-10.8	52	279	25.5
650	31	3,748	6.4	53	87	13.6	31	3,484	-13.6	50	278	30.5
600	31	4,405	2.9	49	85	18.3	31	4,095	-16.9	50	277	34.4
550	31	5,101	- .5	49	80	19.4	31	4,735	-20.9	50	277	38.5
500	31	5,863	- 4.8	46	81	18.3	31	5,441	-25.5	48	274	43.9
450	31	6,678	- 9.5	42	85	18.3	31	6,187	-30.7	43	277	50.3
400	31	7,589	-14.8	38	83	17.7	31	7,026	-36.8		276	57.9
350	31	8,586	-21.5		80	14.0	31	7,938	-43.0		276	62.4
300	31	9,703	-30.0		82	10.5	31	8,963	-49.3		277	72.3
250	31	10,974	-40.5		92	11.1	31	10,146	-53.7		275	78.7
200	31	12,455	-52.9		115	8.5	31	11,574	-55.0		274	70.1
175	31	13,303	-60.0		118	8.2	31	12,426	-55.2		274	66.8
150	31	14,247	-67.8		116	8.3	31	13,413	-55.0		275	54.5
125	31	15,321	-76.1		84	10.9	31	14,582	-54.5		272	46.6
100	29	16,581	-83.6		91	15.5	31	16,004	-56.3		269	44.1
80	24	17,831	-79.2		116	2.9	31	17,420	-57.0		273	37.3
70	24	18,594	-76.0		263	6.4	31	18,265	-57.4		272	31.3
60	24	19,491	-72.5			.0	31	19,239	-56.9		272	28.0
50	24	20,573	-68.6		85	19.6	30	20,392	-56.9		272	22.9
40	23	21,926	-64.0		88	39.2	30	21,805	-57.0		268	22.7
30	22	23,716	-56.7		88	53.8	27	23,622	-55.9		272	28.0
25	22	24,885	-52.1		88	55.6	27	24,786	-54.7		271	30.9
20	22	26,343	-48.1		87	56.9	25	26,210	-53.7		270	33.2
15	20	28,251	-43.2		94	42.6	19	28,070	-52.0		273	38.3
10	18	31,020	-38.8		94	16.7						
7	9	33,445	-37.6									
5												

Standard pressure surface (mb.)	RAPID CITY, S. DAK. 901 MB						ST. CLOUD, MINN. 976 MB						ST. PAUL IS., ALASKA 1012 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	966	- .1	67	330	4.1	31	316	- 2.3	83	221	.6	31	10	- 1.6	89	184	2.1
1000	31	121					31	117					31	101			164	2.1
950	31	538					31	530	- .7	74	232	2.7	31	507	- 3.8	82	213	8.4
900	31	976			324	6.4	31	958	- .6	66	270	8.4	31	934	- 5.7	80	216	9.3
850	31	1,436	2.0	47	294	13.2	31	1,414	- 1.8	61	287	12.0	31	1,382	- 7.2	74	227	11.3
800	31	1,922	- .8	47	296	17.1	31	1,895	- 3.8	54	292	15.2	31	1,854	- 8.8	66	240	14.4
750	31	2,429	- 4.5	47	299	19.0	31	2,399	- 6.4	52	297	17.1	31	2,352	-11.0	61	243	16.1
700	31	2,974	- 8.1	45	296	19.0	31	2,939	- 9.6	53	293	18.8	31	2,879	-13.7	58	241	16.9
650	31	3,550	-12.9	51	291	19.4	31	3,504	-12.9	51	291	19.4	31	3,437	-16.7	58	239	19.0
600	31	4,154	-16.9	49	289	19.8	31	4,114	-16.9	49	289	23.1	31	4,037	-20.1	54	240	23.1
550	31	4,796	-20.8	38	283	21.6	31	4,761	-21.2	46	282	25.3	31	4,674	-24.1	53	235	25.5
500	31	5,500	-25.8	35	275	25.1	31	5,459	-26.1	43	280	24.0	31	5,367	-28.6	51	227	29.9
450	31	6,248	-31.5		275	28.2	31	6,208	-31.9	40	280	34.0	31	6,111	-33.7	44	228	31.5
400	31	7,077	-38.1		274	31.5	31	7,035	-38.4		277	36.5	31	6,931	-39.3		230	34.4
350	31	7,984	-45.1		277	36.5	31	7,939	-45.7		273	40.6	31	7,834	-45.3		231	39.6
300	31	8,996	-52.4		267	38.7	31	8,950	-52.8		271	47.8	31	8,850	-50.6		227	42.4
250	31	10,160	-57.1		268	43.1	31	10,113	-57.3		273	52.8	31	10,027	-54.4		232	42.7
200	31	11,567	-58.0		269	44.3	31	11,524	-57.1		274	45.7	31	11,448	-54.5		242	37.3
175	31	12,412	-56.4		268	43.3	31	12,370	-56.5		272	47.8	31	12,297	-54.7		240	35.6
150	31	13,392	-55.9		268	41.6	31	13,350	-55.8		272	46.0	31	13,286	-54.1		242	34.0
125	31	14,551	-57.0		267	38.5	31	14,508	-56.2		274	42.7	31	14,458	-54.1		245	28.2
100	31	15,963	-57.5		270	35.2	31	15,924	-57.1		275	40.8	31	15,886	-54.2		246	25.8
80	24	17,370	-58.1		268	31.9	31	17,333	-58.0		275	34.4	31	17,315	-54.5		250	23.1
70	24	18,215	-58.3		269	26.2	31	18,177	-58.3		276	32.1	31	18,175	-54.6		251	19.8
60	24	19,182	-58.8		271	22.2	31	19,144	-58.5		274	28.0	30	19,152	-54.6		253	22.0
50	24	20,321	-59.2		266	22.3	30	20,286	-58.9		275	27.0	29	20,311	-55.4		254	21.0
40	23	21,721	-58.9		274	23.5	30	21,686	-59.0		275	26.2	25	21,729	-56.2		266	17.7
30	23	23,526	-58.8		274	23.7	29	23,490	-58.7		274	27.4	23	23,549	-57.2		266	18.7
25	24	24,677	-57.5		276	29.3	28	24,628	-58.4		274	30.7	20	24,705	-57.9		278	20.4
20	26	26,081	-56.8		269	33.0	26	26,034	-57.1		271	32.8	15	26,132	-58.4		293	21.6
15	21	27,901	-54.5				21	27,865	-55.3		266	37.1	13	27,946	-58.9		303	31.3
10							19	30,481	-50.9		270	53.8	5	30,582	-56.4			
7							18	32,821	-47.3		268	68.4						
5							15	35,028	-44.0									

Standard pressure surface (mb.)	SALEM, OREG. 1010 MB						SALT LAKE CITY, UTAH 870 MB						SAN ANTONIO, TEXAS 988 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	61	4.0	89	188	5.1	31	1,288	.3	66	170	7.2	31	243	13.4	73	45	2.1
1000	31	138			195	3.5	31	157					31	141				
950	31	556	4.6	70	207	8.0	31	576					31	573	14.3	61	156	5.2
900	31	996	2.2	67	222	9.3	31	1,020					31	1,029	12.7	58	171	6.6
850	31	1,456	- .6	66	225	11.7	31	1,477	3.0	52	166	8.5	31	1,508	10.9	50	215	5.2
800	31	1,938	- 3.6	64	236	13.4	31	1,966	.6	48	194	9.5	31	2,012	8.8	44	207	10.1
750	31	2,441	- 6.4	59	244	14.6	31	2,478	- 3.2	49	219	9.1	31	2,545	6.6	37	246	10.9
700	31	2,982	- 9.4	52	246	15.3	31	3,023	- 7.3	51	247	9.5	31	3,108	4.0	26	258	15.7
650	31	3,546	-12.6	44	257	15.3	31	3,595	-11.2	49	260	12.6	31	3,703	.7	25	259	22.5
600	31	4,159	-16.6	45	267	17.1	31	4,206	-15.3	45	263	13.6	31	4,345	- 3.6		256	27.6
550	31	4,799	-21.3	45	269	17.9	31	4,860	-19.4	38	265	16.9	31	5,021	- 8.5		259	34.0
500	31	5,503	-26.3	44	266	19.0	31	5,560	-24.3		263	19.6	31	5,760	-13.8		260	38.7
450	31	6,249	-31.9	43	267	20.2	31	6,314	-30.2		265	23.5	31	6,545	-19.0		265	41.4
400	31	7,079	-37.8		275	23.1	31	7,147	-36.4		263	27.2	31	7,421	-25.2		262	51.1
350	31	7,987	-44.5		285	26.4	31	8,059	-43.4		265	29.9	31	8,377	-32.6		262	52.1
300	31	9,004	-51.3		288	29.3	31	9,079	-50.6		271	35.2	31	9,444	-40.9		261	58.9
250	31	10,172	-57.0		275	26.8	31	10,250	-56.5		271	41.4	31	10,661	-49.7		263	68.2
200	31	11,577	-58.6		272	27.6	31	11,657	-58.2		270	43.3	31	12,094	-57.3		263	80.8
175	31	12,420	-56.9		268	27.6	31	12,499	-57.1		268	41.2	31	12,934	-59.6		261	78.9
150	31	13,398	-56.3		270	28.0	31	13,475	-57.1		266	42.4	31	13,892	-62.3		262	77.3
125	31	14,556	-56.9		273	25.1	31	14,625	-57.8		266	41.8	31	15,004	-67.3		264	67.0
100	31	15,970	-56.8		276	22.0	31	16,028	-58.III		264	36.1	30	16,337	-70.6		266	56.0
80	31	17,378	-58.0		275	19.2	30	17,425	-59.4		264	29.1	29	17,658	-71.7		264	38.3
70	31	18,220	-58.0		273	19.4	30	18,267	-59.5		263	25.1	29	18,457	-70.7		263	30.3
60	31	19,191	-57.8		272	16.7	30	19,226	-59.6		265	21.2	28	19,367	-67.7		264	20.8
50	31	20,339	-58.6		278	15.0	30	20,367	-59.8		264	20.4	26	20,478	-63.8		264	13.4
40	29	21,737	-59.3		278	16.5	28	21,758	-59.5		267	18.3	26	21,867	-58.9		251	8.7
30	26	23,542	-59.2		277	19.2	24	23,554	-57.9		274	20.6	25	23,695	-54.2		252	10.7
25	25	24,684	-59.0		281	21.2	23	24,712	-56.7		272	22.7	25	24,868	-51.6		262	8.5
20	23	26,086	-57.8		275	25.1	22	26,134	-54.8		268	31.1	24	26,324	-48.9		264	12.2
15	15	27,901	-56.2		277	32.1	15	27,991	-52.3		268	42.2	20	28,222	-45.8		267	13.0
10	6	30,442	-54.6				5	30,754	-48.5				7	30,850	-43.1			
7																		
5																		

Standard pressure surface (mb.)	SAN DIEGO, CALIF. 1002 MB						SAN JUAN, P. R. 1017 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	124	9.3	86		.0	31	6	22.2	84	105	3.9
1000	31	140			16	.8	31	155	22.5	80	100	12.0
950	31	565	10.3	63	281	4.1	31	594	19.4	79	90	16.9
900	31	1,017	8.5	56	291	5.4	31	1,064	16.1	79	93	16.5
850	31	1,488	6.3	44	293	7.6	31	1,549	13.2	75	92	14.6
800	31	1,983	4.2	34	283	10.1	31	2,057	11.0	67	94	13.8
750	31	2,501	1.9		279	13.6	31	2,593	10.0	37	92	14.8
700	31	3,060	- .8		281	17.1	31	3,165	8.2		91	12.6
650	31	3,645	- 4.1		281	21.8	31	3,766	5.0		84	10.7
600	31	4,276	- 7.8		278	27.8	31	4,423	1.7		90	8.9
550	31	4,943	-12.1		274	30.7	31	5,109	- 2.4		85	6.8
500	31	5,670	-17.2		277	34.0	31	5,869	- 7.0		60	3.1
450	31	6,444	-23.1		275	38.5	30	6,675	-12.5		353	3.3
400	31	7,305	-29.1		273	44.9	30	7,572	-19.4		289	3.7
350	31	8,245	-36.5		274	49.4	30	8,551	-26.7		265	9.5
300	31	9,295	-44.8		271	53.2	30	9,645	-35.2		274	14.8
250	31	10,492	-52.9		269	58.7	29	10,891	-44.5		270	21.6
200	31	11,911	-57.7		266	64.3	28	12,351	-55.1		277	27.2
175	31	12,753	-57.7		263	65.5	28	13,194	-60.4		278	27.2
150	31	13,722	-59.4		264	58.9	27	14,144	-66.2		279	25.6
125	31	14,855	-62.2		261	51.9	27	15,233	-72.1		281	18.3
100	31	16,223	-64.8		262	44.9	26	16,530	-77.3		289	15.3
80	31	17,587	-64.0		260	37.9	26	17,802	-78.7		328	8.2
70	31	18,411	-63.8		258	30.5	26	18,576	-76.3		11	5.6
60	31	19,353	-62.4		260	22.3	26	19,469	-70.3		33	3.3
50	31	20,481	-61.3		264	15.3	26	20,571	-63.3		5	3.5
40	31	21,875	-57.9		270	12.2	25	21,960	-58.4		53	6.6
30	29	23,706	-53.2		272	14.8	25	23,787	-54.2		75	13.8
25	28	24,893	-50.4		269	18.5	24	24,965	-51.1		88	15.0
20	25	26,358	-48.5		264	25.3	24	26,428	-47.4		106	16.3
15	18	28,299	-44.6		266	26.2	21	28,340	-44.7		104	11.9
10							16	31,099	-38.5		89	17.7
7							12	33,577	-34.7		66	19.0
5							6	35,932	-32.1			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MARCH 1963

SANTA MONICA, CALIF. 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	10.9	72	24	4.5
1000	31	137	11.6	67	26	3.3
950	31	566	10.8	55	347	2.5
900	31	1,016	8.6	47	310	3.7
850	31	1,486	5.8	45	277	6.2
800	31	1,980	3.6	35	274	8.4
750	31	2,501	1.0		280	11.1
700	31	3,053	- 1.9		278	15.5
650	31	3,635	- 5.1		284	17.7
600	31	4,264	- 9.0		276	26.4
550	31	4,929	-13.3		278	29.7
500	31	5,651	-18.3		283	33.6
450	31	6,421	-24.2		278	36.3
400	31	7,279	-30.4		279	37.1
350	31	8,215	-37.5		278	43.1
300	31	9,261	-45.5		275	44.1
250	31	10,453	-54.1		274	49.7
200	31	11,865	-58.8		270	56.9
175	30	12,703	-58.8		268	58.1
150	30	13,671	-59.0		265	54.8
125	30	14,807	-61.9		264	48.0
100	30	16,176	-64.6		263	43.1
80	29	17,539	-64.5		261	34.6
70	29	18,361	-63.2		262	29.1
60	29	19,307	-62.5		260	25.1
50	28	20,438	-61.2		267	17.9
40	27	21,828	-59.6		268	15.5
30	26	23,650	-55.0		272	21.8
25	26	24,821	-52.8		292	19.8
20	25	26,264	-50.4		268	28.6
15	24	28,161	-47.9		266	41.2
10	9	30,839	-45.3			
7	5	33,230	-41.6			
5						

SAULT STE. MARIE, MICH. 987 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	- 8.0	83	59	2.5
1000	31	120				
950	31	522	- 6.2	68	58	.6
900	31	945	- 5.0	57	296	5.2
850	31	1,394	- 5.6	50	297	10.9
800	31	1,868	- 7.1	48	297	13.8
750	31	2,371	- 9.0	48	294	16.3
700	31	2,901	-11.6	48	289	20.6
650	31	3,466	-14.6	45	284	24.5
600	31	4,069	-18.3	43	283	27.8
550	31	4,713	-22.6	42	281	30.9
500	31	5,407	-27.1	38	278	34.4
450	31	6,156	-32.2		279	38.5
400	31	6,980	-38.4		279	43.1
350	31	7,885	-45.2		276	50.1
300	31	8,899	-52.0		276	54.0
250	31	10,068	-55.5		273	58.5
200	31	11,487	-56.1		276	55.2
175	31	12,337	-55.7		276	51.7
150	31	13,321	-54.8		275	49.2
125	31	14,486	-55.1		275	45.5
100	31	15,910	-55.7		275	40.4
80	31	17,331	-56.0		274	37.5
70	31	18,181	-56.8		274	33.4
60	31	19,154	-57.6		273	30.3
50	30	20,301	-57.9		274	29.3
40	30	21,708	-58.0		273	27.2
30	30	23,520	-57.9		270	29.9
25	30	24,671	-57.1		269	32.1
20	30	26,086	-56.0		271	35.2
15	30	27,922	-54.8		270	43.9
10	27	30,527	-51.2		270	52.5
7	26	32,877	-46.5		271	63.5
5	22	35,112	-43.0			

SHEMYA, ALASKA 1005 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	.9	84	162	1.2
1000	31	80	.3	76	208	7.6
950	31	488	- 2.1	78	254	3.7
900	31	918	- 4.6	77	249	3.9
850	31	1,367	- 7.1	73	235	5.6
800	31	1,838	- 9.3	66	226	6.8
750	31	2,333	-11.9	60	221	10.7
700	31	2,860	-14.6	51	226	12.4
650	31	3,417	-17.8	46	225	15.0
600	31	4,014	-21.3	40	223	17.3
550	31	4,646	-25.5	40	220	18.7
500	31	5,337	-30.2	40	221	22.3
450	31	6,073	-35.3		222	23.5
400	31	6,891	-41.1		223	27.6
350	31	7,788	-46.7		222	32.1
300	31	8,798	-52.1		227	33.2
250	31	9,971	-54.3		226	36.5
200	30	11,404	-54.5		224	36.1
175	30	12,261	-53.6		223	34.2
150	30	13,254	-52.4		221	32.1
125	30	14,433	-52.6		224	30.9
100	27	15,878	-52.7		224	26.8
80	25	17,318	-52.6		224	22.3
70	25	18,186	-52.5		229	23.3
60	24	19,178	-52.7		229	22.3
50	23	20,358	-52.2		236	18.8
40	22	21,794	-53.2		254	17.1
30	22	23,644	-54.0		260	18.7
25	22	24,813	-54.4		269	20.8
20	20	26,242	-54.8		279	22.9
15	17	28,084	-55.5		282	26.4
10	10	30,639	-56.6			
7						
5						

SHREVEPORT, LA. 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	11.8	83	173	2.7
1000	31	153	12.6	70	161	3.1
950	31	585	12.5	57	210	9.3
900	31	1,038	11.4	47	234	10.9
850	31	1,514	9.3	45	249	14.0
800	31	2,014	6.4	45	249	15.9
750	31	2,540	3.4	43	254	17.9
700	31	3,097	.6	34	257	20.6
650	31	3,685	- 2.9	29	261	26.4
600	31	4,318	- 6.9		261	31.5
550	31	4,986	-11.5		260	36.7
500	31	5,716	-16.1		260	44.9
450	31	6,495	-21.4		259	51.3
400	31	7,359	-27.8		259	57.5
350	31	8,306	-34.6		261	66.1
300	31	9,364	-42.8		262	74.0
250	31	10,571	-51.5		264	80.8
200	30	11,996	-57.5		263	91.1
175	30	12,837	-59.0		263	83.7
150	30	13,800	-61.4		265	77.5
125	30	14,923	-64.7		265	69.8
100	28	16,272	-68.3		269	51.7
80	28	17,607	-68.8		269	44.9
70	28	18,419	-67.7		266	35.6
60	28	19,340	-65.6		269	24.5
50	27	20,460	-61.5		272	14.0
40	27	21,856	-58.2		258	15.7
30	27	23,684	-54.0		257	17.1
25	26	24,859	-52.1		259	17.7
20	24	26,313	-49.9		260	24.1
15	23	28,212	-45.9		270	28.6
10	19	30,940	-41.4		265	41.8
7	15	33,359	-39.0		259	60.2
5	11	35,648	-37.7			

SPOKANE, WASH. 929 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	1.3	75	180	4.7
1000	31	124				
950	31	542				
900	31	980	2.4	67	205	7.2
850	31	1,441	.2	62	229	9.9
800	31	1,924	- 3.1	61	236	10.9
750	31	2,429	- 6.7	63	238	11.9
700	31	2,967	-10.3	59	241	14.8
650	31	3,528	-13.9	57	247	15.3
600	31	4,137	-18.0	55	256	17.3
550	31	4,778	-22.4	51	258	18.1
500	31	5,474	-27.7	49	257	19.8
450	31	6,217	-33.5	47	250	22.5
400	31	7,039	-39.6		255	25.6
350	30	7,937	-46.1		267	29.7
300	30	8,947	-52.6		273	33.2
250	30	10,110	-57.2		280	32.4
200	30	11,519	-57.3		283	30.7
175	30	12,366	-55.8		281	30.5
150	30	13,349	-55.0		280	26.6
125	30	14,513	-55.4		277	23.1
100	29	15,933	-55.8		279	22.5
80	29	17,353	-55.8		277	19.4
70	29	18,200	-56.5		278	17.1
60	29	19,177	-57.5		279	17.7
50	29	20,327	-58.0		278	16.3
40	29	21,730	-58.8		277	15.7
30	29	23,533	-58.9		279	17.7
25	29	24,678	-58.4		280	20.6
20	25	26,078	-58.0		280	25.1
15	20	27,894	-56.0		275	37.7
10						
7						
5						

SWAN ISLAND, W. I. 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	25.3	80	84	10.3
1000	31	130	24.6	79	83	12.8
950	31	579	21.4	78	95	18.7
900	31	1,047	18.3	73	105	19.2
850	31	1,535	15.1	69	104	18.8
800	31	2,047	12.2	66	108	16.9
750	31	2,586	9.7	53	104	14.2
700	31	3,157	8.0	38	100	11.5
650	31	3,766	6.0		103	11.7
600	31	4,419	2.4		114	10.3
550	31	5,110	- 1.5		122	9.1
500	31	5,870	- 6.1		135	7.2
450	31	6,680	-11.9		131	5.4
400	31	7,577	-18.8		211	2.1
350	31	8,557	-26.2		258	6.4
300	31	9,655	-34.2		274	14.2
250	31	10,906	-43.9		279	20.8
200	31	12,369	-54.1		272	27.2
175	31	13,215	-59.9		270	27.4
150	31	14,164	-66.1		269	21.2
125	29	15,249	-72.8		266	15.7
100	28	16,539	-78.2		283	7.2
80	28	17,807	-79.1		53	3.3
70	28	18,576	-77.7		84	5.8
60	28	19,462	-72.7		88	7.2
50	28	20,553	-65.5		83	5.8
40	28	21,933	-59.2		83	10.7
30	28	23,751	-55.3		86	16.1
25	28	24,920	-52.1		86	19.6
20	28	26,382	-47.1		86	23.7
15	23	28,294	-45.1		98	29.7
10						
7						
5						

TAMPA, FLA. 1020 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	[illegible]	15.9	90	87	3.1
1000	31	174	17.1	78	111	4.9
950	31	610	15.9	69	162	4.9
900	31	1,070	13.6	64	216	5.4
850	31	1,550	11.5	59	243	7.8
800	31	2,055	9.4	51	261	8.4
750	31	2,583	6.4	47	270	9.1
700	31	3,153	4.4	32	266	11.9
650	31	3,747	1.8		266	15.7
600	31	4,394	- 2.3		266	20.4
550	31	5,069	- 6.3		266	24.3
500	31	5,819	-11.4		266	29.0
450	31	6,612	-17.1		268	32.1
400	31	7,491	-23.8		267	38.3
350	31	8,452	-30.9		265	42.0
300	31	9,527	-39.2		266	46.0
250	31	10,750	-48.9		269	51.7
200	30	12,192	-56.6		272	55.8
175	30	13,033	-59.4		267	56.7
150	30	13,990	-63.1		269	58.3
125	30	15,096	-68.1		268	52.7
100	30	16,419	-72.7		267	42.9
80	28	17,730	-73.6		269	29.0
70	28	18,525	-70.6		266	20.8
60	28	19,441	-66.5		272	11.9
50	27	20,560	-62.0		280	2.9
40	25	21,958	-57.0		67	2.1
30	21	23,806	-51.9		92	8.5
25	20	24,998	-48.7		91	5.8
20	13	26,478	-46.4		49	3.5
15	5	28,419	-40.7			
10						
7						
5						

TATOOSH IS., WASH 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	5.9	85	121	4.9
1000	31	120			131	3.7
950	31	535	3.5	73	199	8.9
900	31	975	.8	70	212	10.1
850	31	1,432	- 1.8	64	209	11.1
800	31	1,912	- 4.3	56	222	11.1
750	31	2,414	- 7.2	50	234	9.7
700	31	2,953	-10.4	45	250	10.5
650	31	3,515	-13.9	43	255	12.2
600	31	4,123	-17.9	41	258	13.0
550	31	4,762	-22.2	42	251	14.4
500	31	5,461	-26.9	42	255	16.1
450	31	6,202	-32.7	40	254	18.7
400	31	7,031	-39.3		253	21.4
350	31	7,932	-45.8		255	24.3
300	31	8,944	-52.0		249	26.8
250	31	10,109	-57.3		258	26.4
200	31	11,513	-57.8		267	25.1
175	31	12,358	-56.0		268	24.3
150	31	13,340	-55.3		270	23.3
125	31	14,502	-55.8		278	21.0
100	31	15,921	-56.3		280	16.5
80	31	17,335	-57.0		275	17.1
70	31	18,178	-56.9		281	17.5
60	30	19,153	-57.5		281	15.7
50	30	20,301	-58.6		282	14.6
40	30	21,701	-59.0		273	15.7
30	28	23,505	-59.2		276	18.3
25	28	24,648	-59.0		275	21.2
20	28	26,048	-58.6		276	22.3
15	23	27,862	-57.6		279	26.0
10	18	30,459	-53.7		277	38.9
7	11	32,756	-49.3		273	48.2
5						

TOPEKA, KANS. 983 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	3.8	80	223	3.1
1000	31	125				
950	31	547	5.2	63	233	4.7
900	31	986	4.7	55	262	9.9
850	31	1,451	3.8	48	275	15.9
800	31	1,942	1.5	44	274	17.9
750	31	2,458	- 1.5	41	280	20.6
700	31	3,006	- 4.9	38	274	24.9
650	31	3,578	- 8.8	36	270	27.6
600	31	4,200	-13.0	35	272	28.8
550	31	4,854	-17.5	35	269	33.4
500	31	5,564	-22.5		264	38.3
450	31	6,325	-27.8		264	42.0
400	31	7,167	-33.8		268	45.9
350	31	8,090	-40.7		267	51.1
300	31	9,123	-48.1		264	59.1
250	31	10,306	-54.9		263	63.5
200	31	11,721	-57.9		268	68.4
175	31	12,563	-57.9		266	68.6
150	31	13,537	-57.7		267	66.1
125	31	14,682	-60.0		271	56.7
100	31	16,070	-61.1		270	44.3
80	30	17,448	-61.8		271	34.4
70	29	18,275	-61.6		273	29.3
60	29	19,230	-61.3		274	26.4
50	28	20,354	-60.7		273	21.8
40	26	21,739	-59.5		270	19.0
30	21	23,564	-57.5		272	16.1
25	21	24,720	-55.8		276	18.5
20	21	26,147	-53.4		275	24.7
15	19	28,002	-50.5		273	36.9
10	10	30,676	-46.1			
7						
5						

TRUK, CAROLINE IS. 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	2	27.3	79	58	6.2
1000	31	80	26.7	79	63	9.3
950	31	525	23.6	81	75	18.1
900	31	1,006	20.5	80	84	17.9
850	31	1,499	17.8	73	94	15.5
800	31	2,018	15.9	66	102	14.6
750	31	2,565	13.6	56	102	14.2
700	31	3,144	10.6	53	102	14.8
650	31	3,761	7.1	49	98	15.9
600	31	4,413	3.2	47	97	18.1
550	31	5,110	- .8	43	94	18.5
500	31	5,871	- 5.1	41	94	20.4
450	31	6,686	- 9.7		91	19.6
400	31	7,595	-15.2		91	19.6
350	31	8,591	-22.0		94	15.5
300	31	9,706	-30.4		98	11.9
250	31	10,976	-40.6		111	12.6
200	31	12,456	-53.0		127	13.4
175	31	13,303	-60.2		127	14.0
150	30	14,248	-68.2		127	14.2
125	30	15,320	-76.4		104	15.2
100	28	16,582	-83.2		114	19.6
80	26	17,831	-79.1		133	4.1
70	26	18,595	-76.1		225	2.5
60	26	19,493	-72.4		27	2.1
50	25	20,574	-68.8		92	15.2
40	24	21,922	-64.4		96	40.0
30	24	23,712	-57.0		94	53.0
25	24	24,875	-53.3		95	54.6
20	24	26,326	-49.1		93	61.0
15	22	28,239	-43.2		99	46.6
10	20	31,003	-38.5		94	15.2
7	14	33,501	-36.4		88	9.9
5	9	35,865	-32.6			

TUCSON, ARIZ. 924 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	789	8.4	46	161	6.2
1000	31	125				
950	31	555				
900	31	1,006	11.8	38	170	4.7
850	31	1,482	9.5	36	195	4.5
800	31	1,982	6.2	36	217	7.8
750	31	2,505	3.0	35	237	11.1
700	31	3,064	.0		241	16.1
650	31	3,652	- 3.8		246	21.2
600	31	4,281	- 7.9		255	23.7
550	31	4,950	-12.2		258	29.1
500	31	5,676	-16.6		261	38.9
450	30	6,453	-22.1		261	45.7
400	30	7,316	-28.6		260	49.7
350	30	8,259	-35.7		261	56.7
300	30	9,313	-43.6		260	57.7
250	30	10,516	-52.1		260	65.7
200	30	11,940	-57.0		261	69.9
175	30	12,784	-57.3		262	70.5
150	30	13,755	-59.2		261	65.1
125	30	14,889	-62.5		262	56.5
100	30	16,254	-65.4		257	51.1
80	29	17,611	-66.0		260	40.6
70	29	18,433	-64.5		262	34.8
60	28	19,370	-63.5		265	20.2
50	27	20,496	-61.7		259	11.9
40	27	21,889	-58.4		270	12.0
30	27	23,723	-52.9		276	12.0
25	26	24,906	-50.9		267	12.6
20	25	26,371	-47.2		267	22.2
15	23	28,288	-45.2		267	27.2
10	22	31,019	-41.1		267	27.2
7	16	33,490	-36.1		257	42.7
5	5	35,728	-31.2			

WAKE IS., PACIFIC AREA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	24.9	74	68	9.1
1000	31	130	23.9	75	68	10.5
950	31	577	20.3	77	72	10.1
900	31	1,042	16.8	78	76	8.2
850	31	1,528	13.8	75	73	7.2
800	31	2,039	13.1	45	61	4.1
750	31	2,578	11.3	31	356	2.3
700	31	3,154	8.6	27	292	5.1
650	31	3,761	5.1		293	7.0
600	31	4,412	1.4		293	11.9
550	31	5,101	- 2.8		291	15.9
500	31	5,856	- 7.8		289	18.3
450	31	6,660	-13.4		288	26.6
400	31	7,555	-18.5		290	32.3
350	31	8,540	-24.6		289	39.6
300	31	9,647	-31.8		290	45.3
250	31	10,911	-41.3		293	48.2
200	31	12,388	-52.9		293	49.4
175	31	13,237	-59.5		290	48.4
150	31	14,184	-66.6		291	44.7
125	31	15,265	-74.4		285	41.8
100	30	16,541	-80.5		285	33.8
80	28	17,801	-79.1		278	17.7
70	27	18,568	-75.5		274	12.0
60	27	19,473	-69.2		294	4.3
50	27	20,579	-63.7		103	1.9
40	27	21,960	-59.8		113	2.1
30	26	23,774	-56.1		98	5.1
25	26	24,939	-53.3		96	6.0
20	26	26,289	-49.1		70	7.8
15	26	28,291	-46.0		61	5.1
10	24	31,011	-41.6		39	5.8
7	23	33,447	-38.3		338	2.1
5	21	35,765	-33.7		240	1.4

WASHINGTON, D. C. 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	84	1.8	78	295	1.9
1000	31	141			283	2.5
950	31	564	5.6	52	285	10.5
900	31	1,002	4.7	52	281	15.5
850	31	1,466	2.4	52	284	19.6
800	31	1,954	.2	49	281	22.5
750	31	2,470	- 2.7	48	276	24.9
700	31	3,014	- 5.5	45	270	27.8
650	31	3,591	- 8.3	40	270	33.6
600	31	4,209	-12.1	41	272	38.9
550	31	4,868	-16.1	42	272	44.5
500	31	5,583	-20.6	42	271	49.2
450	31	6,352	-25.9	40	268	52.3
400	31	7,196	-31.9	41	269	57.7
350	31	8,126	-38.9		267	65.5
300	31	9,167	-46.1		269	67.4
250	31	10,360	-53.1		271	76.6
200	31	11,779	-57.9		274	82.4
175	31	12,621	-57.8		274	77.5
150	31	13,592	-58.2		271	73.4
125	31	14,736	-59.7		272	60.2
100	31	16,125	-61.1		272	53.8
80	31	17,509	-61.4		272	40.2
70	31	18,345	-61.2		273	34.0
60	31	19,296	-60.3		273	28.2
50	31	20,436	-58.7		273	24.7
40	31	21,841	-57.6		273	21.6
30	31	23,665	-55.4		271	28.2
25	31	24,830	-54.3		272	29.5
20	28	26,266	-53.0		273	32.6
15	23	28,135	-49.8		272	50.3
10	17	30,826	-45.0		275	50.7
7	16	33,239	-40.4		271	74.8
5	12	35,551	-37.2			

WINNEMUCCA, NEV. 867 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,310	- 1.5	71	131	1.4
1000	31	161				
950	31	578				
900	31	1,018				
850	31	1,473	2.2	49	179	2.3
800	31	1,962	- .1	48	158	2.3
750	31	2,474	- 3.9	50	257	8.5
700	31	3,016	- 7.7	51	255	11.7
650	31	3,587	-11.4	45	267	14.0
600	31	4,199	-15.1	38	265	16.9
550	31	4,851	-19.4	36	269	17.9
500	31	5,554	-24.1		270	21.8
450	31	6,311	-29.5		267	22.9
400	31	7,145	-35.7		267	27.8
350	31	8,060	-42.5		264	28.0
300	31	9,085	-49.8		269	29.7
250	31	10,258	-56.3		267	35.8
200	31	11,662	-58.8		266	42.9
175	31	12,501	-57.6		262	41.8
150	31	13,478	-56.6		262	39.2
125	30	14,629	-58.0		263	37.3
100	30	16,030	-58.7		264	31.7
80	30	17,431	-58.8		263	25.3
70	30	18,276	-58.8		264	22.5
60	30	19,238	-58.6		266	21.2
50	29	20,384	-58.5		262	15.3
40	26	21,791	-58.2		262	16.1
30	23	23,602	-57.5		270	16.3
25	20	24,758	-55.8		266	26.4
20	16	26,199	-53.8		270	30.9
15	9	28,019	-51.2			
10						
7						
5						

WINSLOW, ARIZ. 850 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,492	1.4	56	205	4.9
1000	31	159				
950	31	580				
900	31	1,025				
850	31	1,492			189	3.1
800	31	1,985	3.5	40	235	8.5
750	31	2,505	.4	39	245	12.6
700	31	3,056	- 3.1	38	246	17.3
650	31	3,635	- 6.7	32	255	18.5
600	31	4,260	-10.9	33	256	22.0
550	31	4,915	-15.9	36	261	25.1
500	31	5,634	-20.8	35	261	30.3
450	31	6,393	-26.1		268	33.2
400	31	7,247	-32.5		270	39.8
350	31	8,175	-38.7		266	49.9
300	31	9,217	-46.0		268	58.1
250	31	10,410	-53.1		267	65.5
200	30	11,825	-56.9		262	67.8
175	30	12,670	-56.5		262	67.4
150	30	13,645	-58.3		264	60.6
125	30	14,784	-61.0		263	53.8
100	29	16,165	-63.5		258	46.4
80	29	17,533	-63.6		262	37.3
70	29	18,359	-63.3		262	29.1
60	28	19,307	-62.4		264	21.6
50	28	20,434	-61.8		259	15.7
40	28	21,823	-59.2		268	15.9
30	27	23,635	-55.8		271	18.3
25	26	24,805	-53.5		272	21.8
20	24	26,258	-50.8		275	30.5
15	13	28,188	-46.4		281	32.6
10						
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	YAKUTAT, ALASKA 1010 MB						YUCCA FLAT, NEV. 880 MB						YUMA, ARIZ. 998 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	12	- 1.5	82	93	4.1	31	1,196	- .7	58	264	1.7	31	131	10.3	35	44	1.7
1000	31	89			125	4.1	31	156					31	115			53	3.1
950	31	499	- 2.1	70	103	4.7	31	571					31	545	15.1	29	305	6.2
900	31	926	- 4.6	70	128	3.3	31	1,011					31	1,003	12.3	29	303	6.6
850	31	1,375	- 7.2	70	149	2.3	31	1,476	4.8	37	342	1.4	31	1,478	9.0	29	279	6.4
800	31	1,845	- 9.9	70	239	2.3	31	1,968	2.1	35	228	1.8	31	1,977	6.0	25	269	7.0
750	31	2,338	-12.7	67	261	6.0	31	2,484	- 1.4	36	235	4.5	31	2,501	3.0	23	263	10.5
700	31	2,864	-15.6	62	260	8.4	31	3,032	- 4.7	35	243	8.2	31	3,058	- .2	21	268	14.0
650	31	3,416	-18.7	55	266	12.8	31	3,605	- 7.9	36	256	12.2	31	3,644	- 3.8	23	271	20.0
600	31	4,013	-22.3	51	275	15.9	31	4,229	-11.9		262	15.5	31	4,274	- 8.0	22	269	25.5
550	31	4,642	-25.9	47	279	19.4	31	4,881	-16.7		274	17.5	31	4,939	-12.3	22	270	33.4
500	31	5,332	-30.7	45	290	22.5	31	5,598	-21.9		276	21.6	31	5,665	-17.7	21	270	37.3
450	31	6,070	-35.4		293	26.2	31	6,355	-27.4		273	25.8	31	6,437	-23.4	23	269	43.9
400	31	6,885	-40.8		295	32.1	31	7,202	-33.7		267	28.4	31	7,296	-29.4	26	268	50.5
350	31	7,782	-46.7		298	33.0	31	8,125	-40.3		273	35.0	31	8,235	-36.4	26	268	62.8
300	31	8,790	-52.6		297	38.9	31	9,161	-47.1		271	42.9	31	9,286	-44.5		268	67.6
250	31	9,958	-55.6		299	38.7	31	10,350	-53.7		278	49.0	31	10,483	-52.6		267	76.0
200	31	11,380	-54.9		295	33.4	31	11,766	-58.2		270	51.3	30	11,897	-57.4		266	79.3
175	31	12,234	-54.1		298	26.8	31	12,608	-57.0		270	56.3	29	12,736	-57.9		267	74.6
150	31	13,224	-53.8		297	28.4	31	13,582	-58.0		268	55.0	29	13,705	-59.0		265	68.0
125	31	14,396	-53.4		297	25.8	29	14,721	-59.6		266	51.5	27	14,835	-61.5		264	59.1
100	31	15,829	-54.3		292	23.3	29	16,111	-61.1		263	39.6	21	16,190	-64.3		270	51.3
80	31	17,256	-54.9		295	23.3	27	17,502	-60.9		263	35.4	19	17,561	-65.0		263	47.0
70	31	18,108	-55.5		294	22.7	27	18,333	-61.1		262	29.7	16	18,363	-64.3		258	35.4
60	31	19,089	-56.1		292	22.7	27	19,288	-60.8		267	25.1	15	19,304	-63.3		261	28.0
50	31	20,245	-57.0		298	21.0	27	20,423	-60.0		278	18.5	13	20,438	-61.6		268	22.0
40	29	21,654	-58.1		297	20.8	26	21,814	-59.2		274	15.5	11	21,835	-59.7		258	19.2
30	28	23,453	-59.8		305	24.7	24	23,632	-56.0		276	21.6	11	23,654	-54.7		258	23.5
25	28	24,589	-60.7		306	20.8	24	24,794	-54.3		280	25.3	10	24,827	-53.6			
20	25	25,983	-60.6		304	20.2	22	26,230	-51.5		271	33.2	9	26,283	-50.6			
15	22	27,789	-60.9		320	21.6	16	28,104	-49.6		270	49.4	8	28,201	-45.6			
10	7	30,382	-58.5										7	30,938	-41.7			

Note All observations scheduled at 1200, G C T Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes Number of observations refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. MARCH 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Mar.									
1	----	----	----	----	1.45	----	----	----	----
2	0.85	1.00	1.08	1.27	----	----	----	----	----
3	.87	1.00	1.11	1.24	----	----	----	----	----
4	----	.97	----	1.21	----	----	----	----	----
5	----	----	----	1.35	1.50	1.39	1.28	1.19	1.14
7	1.05	1.15	1.27	1.39	1.49	1.35	1.19	1.08	.93
8	.89	.99	1.12	----	----	----	----	----	.89
9	----	----	----	----	----	1.33	----	----	.83
10	----	----	----	----	(1.27)	----	----	----	----
11	----	----	----	----	(1.19)	----	----	----	----
12	----	(.73)	(.85)	(1.05)	---- D	(.72) D	(.55) D	(.43)	----
16	.85	.95	1.04	1.23	1.44	1.28	1.07	.91	.75
19	.89	1.00	1.10	1.25	1.39	1.28	1.13	1.02	.93
20	.93	1.04	1.18	1.31	1.45	----	----	----	----
22	.63	.78	.91	1.10	----	----	----	----	----
24	.98	1.09	1.21	1.35	1.45	1.18	1.03	.95	.85
25	----	----	----	----	(1.40)	1.31	----	1.02	.94
26	.95	.94	1.27	----	----	----	----	----	----
30	----	----	----	----	1.40	1.25	1.12	.99	.88
Averages	0.89	0.99	1.03	1.27	1.44	1.30	1.14	1.02	0.90

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Mar.									
3	0.87	0.94	1.03	1.18	----	----	----	----	----
7	.91	1.01	1.11	1.29	1.42	1.27	1.10	0.96	0.77
8	.93	1.02	1.12	1.29	----	----	----	----	----
9	.65	.87	.90	1.07	----	----	----	----	----
11	1.01	1.06	1.18	----	----	----	----	----	----
14	----	----	----	----	----	1.25	1.08	.95	.86
15	.97	1.07	1.18	1.33	1.45	1.23	1.03	.90	.78
16	.89	1.01	1.12	1.28	1.40	----	----	----	----
19	.66	.78	.93	1.11	----	----	----	----	----
22	.95	1.06	1.18	1.34	1.48	1.30	1.18	1.05	.94
23	.94	1.05	1.18	----	----	----	----	----	----
24	.92	1.04	1.14	1.31	1.42	1.13	.93	.76	.61
26	.48	.60	.77	1.03	1.34	1.13	.86	.72	.59
29	.94	1.05	1.15	1.30	----	----	----	----	----
31	.69	.82	1.00	1.27	1.46	1.26	1.09	.96	.76
Averages	0.84	0.96	1.07	1.23	1.42	1.22	1.04	0.90	0.76

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Mar.									
8	0.80	0.90	1.00	1.14 S	1.16 S	1.22 S	1.09	----	----
10	M .89	M .96	---- M	1.10	----	----	----	----	----
14	HM .75	HM .86	HM 1.00	HM 1.16	HM 1.25	----	----	----	----
20	----	----	----	---- S	1.31	----	----	----	----
21	HS .88	----	HS 1.13	HS 1.26	HS 1.38	HS 1.13	HS .92	HS 0.69	HS 0.51
22	----	----	HI .80	HM 1.02	HM 1.16	HS 1.00	HS .78	HS .61	HS .48
23	HM .64	HM .74	HM .88	HM 1.03	----	----	----	----	----
24	---- M	.61	HM .77	HM 1.00	----	----	----	----	----
27	S .76	S .87	S 1.00	----	---- S	1.12	----	----	----
Averages	0.79	0.82	0.94	1.11	1.25	1.12	0.93	0.65	0.50

MADISON, WIS.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Mar.									
14	----	---- I	1.10 M	1.21 S	1.36	---- M	1.09 M	0.97 M	0.84
21	S 0.79	S 0.88 S	1.03 S	1.25 S	1.41	----	----	----	----
28	----	.90	1.03	----	----	----	----	----	----
Averages	0.79	0.89	1.05	1.23	1.39	----	1.09	0.97	0.84

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Mar.									
2	1.00	1.10	1.20	1.40	----	----	----	----	----
3	1.00	1.10	----	----	----	----	----	----	----
5	1.00	1.10	1.20	----	----	----	----	----	----
7	.90	1.10	----	1.30	----	----	----	----	----
8	.90	1.00	----	----	----	----	----	----	----
9	----	----	1.20	----	----	----	----	----	----
10	.60	.70	1.00	1.20	----	----	----	----	----
12	.70	.80	1.00	1.20	----	----	----	----	----
14	.80	.90	1.10	----	----	----	----	----	0.80
15	.90	1.00	1.10	----	----	----	Inoperative		.70
16	.40	.50	.70	----	----	----	----	1.00	.90
18	----	----	----	----	----	----	----	1.10	1.00
19	1.00	1.10	----	----	----	----	----	----	.90
20	1.00	1.10	1.20	----	----	Inoperative in afternoon			
21				Inoperative					
23	----	----	----	----	----	----	1.10	1.00	.90
24	1.00	1.10	1.20	----	----	----	----	----	----
30				Inoperative					
31	.90	1.00	1.10	1.30	----	----	----	1.00	.90
Averages	0.90	1.00	1.10	1.30	----	----	1.10	1.00	0.90

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Mar.									
1	1.21	1.29	1.38	1.49	----	----	----	----	----
2	----	----	----	----	1.61	----	----	----	----
3	1.16	1.24	1.32	1.43	1.58	----	1.28	1.21	1.12
4	1.21	1.30	1.38	1.50	1.59	----	----	----	----
5	1.21	----	----	----	----	----	----	----	----
6	1.17	1.25	1.35	----	----	----	----	----	----
7	----	----	----	1.45	----	----	----	----	----
8	1.19	1.26	1.36	1.47	----	----	----	----	----
9	1.25	1.32	1.41	1.53	----	----	----	----	----
10	1.23	1.29	1.39	1.51	1.59	1.48	1.35	----	----
12	1.18	1.26	----	1.47	----	----	----	----	----
14	----	----	----	1.47	----	----	----	----	----
20	1.20	1.25	1.36	1.47	----	----	----	----	----
21	1.21	1.29	1.37	1.46	----	----	----	----	----
22	----	----	----	1.44	----	----	----	----	----
23	----	1.23	1.33	1.50	----	----	----	----	----
24	----	----	----	1.50	----	----	----	----	----
25	----	----	----	1.50	----	----	----	----	----
29	----	1.20	----	1.40	----	----	----	----	----
Averages	1.20	1.27	1.37	1.47	1.59	1.48	1.32	1.21	1.12

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
			No observations due to cloudiness.						

( ) Clouds present
D Dust
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable
HS Slight haze
HM Moderate haze
HI Intense haze
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MARCH 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
AMES IOWA	388	47	114	508	516	480	469	456	251	524	518	432	314	508	298	314	324	251	181	38	177	314	300	430	259	433	44	60	243	473	180	221
ANNETTE ALASKA	328	205	143	229	343	259	336	429	429	154	92	233	340	463	484	259	200	200	81	221	226	296	311	225	237	79	188	189	253	359	122	364
APALACHICOLA FLORIDA	504	335	375	426	639	648	628	601	590	509	628	583	623	628	638	452	61	455	269	170	382	569	578	581	134	319	260	388	313	495	539	140
ASTORIA OREGON	508	257	234	310	273	308	330	143	92	160	63	166	168	305	254	272	129	297	394	268	409	405	399	418	126	230	135	409	193	458	165	432
ATLANTA GEORGIA	334	392	374	591	630	638	609	574	485	445	643	595	619	632	622	443	94	496	531	101	127	642	673	530	123	550	101	60	511	337	528	137
BARROW ALASKA	214	209	203	200	185	247*	188	255	---	242	289	315	266	172	340	158	130	94	124	122	128	143	123	74	126	109	178	154*	126	173	200	200
BETHEL ALASKA	275	355	390	186	216	272	211	200	205	448	432	462	435	262	276	235	184	67	117	118	146	83	87	56	142	306	152	286	247	190	291	185
BISMARCK N.DAK.	454	402	441	486	439	450	430	173	88	510	487	244	483	492	521	343	---	---	---	325*	375	375	379	289	347	359	138	279	450	453	339	38
BLUE HILL MASS.	107	299	491	93	406	552	449	539	460	521	396	464	563	121	585	335	217	98	417	146	157	38	452	469	276	113	377	51	120	414	499	489
BOISE IDAHO	170	401	465	493	374	223	75	502	502	490	79	276	228	401	274	359	355	295	462	457	316	---	462	451	452	410	215	472	486	225	360	413
BOSTON MASSACHUSETTS	80	309	468	77	354	555	482	506	440	494	395	458	571	121	577	334	218	80	412	118	197	24	461	446	293	---	---	40	100	416	497	482
BROWNSVILLE TEXAS	548	---	172	488	290	192	320	526	398	200	400	417	411	628	627	365	402	341	342	501	432*	551	384	248	---	228	519	533	409	210	184	547
CANTON ISLAND P.I.	639	628	666*	658	671	645	649	599*	---	655	663	500*	542	---	561*	297	700	694	700	687	604	684	690	696	684	644	633	672*	639*	---	676*	540*
CAPE HATTERAS N.C.	207	550	127	262	483	360	587	581	561	413	448	456	593	593	555	420	208	428	494	428	260	314	449	529	359	524	281	328	466	487	569	137
CARIBOU MAINE	246	295	516	418	498	430	460	518	380	208	121	391	558	250	563	376	415	380	346	417	424	177	252	393	423	179	475	269	246	396	518	502
CHARLESTON S.C.	---	---	---	409	625*	613*	617*	612	---	450	575	---	633	627	615	---	228	427	461	209	298	499	540	569	167	575	174	---	---	---	---	---
COLUMBIA MISSOURI	537	239	137	---	---	---	---	---	---	---	---	---	---	---	---	---	---	400	244	340	---	---	336	384	321	259	375	143	454	99	530	287	359
CORVALLIS OREGON	417	193	311	344	259	153	147	189	192	146	101	---	---	---	---	286	215	178	299	326	391	425	437	457	462	300	216	450	323	269	198	326
DAVIS CALIFORNIA	439	510	541	535	400	360	355	571	496	327	64	445	408	362	403	414	459	483	501	503	244	253	501	287	480	376	503	540	522	228	538	213
DODGE CITY KANSAS	550	387	585	581	582	577	550	537	620	601	609	511	520	322	403	453	385	394	467	74	517	518	521	298	520	38	504	166	236	552	520	385
E. LANSING MICHIGAN	57	466	67	213	273	489	516	447	244	111	532	513	366	406	296	302	322	337	113	23	100	163	422	328	464	477	126	157	217	473	475	164
EL PASO TEXAS	640	652	671	642	443	520	628	673	622	657	685	673	489	482	450	574	577	575	524	273	605	577	594	607	584	601	557	621	531	476	533	634
ELY NEVADA	268	---	---	581	594	364	---	---	510	---	381	274*	627	644	593	432	435	343	434	526	427	526	482	522	515	321	364	425	---	428	332	431
EPPLEY,NEWPORT R.I.	125	314	466	72	307	523	398	506	427	496	496	479	542	189	562	328	170	138	399	207	95	53	423	419	298	130	358	65	109	458	480	466
FAIRBANKS ALASKA	285	288	298	297	280	252	164	124	72	208	285	384	379	363	316	208	---	212	85	83	99	78	85	61	100	131	236	116	258	168	271	256
FLAMING GORGE UTAH	430	253	566	580	---	525	521	519	585	536	547	335	---	---	---	429	336	287	197	215	441	502	510	507	512	491	193	237	537	493	220	511
FORT WORTH TEXAS	477	327	601	660	653	491	684	321	---	---	---	564	535	502	520	459	468	517	41	264	522	506	534	398	489	214	537	550	449	440	101	493
FRESNO CALIFORNIA	400	497	517	531	492	422	330	571	479	337	30	589	566	591	456	434	395	459	470	464	355	442	433	432	402	345	434	506	498	339	555	126
GLASGOW MONTANA	444	422	361	433	326	307	417	196	480	474	459	67	419	435	475	340	241	305	214	416	131	220	346	180	347	308	288	227	442	404	393	368
GRAND JUNCTION COLO.	209	385	525	586	586	501	563	547	613	576	569	---	635	---	---	461	273	225	194	309	533	539	540	535	539	543	285	222	585	538	276	466
GREAT FALLS MONTANA	422	302	333	299	302	373	394	312	472	442	---	195	405	462	268	327	223	310	---	373	256	227	388	254	394	280	265	281	428	348	180	306
GREENSBORO N.C.	250	517	328	555	362	601	599	561	514	105	584	527	571	566	480	402	77	459	508	306	62	480	528	532	334	529	59	58	467	349	551	56
GRIFFIN EXP.STA.GA.	246	277	465	668	696	698	679	630	576	434	697	649	675	702	679	456	101	531	530	79	118	630	601	618	101	597	154	145	541	220	251	161
INDIANAPOLIS INDIANA	495	375	211	161	361	582	533	500	179	65	549	607	496	241	44	314	154	397	481	28	64	350	319	531	116	475	51	503	64	361	404	50
LAKE CHARLES LA.	401	210	316	549	543	409	544	323	434	552	568	553	532	548	573	419	562	---	414	291	98	588	601	470	548	348	113	461	453	120	155	298
LANDER WYOMING	447	497	540	532	542	515	533	542	---	545	531	295	542	568	508	458	215	289	260	456	347	485	483	481	469	474	196	339	547	587	465	526
LARAMIE WYOMING	343	117	521	501	506	505	443	473	546	431	434	375	553	524	397	409	105	239	174	293	475	462	452	443	458	457	244	338	496	482	416	473
LAS VEGAS NEVADA	480	---	589	598	589	329	511	615	591	---	536	401	642	636	564	516	512	484	441	552	478	524	505	526	519	516	540	539	562	556	460	182
LITTLE ROCK ARKANSAS	448	220	451	543	565	557	538	306	367	510	519	501	515	488	492	424	---	---	---	---	179	500	498	489	415	441	360	448	423	415	117	136
LOS ANGELES CALIF.WB	439	541	570	579	547	489	514	572	537	456	463	347	527	564	502	480	475	439	505	517	477	490	464	463	495	465	486	442	501	416	426	187
LOS ANGELES CALIF.CO	387	551	582	595	561	510	462	601	542	477	480	308	509	568	464	446	453	430	513	518	488	496	360	489	372	397	447	404	521	407*	555	193
MANHATTAN KANSAS	511	61	424	515	546	522	466	454	500	555	375	510	405	172	161	355	373	273	284	13	256	398	433	266	460	246	116	62	241	519	409	472
MATANUSKA ALASKA	191	210	306	327	292	330	348	258	67	205	401	365	395	398	314	209	193	84	77	43	119	60	25	169	28	169	222	80	285	82	293	149
MAUNA LOA OB.HAWAII	313	513	347	696	508	377	438	665	769	608	641	489	582	550	412	529	536	557	702	584	350	---	695	713	736	730	230	575	---	---	223	281
MEDFORD OREGON	262	417	461	388	395	432	305	400	361	119	148	406	431	497	401	333	365	168	377	403	193	340	427	373	444	351	338	452	380	180	212*	322
MIAMI FLORIDA	609	607	619	565	636	630	564	511	615	644	615	611	440	624	361	533	453	487	454	356	566	477	316	526	397	513	543	527	573	543	579	560
MIDLAND TEXAS	561	581	597	585	402	542	460	601	595	489	580	606	571	300	520	---	---	---	---	---	---	---	---	---	---	---	---	552	526	239	471	579
NASHVILLE TENNESSEE	547	126	256	554	615	595	564	527	---	---	549	520	525	536	506	391	23	417	439	321	91	531	523	504	581	488	17	312	510	85	453	128
NORTH OMAHA NEBRASKA	469	39	195	514	572	536	528	---	297	---	---	---	390	527	365	340	338	138	186	64	282	439	397	485	418	423	107	50	258	515	361	298
OAK RIDGE TENNESSEE	408	252	169	507	323	547	522	480	247	330	523	494	534	510	498	354	59	364	442	214	52	389	466	473	191	472	37	65	434	350	415	215
OKLAHOMA CITY OKLA.	518	378	563	547	571	561	518	476	568	559	559	457	481	45	455	416	288	476	170	125	409	419	516	382	449	66	508	509	140	492	152	548
PAGE ARIZONA	182	447	547	553	547	440	488	573	553	529	484	269	572	565	505	464	---	353	---	492	483	465	428	488	440	484	412	443	526	507	421	270
PHOENIX ARIZONA	127	599	628	624	612	382	630	636	616	575	615	350	365	643	601	530	529	518	368	515	548	539	561	551	560	547	522	547	527	567	460	578

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MARCH 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PORTLAND MAINE	337	223	434	208	398	60	414	445	410	134	440	109	339	306	---	517	78	335	506	115	507	531	495	587	219	388	316	446	555	208	651	357
PROSSER WASHINGTON	263	327	410	352	406	413	418	438	432	350	278	391	398	255	391	181	364	303	158	346	139	446	175	445	420	256	85	390	398	337	450	336
PULLMAN WASHINGTON	265	249	213	397	---	321	---	440	441	374	414	409	474	160	234	297	473	234	116	425	293	351	230	513	486	432	118	349	150	193	478	329
RAPID CITY S.DAK.	345	265	143	442	369	341	407	362	348	373	325	134	440	469	347	162	474	340	496	451	509	512	422	422	468	376	463	251	538	540	490	388
RIVERSIDE CALIFORNIA	515	495	487	577	508	553	459	526	379	399	430	459	581	554	576	200	320	599	624	630	598	510	401	638	574	517	562	196	545	613	440	499
SAINT CLOUD MINN.	318	126	83	219	348	118	155	381	159	324	115	109	366	461	356	52	255	235	289	544	541	498	504	470	222	541	450	418	423	449	507	324
SALT LAKE CITY UTAH	336	357	496	458	439	465	498	492	516	404	141	297	547	520	180	524	405	273	575	573	589	370	407	558	588	543	502	---	642	641	598	464
SAN ANTONIO TEXAS	558	540	151	431	471	527	568	213	560	126	586	588	580	190	51	303	226	447	373	599	342	396	301	287	295	507	619	548	249	528	559	410
SANTA MARIA CALIF.	482	490	474	516	425	504	461	297	516	364	490	522	531	452	553	60	552	528	572	572	426	333	386	592	543	483	330	562	623	614	619	480
SAYVILLE NEW YORK	58	114	322	174	62	67	254	288	216	174	203	56	74	388	389	360	---	170	349	39	199	417	377	395	372	397	393	390	450	180	475	260
SEATTLE WASH. UNIV.	87	202	288	187	246*	337	359	357	246	126	165	346	202	191	261	91	281	209	98	303	237	287	109	329	117	150	144	170	146	192	191	199
SEATTLE TACOMA WASH.	---	---	---	---	---	372	381	391	321	165	176	344	252	304	258	172	408	209	133	298	253	278	161	326	132	147	142	168	144	124	362	247
SHREVEPORT LOUISIANA	285	484	381	100	221	524	516	372	446	474	396*	---	530	459	131	175	432	142	365	604	562	566	580	288	370	567	607	587	576	547	587	403
SPOKANE WASHINGTON	262	280	293	327	276	180	379	389	397	284	280	414	382	169	126	302	384	356	181	374	240	394	143	285	440	383	129	313	211	190	356	294
STATE COLLEGE PENN.	69	207	406	87	56	162	250	279	187	382	109	163	290	395	494	331	407	255	127	164	304	504	535	522	443	394	328	487	501	78	466	303
STERLING VIRGINA	65	352	489	246	39	323	405	457	204	494	58	124	265	359	554	251	472	491	43	299	358	585	554	538	536	332	530	---	560	431	355	359
STILLWATER OKLAHOMA	359	451	110	86	288	---	---	314	467	99	---	506	111	528	163	545	505	324	558	562	575	558	621	358	576	522*	510	481	477*	53	458	327
SWAN ISLAND W.I.	590	539	600	598	620	599	627	564	621	614	542	563	582	547	626	601	637	639	632	611	558	108	416	561	473	174	634	599	616	641	672	561
TAMPA FLORIDA	315	62	255	462	519	263	370	575	243	281	497	545	537	537	530	514	---	532	545	---	647	658	636	626	---	558	504	604	643	549	629	487
TUCSON ARIZONA	529	534	396	526	550	544	527	524	566	512	472	540	473	524	581	586	337	514	608	603	564	395	614	632	581	568	624	460	115	604	633	524

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month

MARCH 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	75	107	57	107	27	114	154	103	170	192	53	140	146	140	176	60	195	168	82	173	191	167	215	22	186	113	207	34	199	229	216	136

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $\lambda S \Omega \Omega \Omega$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

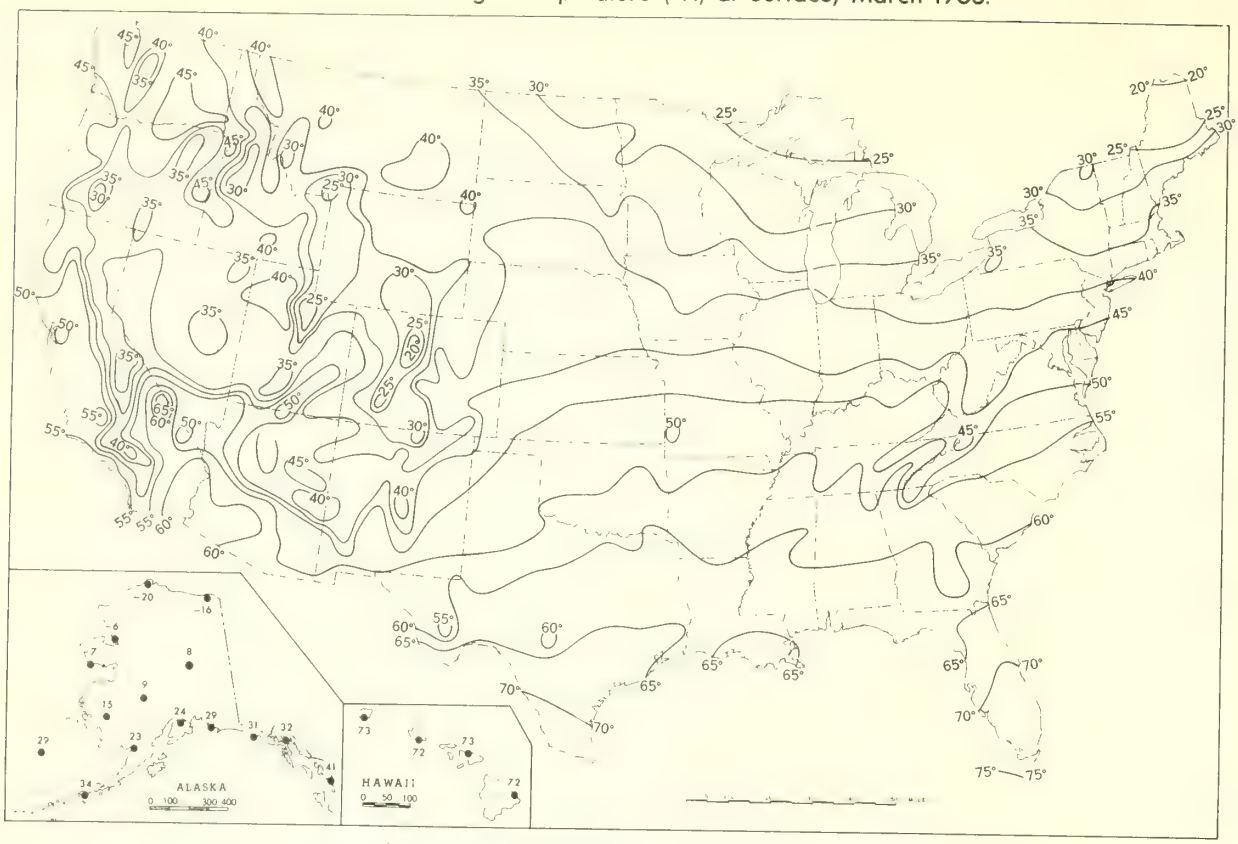
Units: Milli-atmo-cms.

MARCH 1963

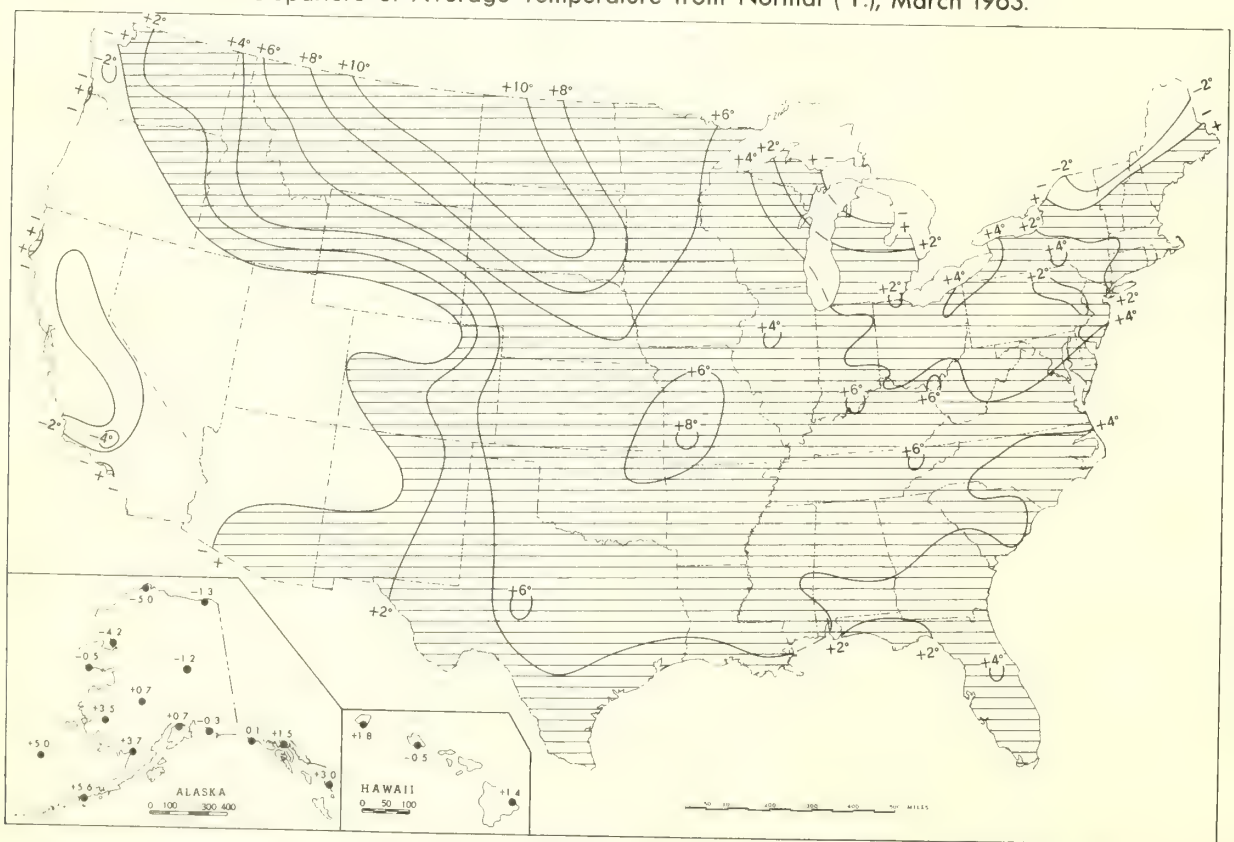
Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean O_3
Bismarck, N. Dak.	06388	05433	05448	00475	00378	00395	00437	05425	00444	00418	05425	06434	00477	00391	04418	36463	00422	00420	00428	00429	00371	00335	00329	04346	05410	00394	00392	05366	00392	00364	00350	406
Caribou, Maine	00437	00399	00430	-----	-----	-----	04439	03469	00470	04437	00475	03416	06402	00469	00467	00452	05431	-----	00423	06459	00424	00423	00465	00402	00358	04395	07372	06453	00413	05367	00422	428
Green Bay, Wis.	00393	34427	34434	02406	-----	00403	04448	00448	00443	00445	05472	05405	00448	00424	03395	-----	00396	03404	-----	35427	00447	00388	00356	00349	04405	06404	00405	00389	06379	00331	00322	407
Mauna Loa, Hawaii	00282	00282	00270	00270	-----	00266	00266	00270	00273	00266	-----	00263	00263	00267	-----	-----	-----	-----	00268	00270	00275	00277	00269	00280	-----	-----	-----	-----	00267	00268	-----	271
Midland, Texas	00338	00330	00306	00304	00360	00318	00323	00300	00291	00288	00292	00297	00297	05287	00290	00285	00278	00286	00302	00306	00382	00391	04270	00279	00279	00294	00302	00289	00278	05280	03260	303
Nashville, Tenn.	-----	00401	00361	00343	-----	00382	-----	00360	05397	00383	-----	-----	00313	05351	05317	-----	00322	05340	00288	00343	00406	00402	00364	00380	-----	00366	00389	00430	00364	00322	00312	360
Sterling, Va.	05401	-----	-----	00346	07365	00369	06362	00394	-----	-----	34387	04319	00316	06321	00342	-----	-----	00336	-----	06374	06433	02451	-----	-----	00365	00352	00367	00399	00376	-----	-----	369

The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded $\Omega \Omega \Omega$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e.g., 350 milli-atmo-cm ozone implies an ozone layer 0.350 centimeter thick. The code λS designates the type of measurement made.

Chart I. A. Average Temperature (°F.) at Surface, March 1963.



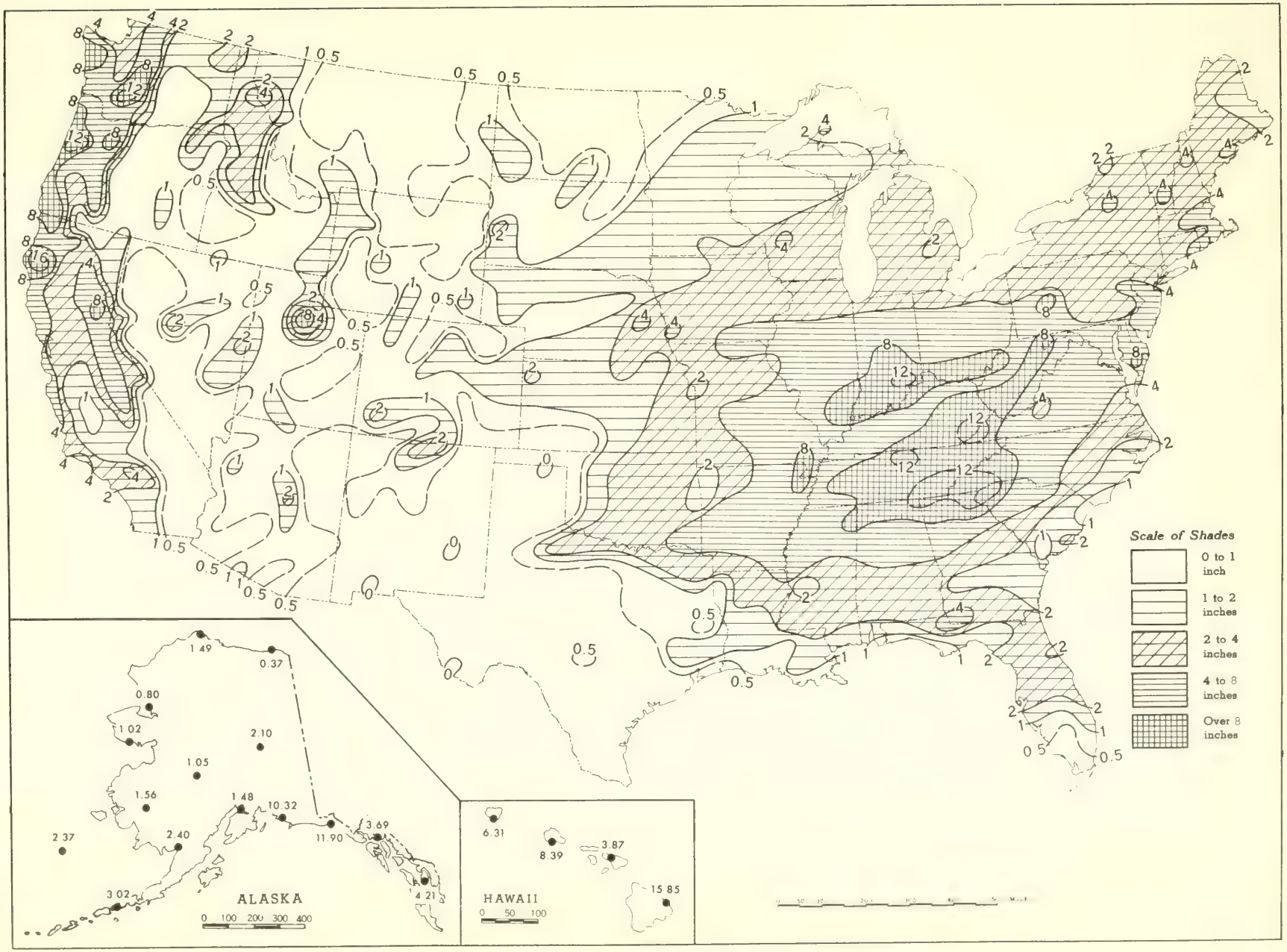
B. Departure of Average Temperature from Normal (°F.), March 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

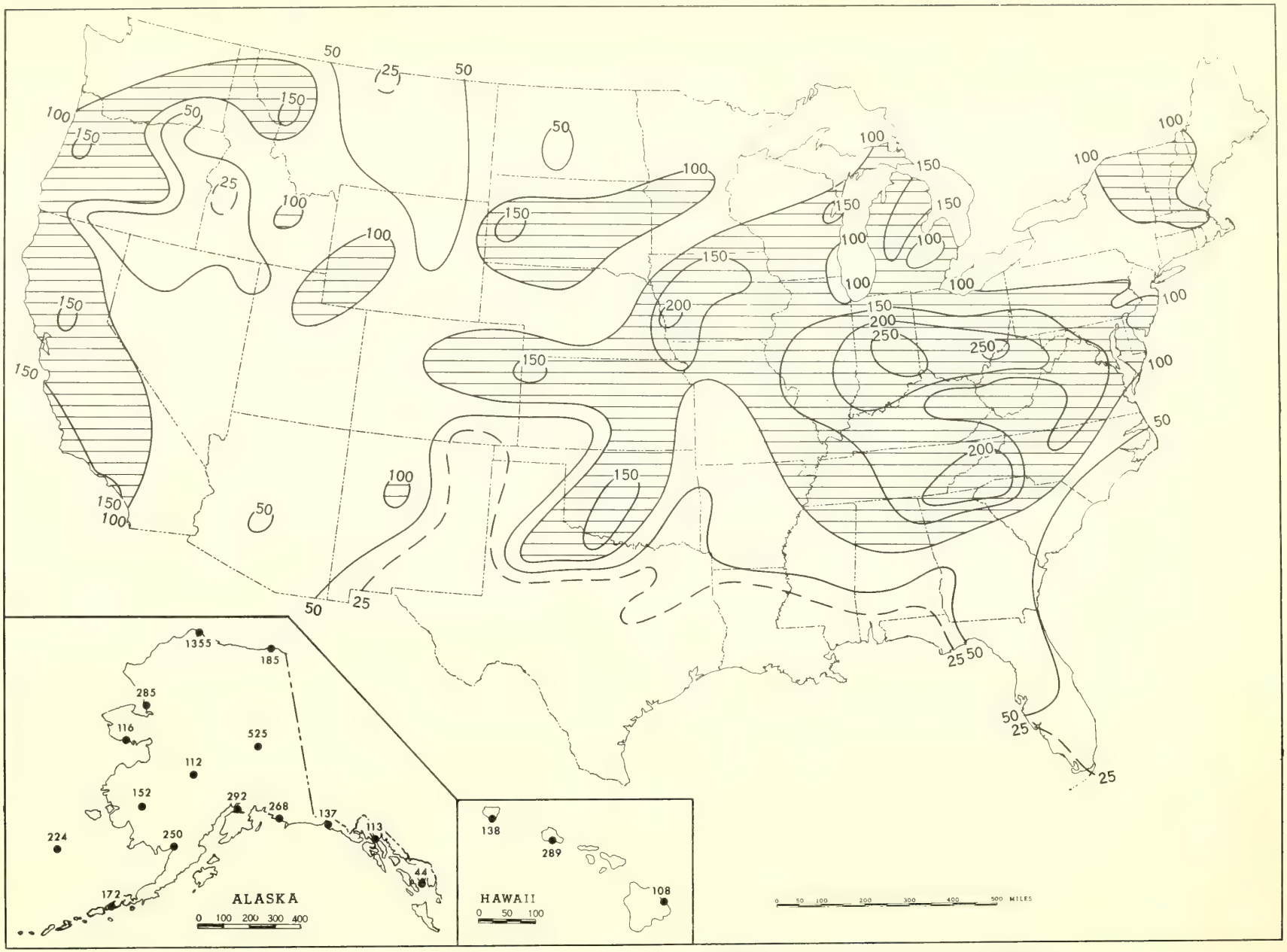
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), March 1963.



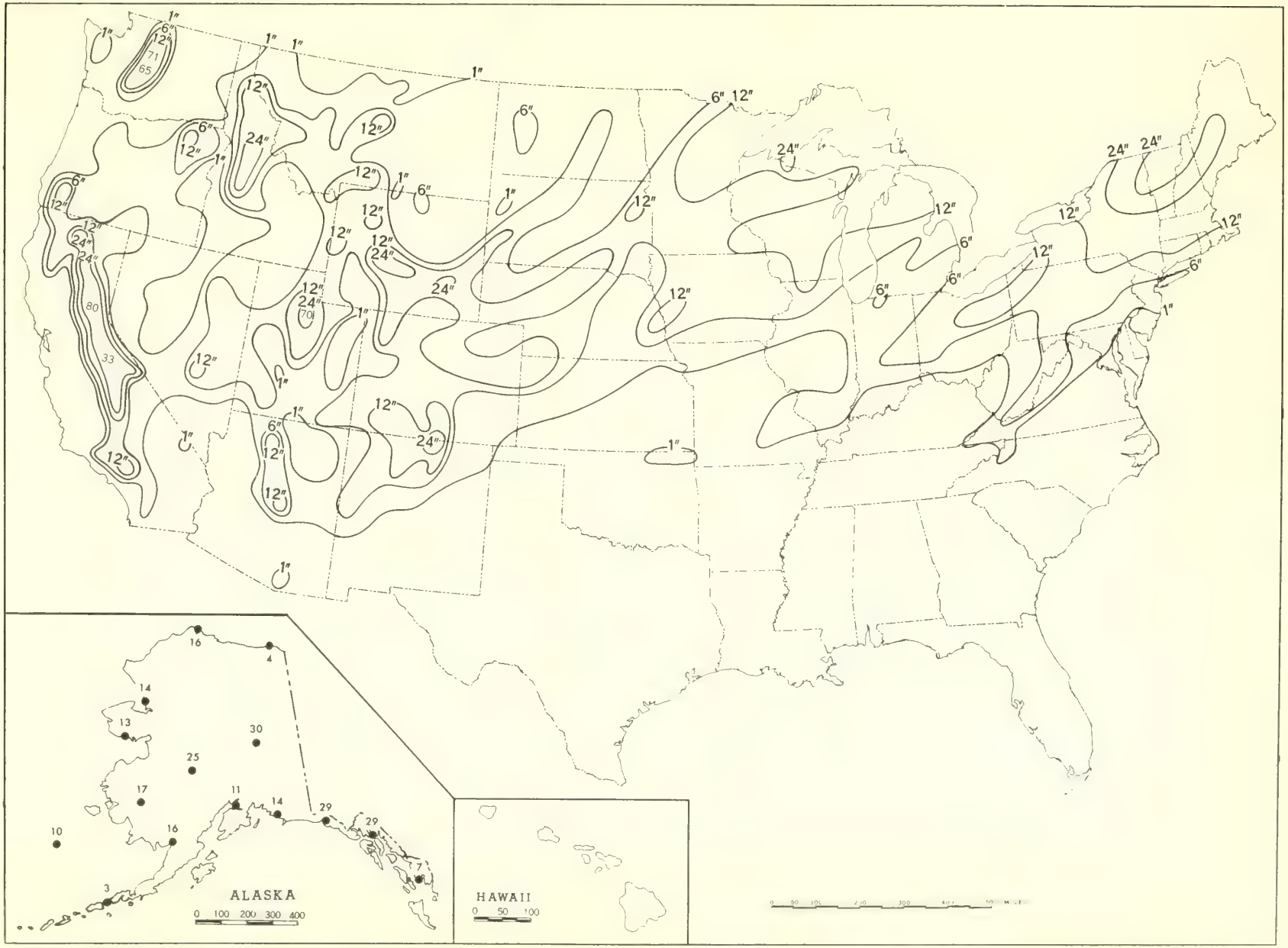
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, March 1963.



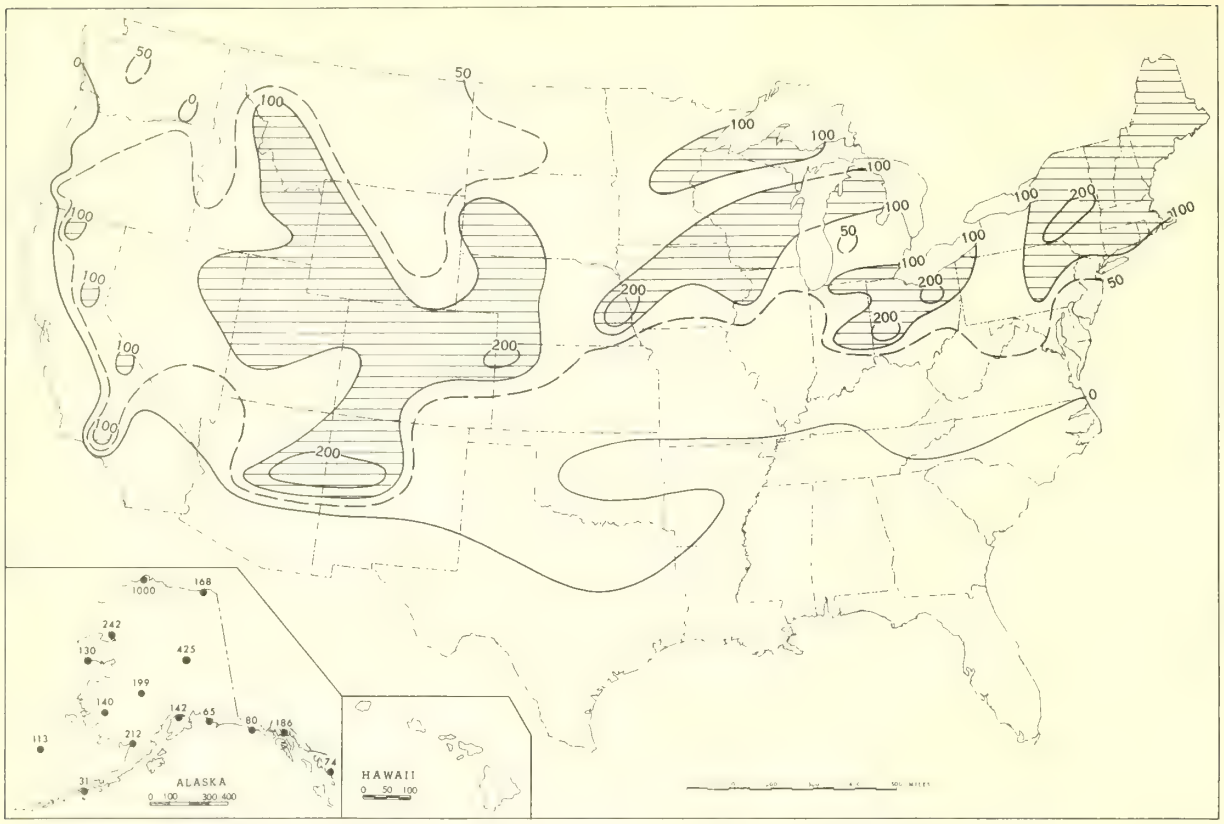
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), March 1963.

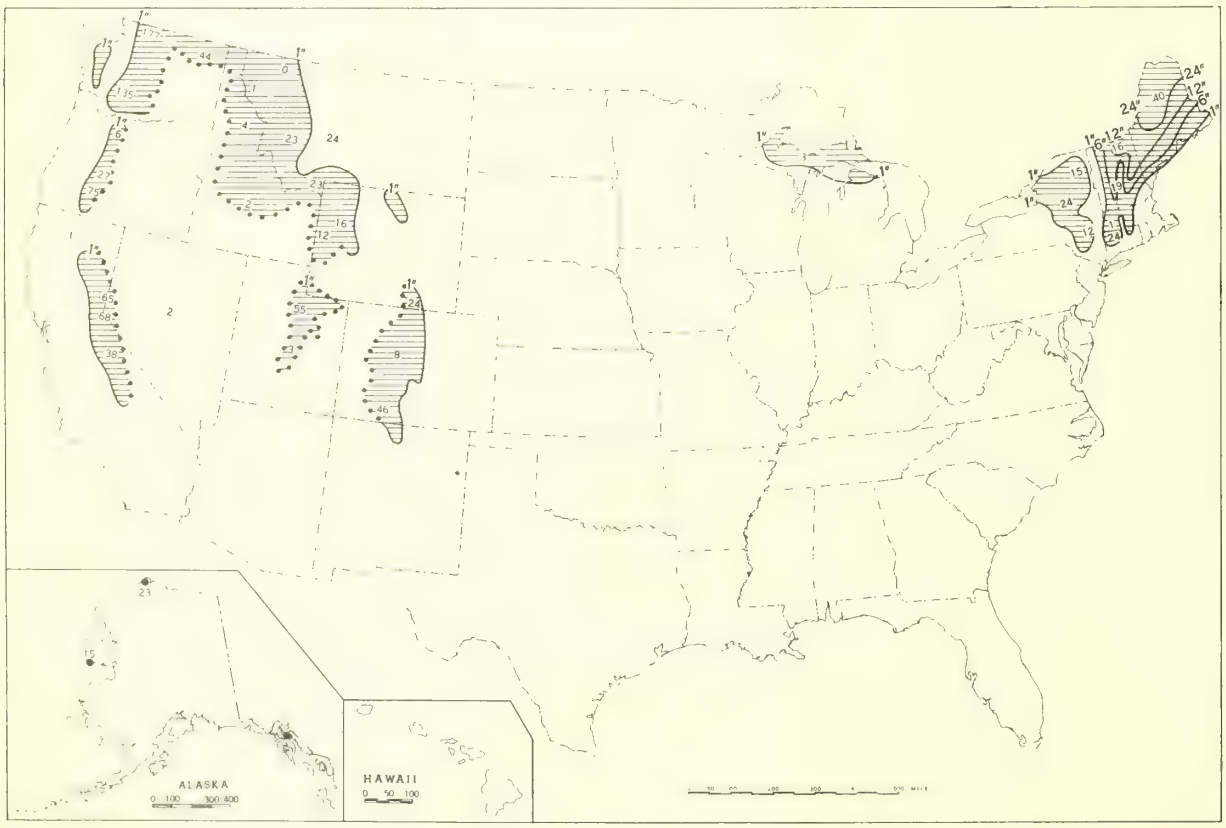


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, March 1963.

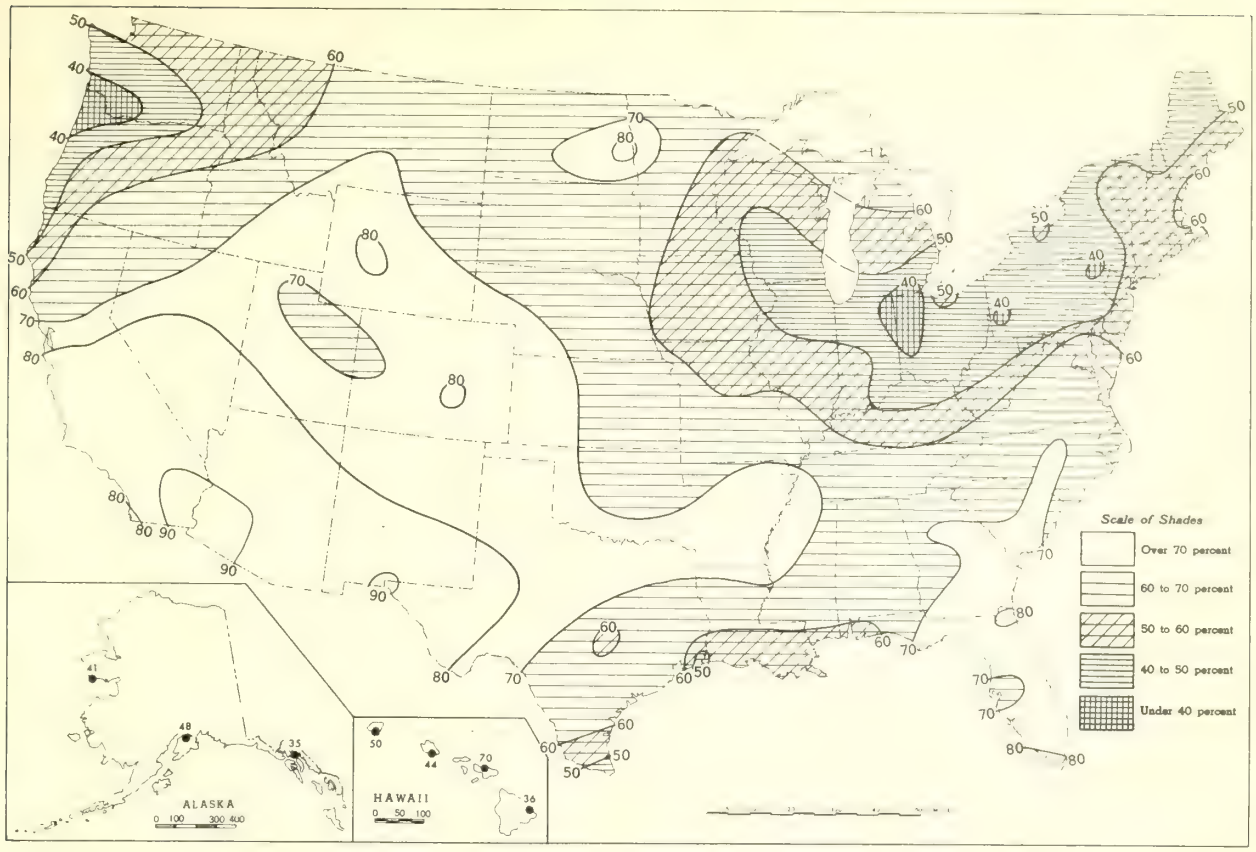


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., April 1, 1963.

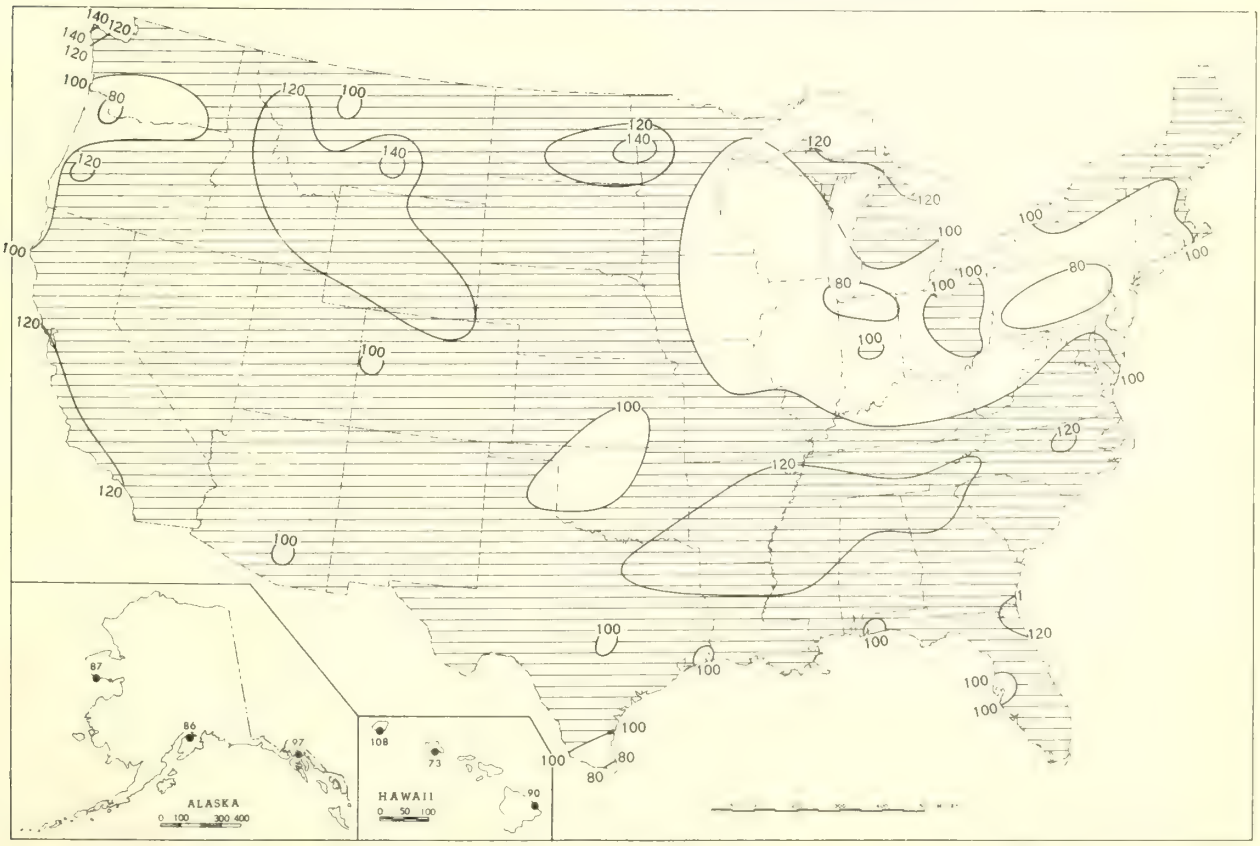


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, March 1963.

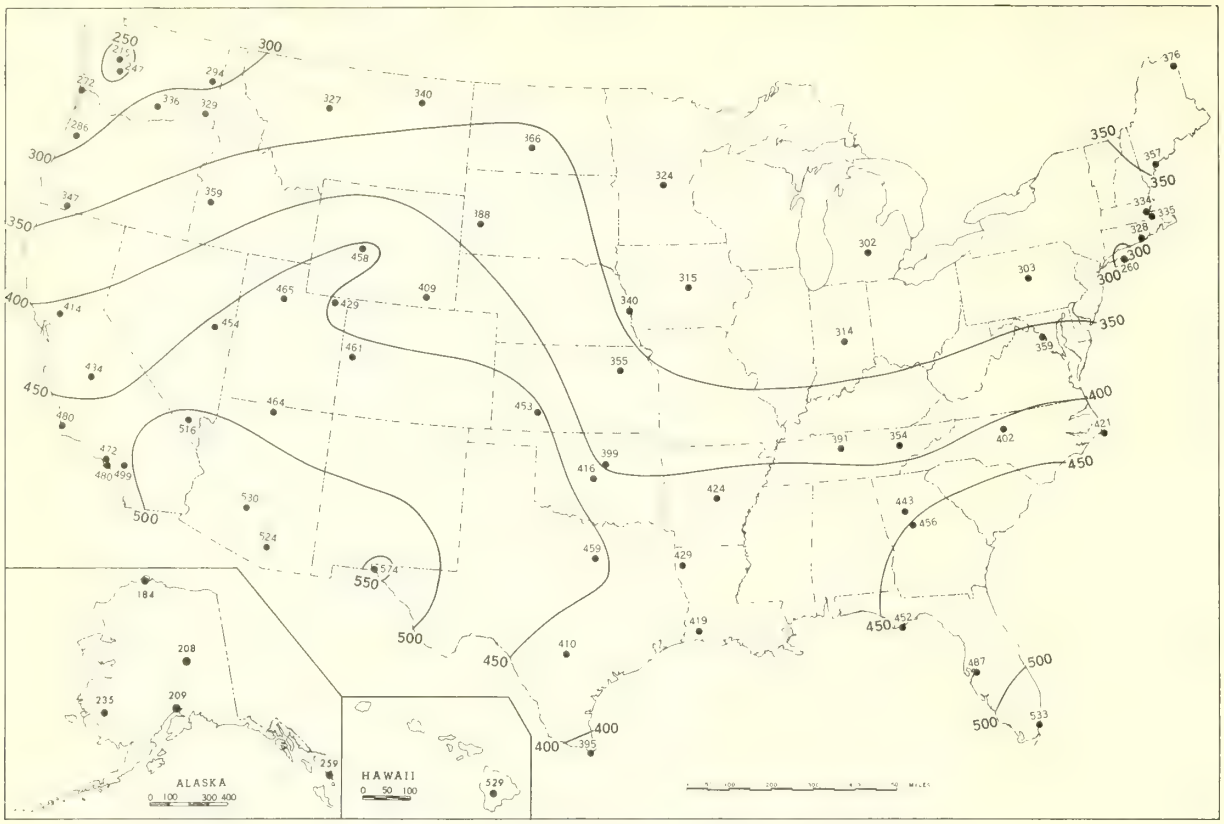


B. Percentage of Mean Monthly Sunshine, March 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, March 1963.

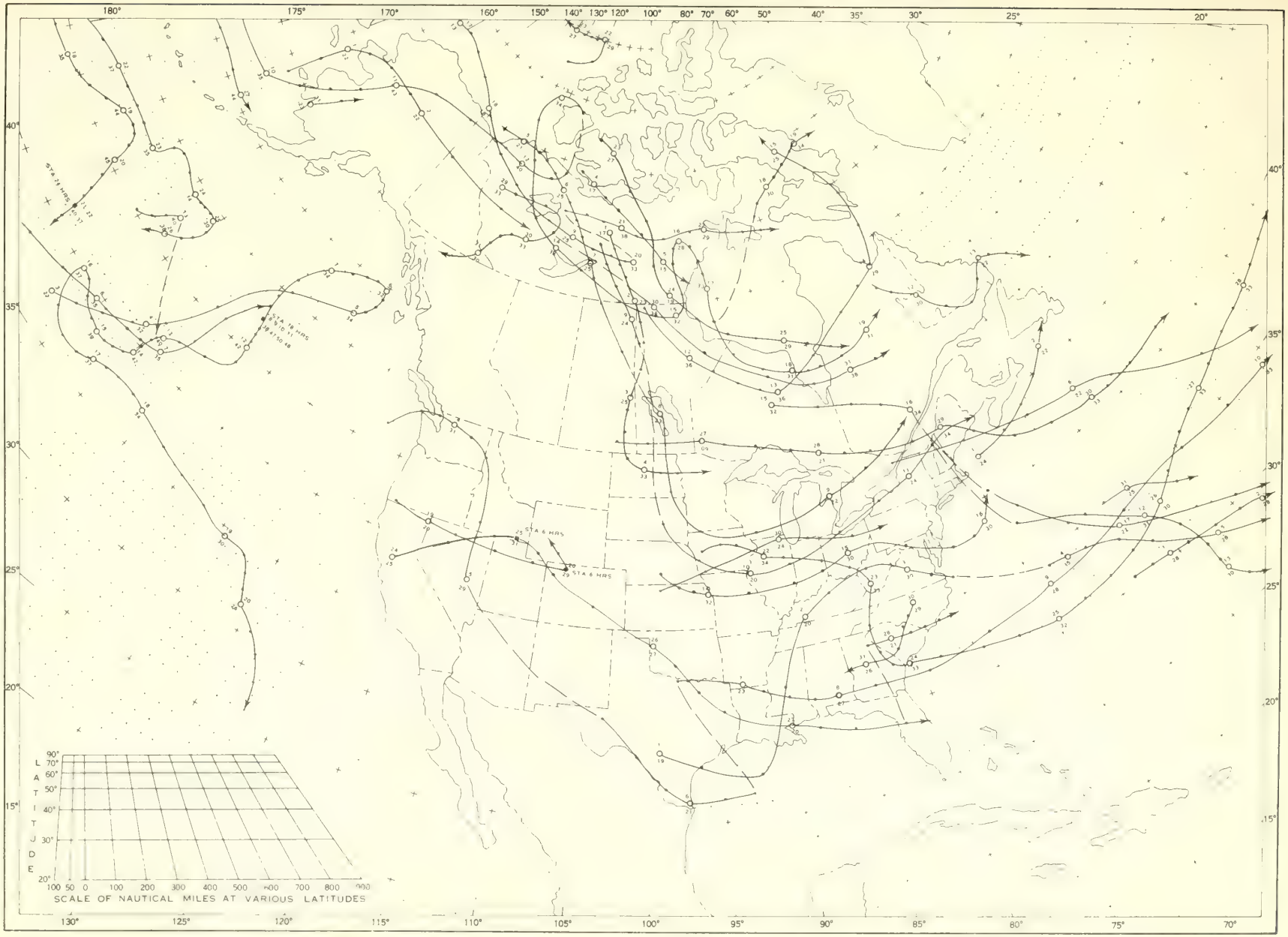


B. Percentage of Mean Daily Solar Radiation, March 1963.



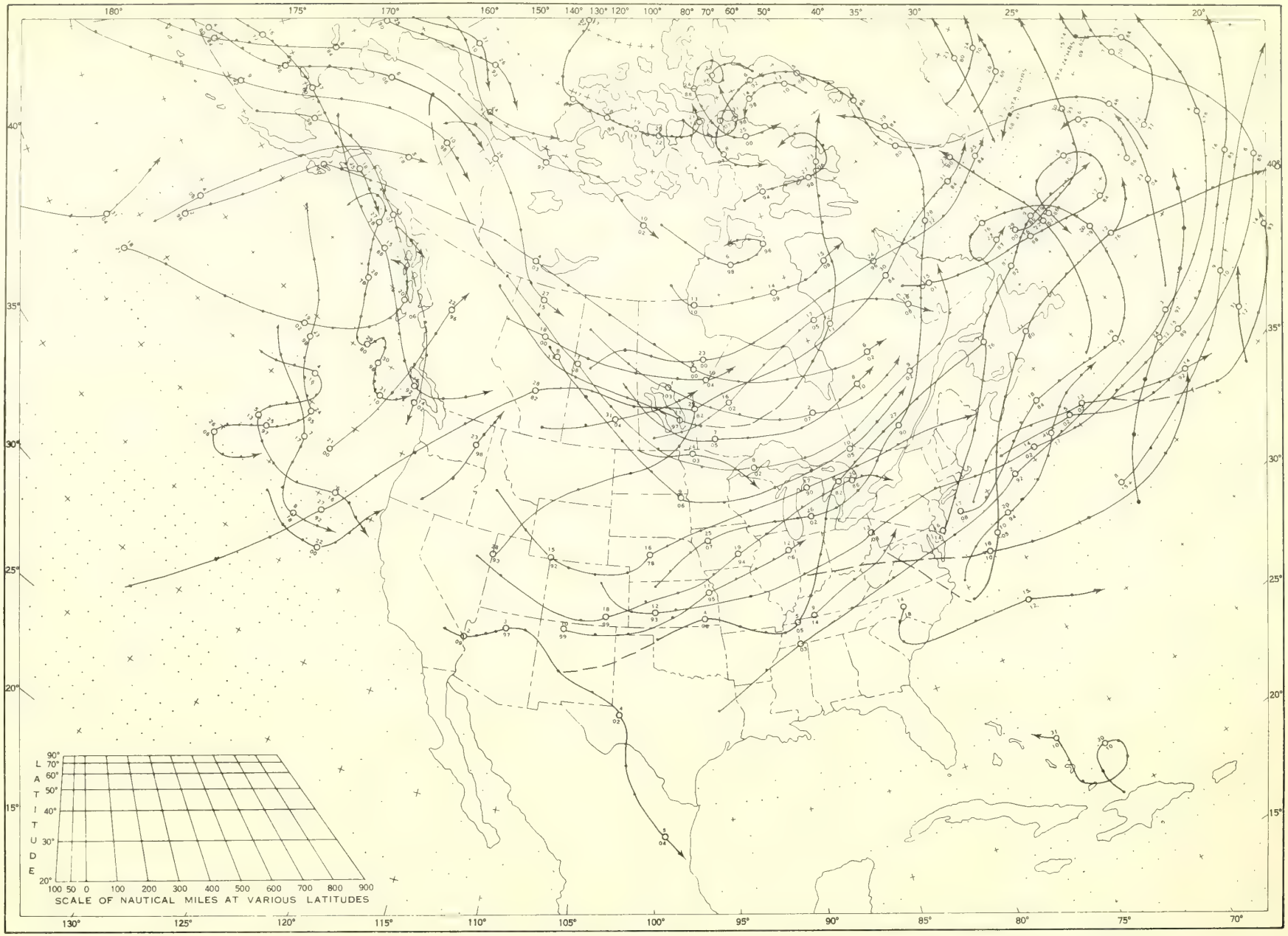
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, March 1963.



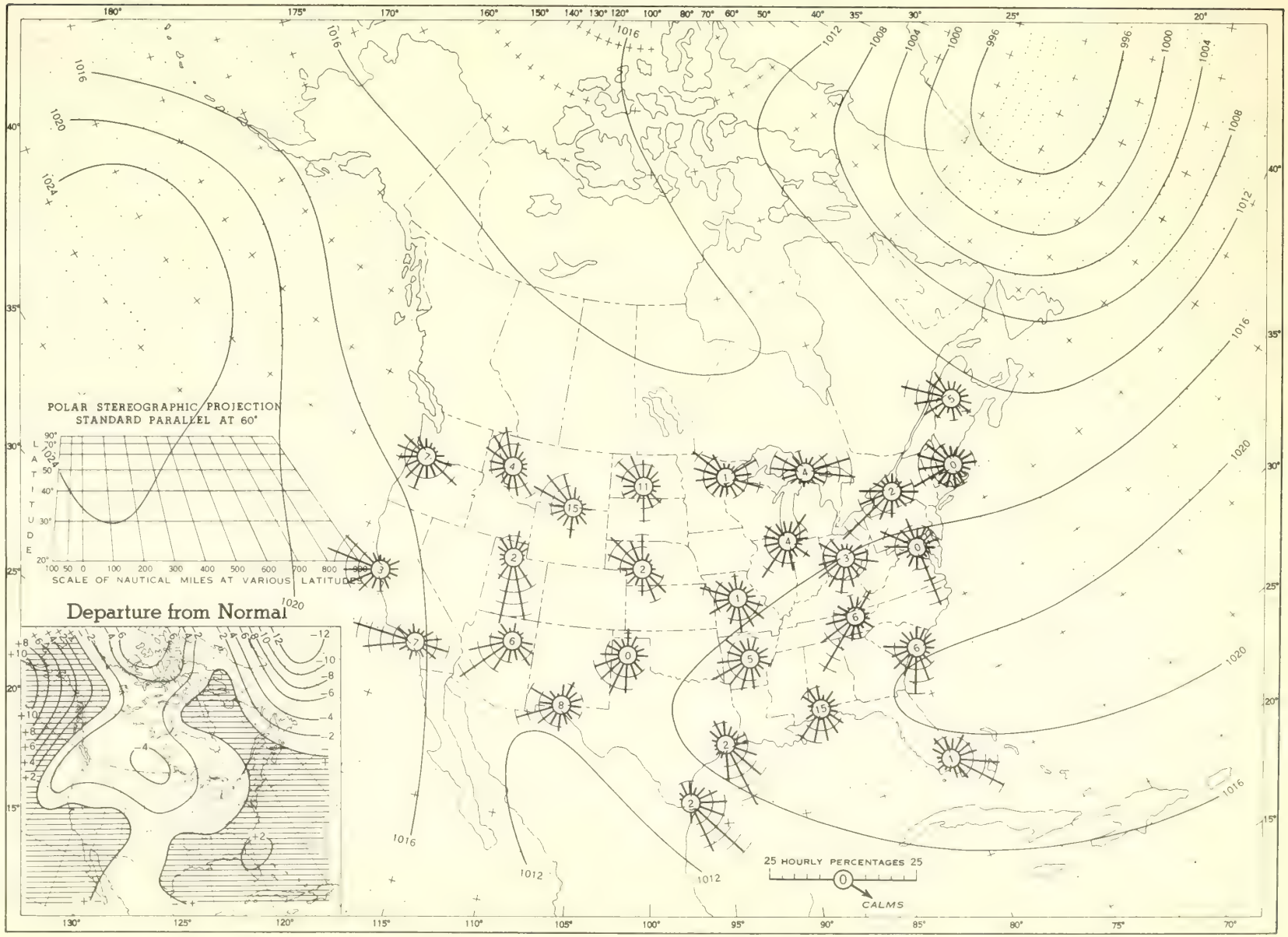
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, March 1963.



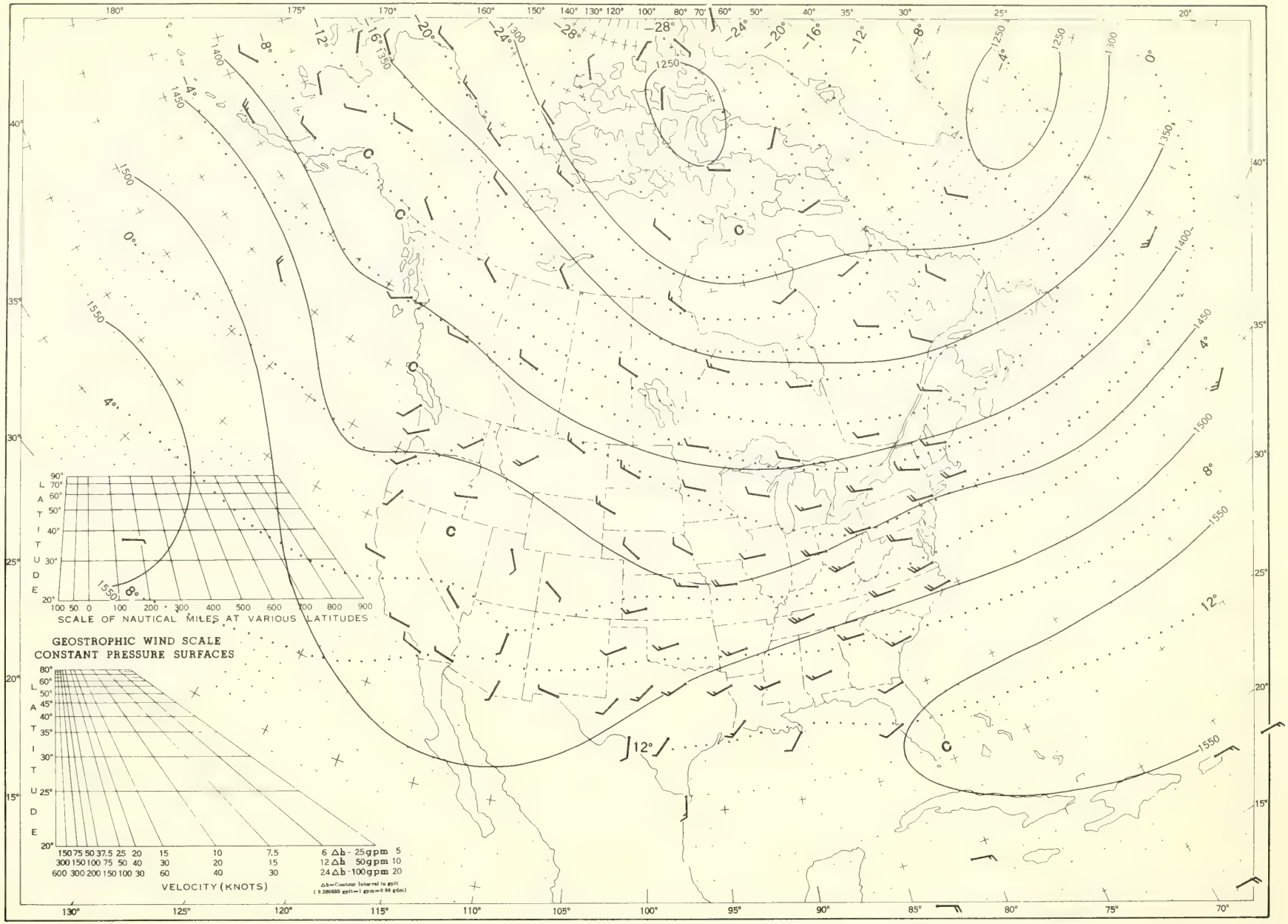
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, March 1963. Inset: Departure of Average Pressure (mb.) from Normal, March 1963.



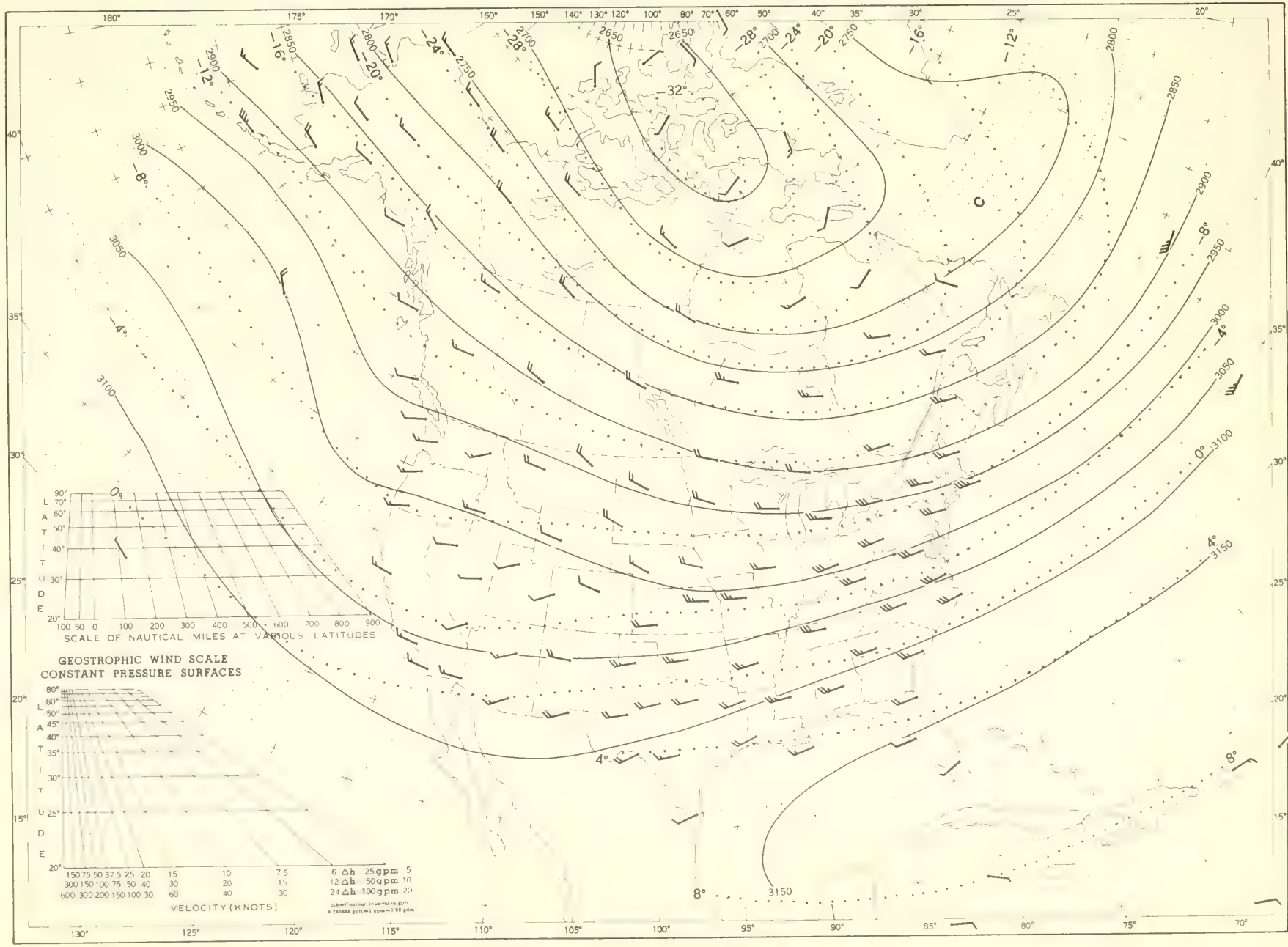
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.



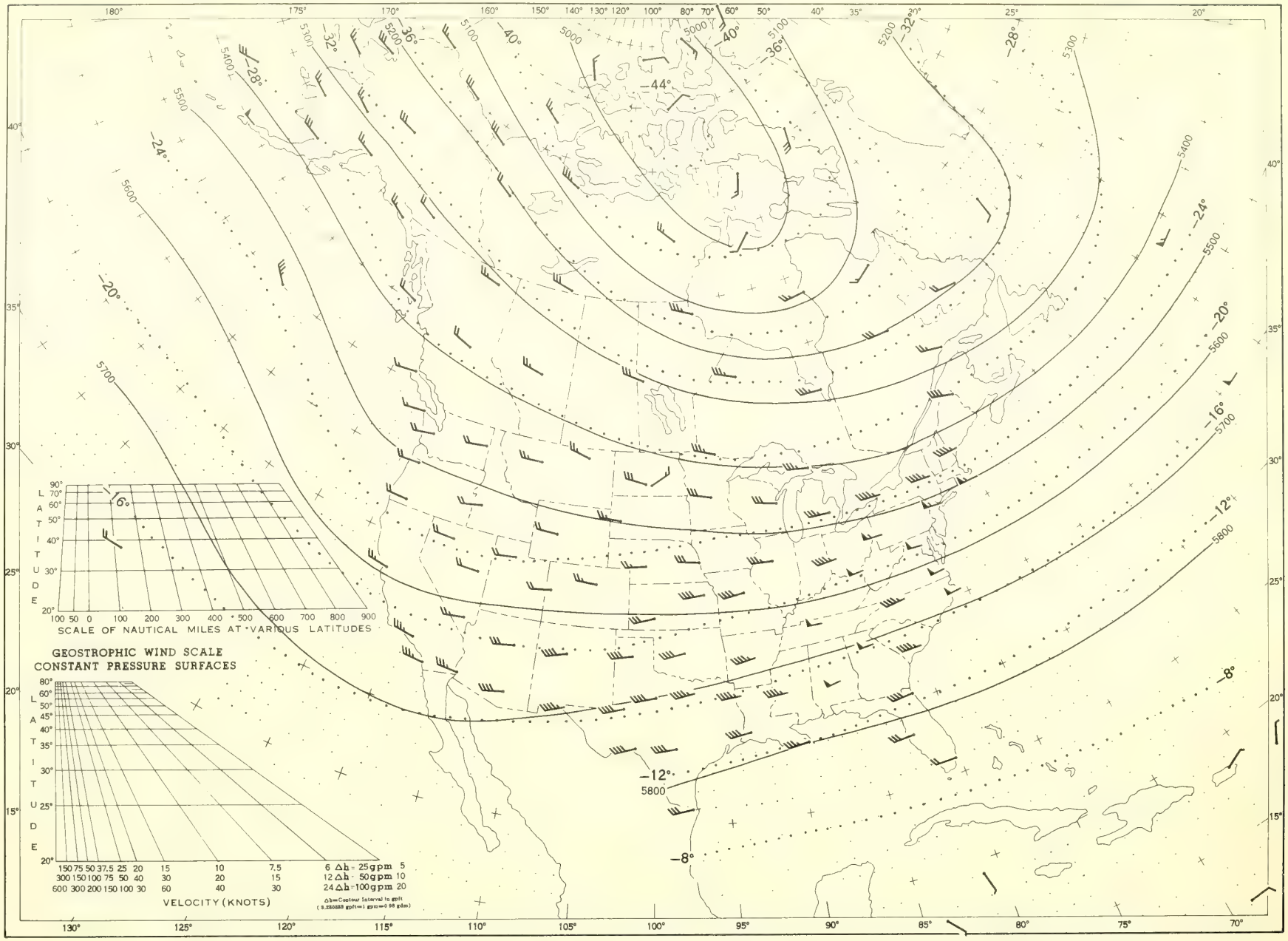
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.



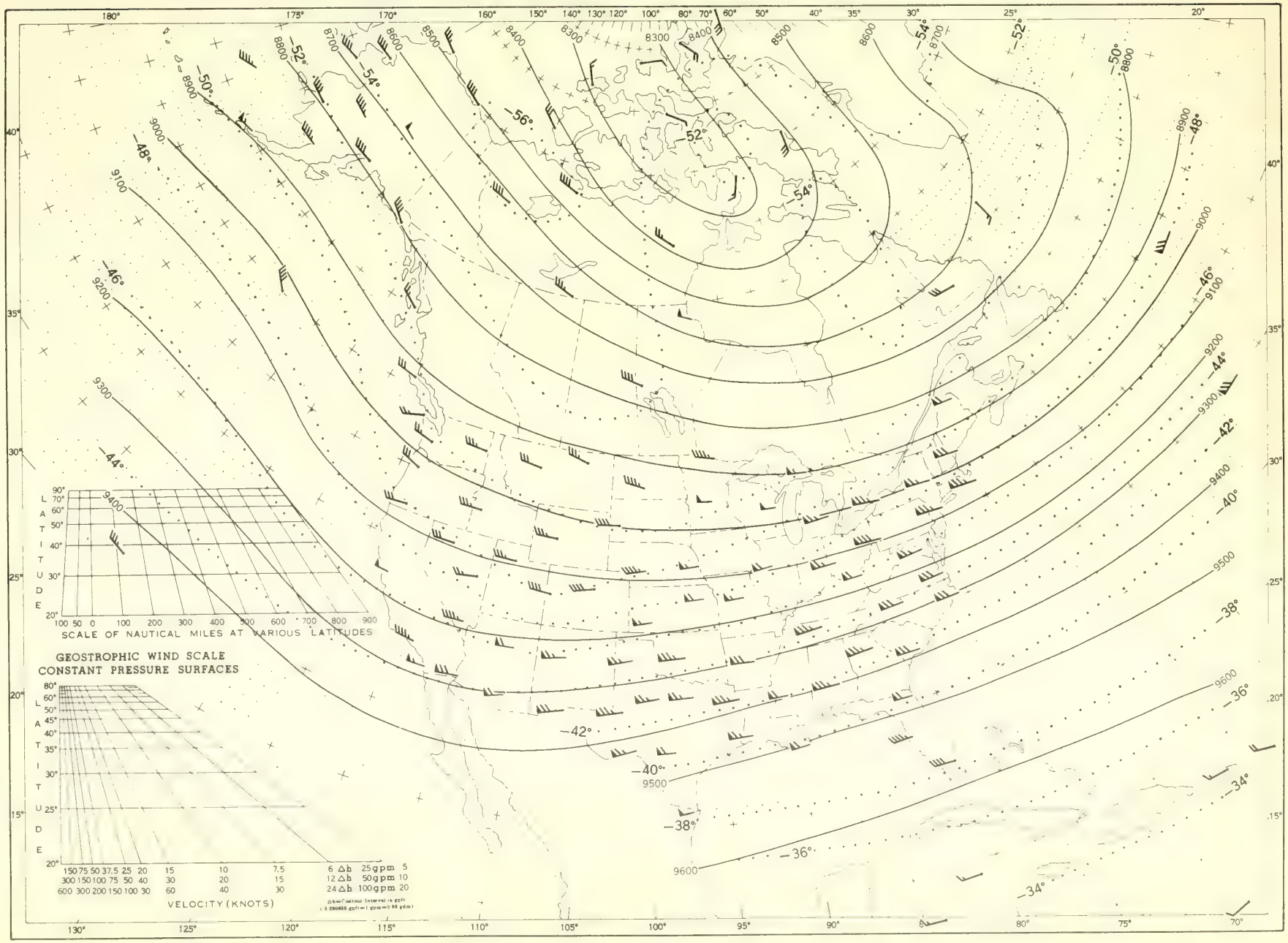
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.



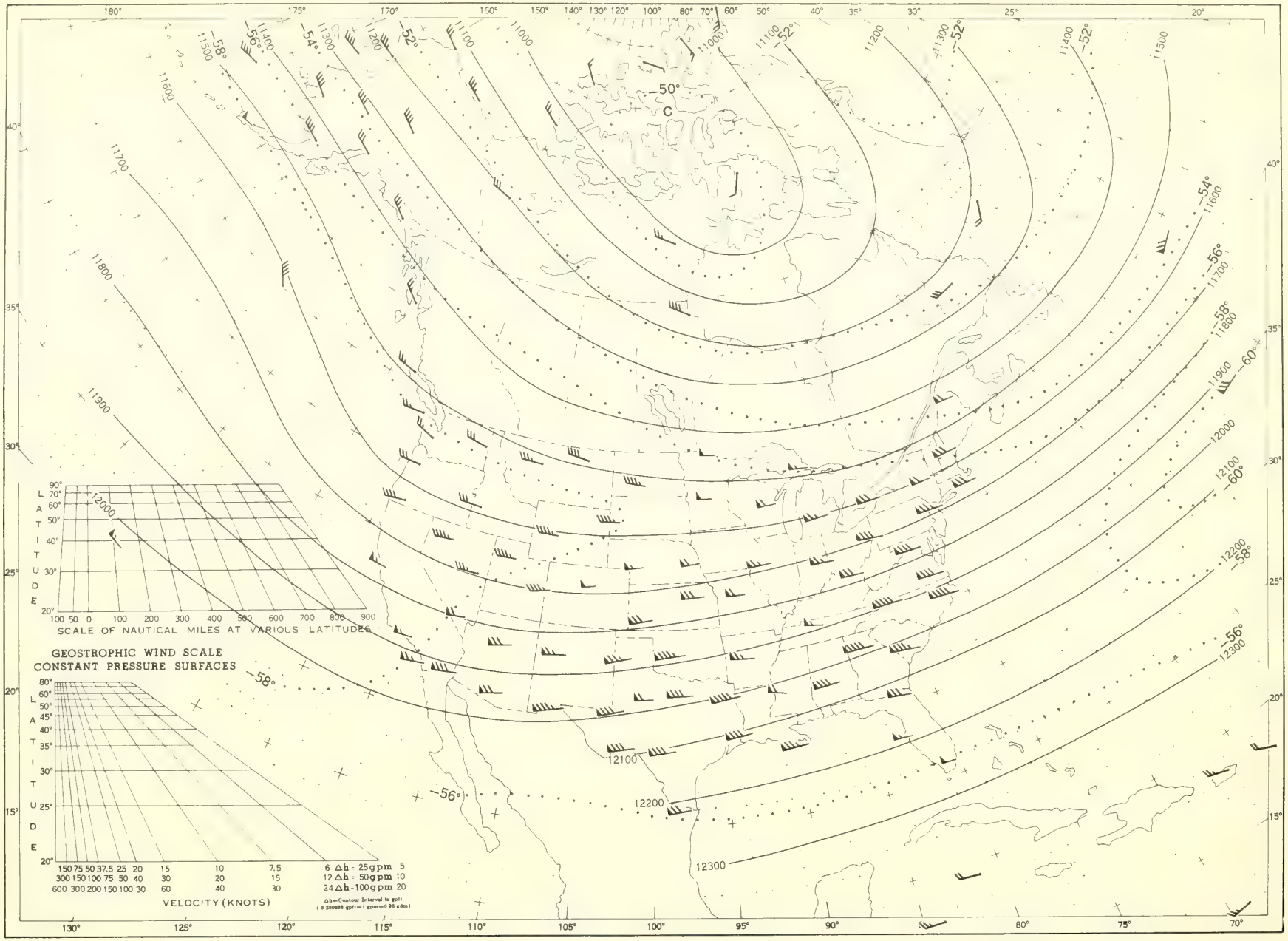
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.



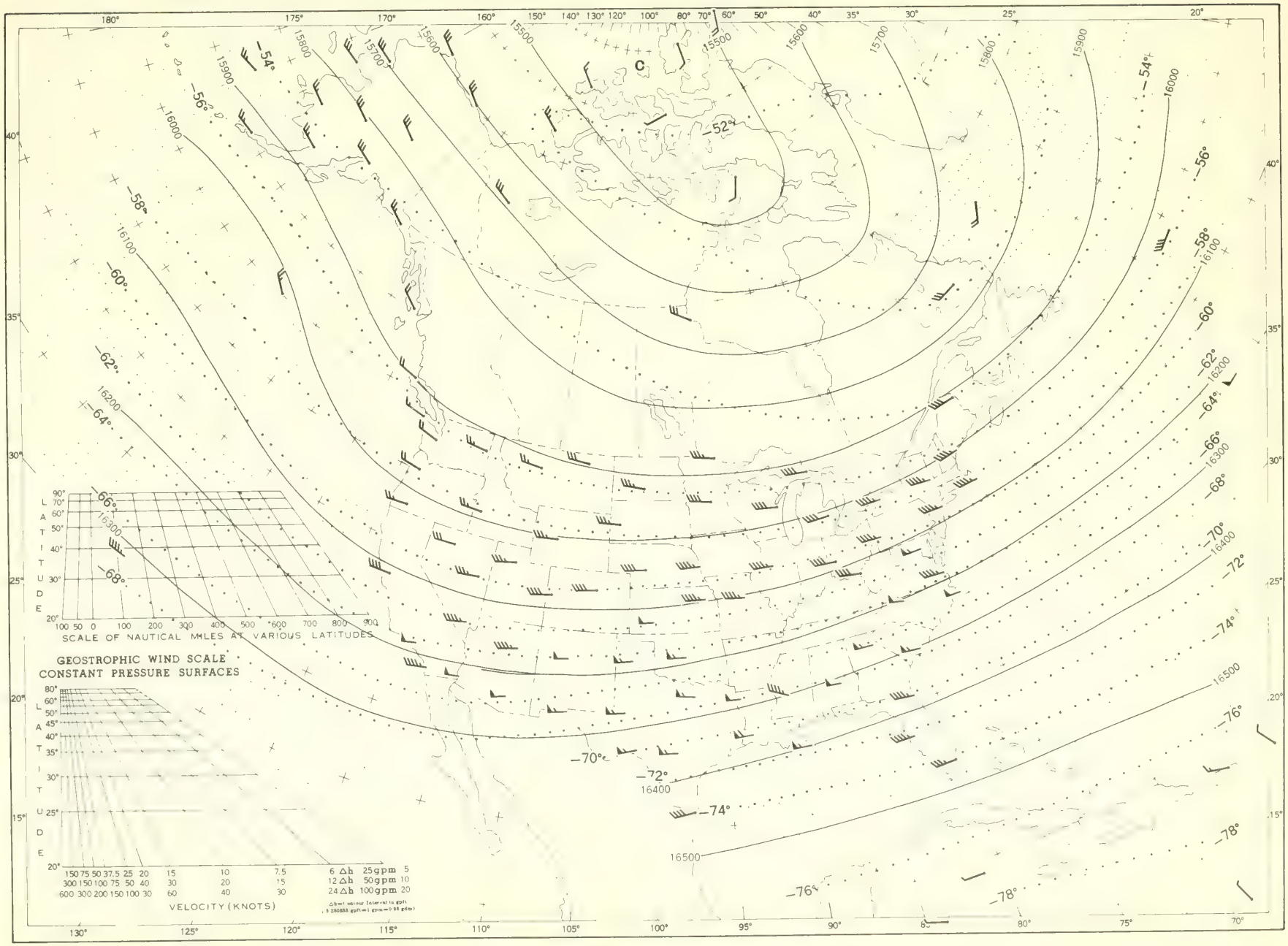
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.



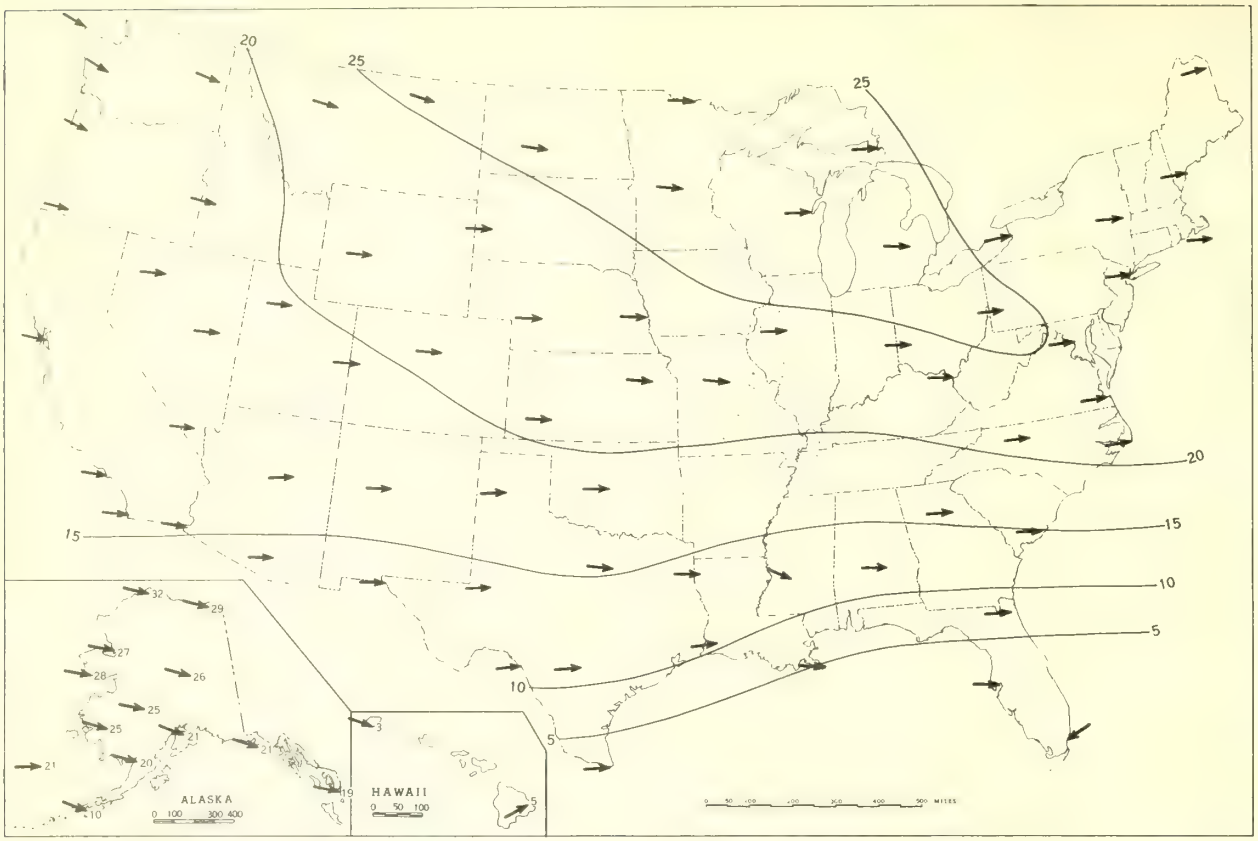
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, March 1963. Average Height and Temperature, and Resultant Winds.

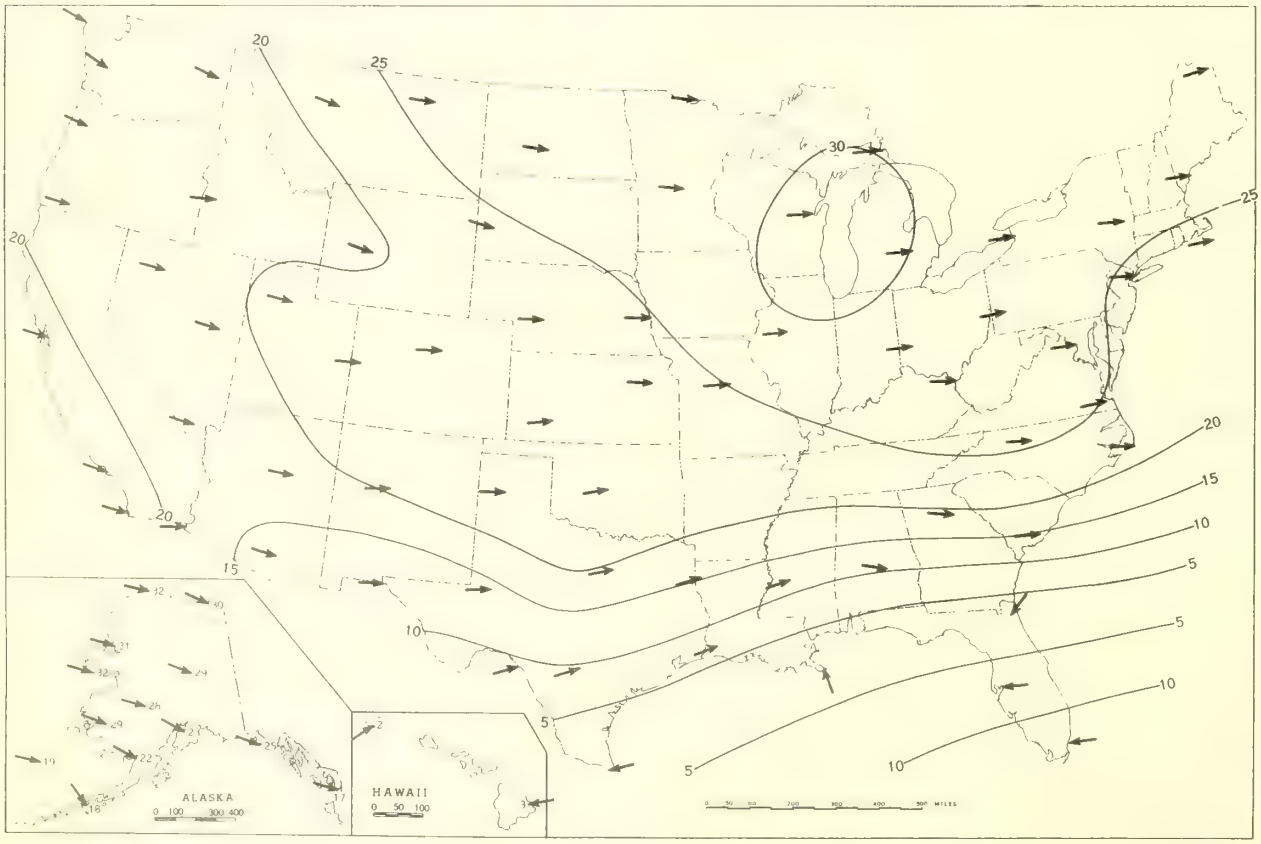


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, March 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, March 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM-WB-ASHEVILLE---6-24-63---1825

C 30.37: 14/4

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 4 APRIL 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

TEMPERATURE.--At the beginning of the month, slightly cooler-than-normal weather prevailed west of the Continental Divide and unusually warm weather east of the Divide. After a few days, cooler weather came to the mid-continent and pushed southward. Freezing temperatures occurred as far south as Oklahoma and Arkansas.

During the second week of April, it was dry and sunny east of the Divide. Strong winds blew over the Northern Prairie States and record-breaking high temperatures occurred in the South. Winter cloudiness and showers lingered in the Far West until the third week of April. Temperatures during that week at Ely, Nev., averaged 15° colder than normal, but the middle States were unseasonably hot. Tulsa, Okla., averaged 16° above normal during the third week of the month. Above normal temperatures continued over the South Atlantic and Gulf States and the Southern Plains States.

Numerous stations over the western third of the Nation called April 1963 the "coldest April of record." The following are characteristic. At Yakima, Wash., the cool wet weather prolonged the fruit bloom and hampered bee activity; Medford, Ore., reported that the cool moist weather caused a setback in agriculture; and at Mt. Shasta, Calif., it was the coolest April in 34 years and the third wettest since 1888. The cool wet weather hampered construction, agriculture, and logging. Red Bluff, Calif., said that the average temperature of 52.9° equaled the lowest in 67 years of record; and at Salt Lake City, Utah, it was the second coldest and wettest April of record.

Several mid-Country stations reported April 1963 among the warmest and driest Aprils of record. Topeka, Kans., reported the smallest amount of April precipitation in 86 years. Temperatures averaged above normal and there were long periods of strong winds and low humidity. Waco, Tex., said that 101° on the ninth was the highest temperature of record for so early in the season. Brownsville, Tex., reported the second warmest April of record and the driest since 1948. Amarillo, Tex., recorded the third warmest April since 1892.

PRECIPITATION.--Numerous storm systems brought widespread precipitation to large areas. The storm which lay over the Far West at the beginning of the month crossed the Northern Plains and Great Lakes region, and by the end of the first week of April had brought some high winds that caused scattered minor damage over large areas of the North, heavy snow in the Northern Rockies and the Northern Great Plains, and snow mixed with rain to the Northeast. Blizzards occurred in the Northern Plains. Up to 14 inches of snow fell in northeastern Wyoming.

Near the end of the first week of April, some areas in the South received soaking rains, and the Northwest Pacific States were receiving rains from a new storm in that area. As this storm crossed the Rockies, in the second week of April, it brought moderate to heavy showers over the northwestern Great Plains. Some northern sections of the Country, from the Pacific to Pennsylvania received moderate to heavy precipitation during the third week, while large areas along the south Atlantic and Gulf coasts, over the southern Great Plains, and the southern Rockies received no rain.

The Northern Rockies, the Great Plains, and much of the Mississippi River Valley received some rain in the final week of April, and light rains fell over some of the dry areas of the South.

Many western stations called April 1963 about the coldest and wettest April of record. In some cases it ranked second or third among the rainy Aprils. Precipitation exceeded the normals over the northern states and at a few stations in northern Georgia and nearby portions of adjoining States. Other areas of the Country complained that April was warm and dry, windy and dusty. Several Colorado stations registered less rain than any preceding April, and many stations throughout the South and East recorded April 1963 among the driest of record.

Many eastern locations complained of too little rain. At Boston, Mass., it was the driest April since 1927 and the fifth driest of record. There were many grass, brush, and forest fires in the area. At Albany, N. Y., it was the driest April since 1941. The low humidity and strong winds increased the severe fire hazard. It was the driest April of record at Burlington, Vt. From Lakeland, Fla., came the report that no April since records began in 1915 had been so dry. In the 112 years of record at Ft. Myers, Fla., only eight Aprils had been drier. It was the driest April of record at Tampa, Fla., and the second driest at West Palm Beach, Fla.

SNOWFALL.--Snow mixed with rain fell in connection with a storm moving across the northern States during the first week of April. Up to 14 inches fell in northeastern Wyoming and up to 11 inches in southeastern North Dakota.

Additional snow fell in Montana and North Dakota in the second week. Pipestone, Minn., received a foot of snow. A storm in New England dumped 15 inches of fresh snow at Greenville, Maine, and from 6 to 10 inches in surrounding areas.

Western Maryland received 4 inches of new snow in the third week of April. Light amounts fell from northeastern Nevada to central Wyoming. During the last week of April, Flagstaff, Ariz., received a 3-inch blanket of new snow, and a foot or more fell in the higher elevations near Elko, Nev. Central and eastern Minnesota received from 4 to 6 inches. Marquette, Mich., received less than one inch of snow, the least amount in 35 years except in 1955 when the April total was a trace.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	94	18+	Valley Head	27	15	Hightower	11.27	Pine Hill	0.70
Alaska	do	63	21+	Wainwright	-38	12	Little Port Walter	12.69	Wales AP	.07
Arizona	7 Stations	100	15+	Keams Canyon	3	22	Flagstaff WBAP	2.13	13 Stations	.00
Arkansas	2 Stations	94	21+	Gilbert	31	24+	Leola	7.14	Beech Grove	.70
California	3 Stations	99	30+	White Mountain 2	-15	2	Honeydew 2WSW	26.06	6 Stations	.00
Colorado	Lamar	93	15	Gunnison	-7	3	Steamboat Springs	3.08	31 Stations	.00
Connecticut	Bulls Bridge Dam	82	2	Coventry	16	1	Easton Lake Reservoir	3.36	Bulls Bridge Dam	.65
Delaware	Bridgeville 1NW	88	19	2 Stations	28	8+	Georgetown 5SW	2.01	Dover	.48
Florida	Avon Park	95	23	Fountain 3SSE	35	15	Milton Exp Station	3.43	4 Stations	.00
Georgia	Nashville 5SSE	94	22+	2 Stations	25	16+	Dawsonville	10.04	Waycross	.30
Hawaii	2 Stations	89	11+	Mauna Loa Slope Obs.	28	26+	Kahana 883, Oahu	59.20	Puako 95A, Hawaii	.84
Idaho	Slate Creek RS	85	14	Warren	-2	3	McCammon	5.05	Grand View 3WNW	.52
Illinois	Waterloo	92	22	Marengo	21	10	Wheaton College	5.68	Harrisburg Disposal Plant	.84
Indiana	Jeffersonville	88	21	2 Stations	20	10+	Crawfordsville Pwr. Pl.	6.37	Tell City Power Plant	.87
Iowa	Hawarden	86	1	3 Stations	17	4	Clarinda	6.96	Sioux Center 2NW	.60
Kansas	Aetna 2S	97	21+	Brewster	12	4	Parallel	4.53	2 Stations	.00
Kentucky	Pikeville	92	21	Cynthiana 2	21	16	Scottsville 3SSW	3.70	Jeremiah	.42
Louisiana	2 Stations	95	14+	2 Stations	36	7	Bodcau Fire Tower	9.11	Kinder 3W	T
Maine	Sanford 2NNW	73	30	Telos Dam	7	6	Rockland	3.48	Sanford 2NNW	1.53
Maryland	Waldorf Police Brks	92	20+	Oakland 1SE	18	6	Bittinger 2NW	3.23	Crisfield Hammock Point	.01
Massachusetts	Tauton	79	20+	Walpole	15	5	Westover Field	2.63	Beechwood	.45
Michigan	3 Stations	84	17+	Beechwood 7WNW	8	10	Holland	4.97	Manistique Water Works	.45
Minnesota	2 Stations	84	1	Warroad	5	5+	Willmar State Hospital	4.84	Worthington	.95
Mississippi	Merrill	95	12	Fulton 3W	33	15	Enid Dam	8.43	Pearlington 2NNE	.19
Missouri	Ozark Beach	95	22	Memphis	23	24	Milan	4.47	Oldfield	.30
Montana	Loma 1WNW	88	14	2 Stations	-3	3+	Yellowtail Dam	7.46	Del Bonita	.13
Nebraska	2 Stations	92	15+	Tryon	11	4	Rushville	4.16	Haigler	.12
Nevada	Sunrise Manor Las Vegas	9[illegible]	30	Ruth	-12	22	Mt. Rose Highway Sta	6.98	Pahrump	.00
New Hampshire	Portsmouth	75	20	First Conn Lake	9	6	Woodstock	4.61	Manchester	.78
New Jersey	2 Stations	88	4+	Layton 2	20	6	Woodcliff Lake	2.06	Elizabeth	.15
New Mexico	Bitter Lakes WL Refuge	96	8	Jewett Ranger Station	0	19	Carlsbad Caverns	2.66	29 Stations	.00
New York	Dansville	84	2	Tupper Lake Sunmount	2	5	Boonville 2SSW	4.71	Cairo	.17
North Carolina	Hamlet	99	22	Celo 2S	18	16	Andrews 2E	7.24	Kenansville 2SE	.64
North Dakota	7 Stations	82	15+	2 Stations	8	4+	Turtle Lake	4.90	Pembina	.95
Ohio	Ironton	82	2	Tom Jenkins Dam	17	11	Eaton	5.36	Gallipolis 5W	1.02
Oklahoma	Frederick	100	8	Jefferson	28	5	Farris 3WNW	7.40	Goodwell	.15
Oregon	Donner	82	28	Chemult	3	20	Brookings	17.43	Andrews 23ESE	.29
Pennsylvania	3 Stations	89	4+	Salina 3W	10	10	Rew	4.95	Geigertown	.25
Puerto Rico	San German	96	10	Cayey 1NW	52	25	Guineo Reservoir	18.52	Ensenada	.57
Rhode Island	2 Stations	78	20	Kingston	21	1	Kingston	2.17	Woonsocket	.69
South Carolina	do	95	24+	2 Stations	28	16+	Walhalla	8.33	Pinopolis Dam	.92
South Dakota	Wagner	93	1	Deerfield 5NW	5	4	Lead	6.81	Canton	.67
Tennessee	Samburg WL Refuge	91	22	Mountain City 2	19	16	Selmer	7.79	Bristol WBAP	1.38
Texas	Falcon Dam	113	10	2 Stations	30	19+	Mineola 7SSW	14.03	12 Stations	.00
Utah	St. George PH	87	30	Strawberry Hwy Sta	-5	23	Silver Lake Brighton	9.67	Monument Valley Mission	.03
Vermont	5 Stations	72	30+	Enosburg Falls	5	6	Enosburg Falls	5.06	Union Village Dam	1.23
Virginia	4 Stations	93	22+	Burkes Garden	18	16	Pennington Gap	2.27	Tangier Island	.00
Washington	Spokane	80	14	Bumping Lake	10	2	Wind River	12.15	Port Angeles	.86
West Virginia	Williamson	91	18	2 Stations	14	16+	Canaan Valley	3.78	Matoaka	.56
Wisconsin	Wisconsin Dells	83	2	Gordon 2ESE	9	18	Union Grove	3.98	Washington Island 1N	.84
Wyoming	Guernsey Dam No. 2	89	15	Gas Hills 4E	-7	2	Parkman 5WNW	7.05	Carpenter 3E	.28

\+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below			Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																	
BIRMINGHAM	610	991.4	1016.8	76	54	65.2	3.1	87	22	37	15	0	0	51	63	6.70	2.23	3.44	6	3	0.0	0	10.8	S	38	NW	29	7	11	12	6.0	59
HUNTSVILLE	605	993.3	1016.6	75	53	64.2	2.6	88	22	38	15+	0	0	47	58	9.05	5.06	4.26	10	1	0.0	0	11.0	SSW	32*	N	30+	9	10	11	5.8	
MOBILE	211	1013.9	1016.2	82	61	71.2	4.6	90	11	49	14	1	0	59	71	1.83	- 4.53	1.83	1	1	0.0	0	8.9	S	29*	SSW	29	7	10	13	6.2	
MONTGOMERY	195	1008.3	1016.6	79	55	67.1	3.0	88	22	39	15	0	0	55	67	1.36	- 3.53	0.55	8	4	0.0	0	8.7	S	35	SW	29	7	10	13	6.3	54
ALASKA												B																				
ANCHORAGE	90	1005.8	1010.6	40	24	31.9	- 3.8	52	27	9	18	0	26	21	69	1.78	1.36	0.54	11	0	27.6	12	6.2	W	23*	SE	8	6	7	17	7.2	51
ANNETTE	110	1006.8	1011.0	51	38	44.7	1.8	62	21+	29	18+	0	3	34	70	6.84	- 2.28	1.73	16	0	3.0	2	9.3	SE	29*	SSE	28	3	9	18	7.3	
BARROW	22	1014.2	1014.8	12	- 3	4.8	4.6	31	6	-23	12+	0	30	0	75	1.36	1.25	0.42	14	0	15.4	28	13.8	NE	31*	ESE	8	2	13	15	7.3	
BARTER ISLAND	39	1012.9	1014.6	15	- 2	6.4	5.5	32	8	-26	2	0	30	3	80	1.22	1.05	0.44	15	0	12.2	34	13.8	W	52*	W	1	7	5	18	7.0	
BETHEL	125	1012.2	1012.4	28	11	19.4	- 6.5	44	25	- 9	17	0	30	16	85	0.58	0.00	0.14	10	0	8.7	6	12.5	WNW	35*	S	7	6	10	14	6.6	
COLD BAY	94	1010.5	1014.4	38	28	32.9	- 0.4	47	24	17	16	0	23	28	83	1.66	0.20	0.66	11	0	3.8	1	15.3	NW	38*	SSE	21+	2	4	24	8.4	
CORDOVA	40	1008.8	1010.4	42	26	34.2	- 2.0	54	30	7	17	0	23	28	78	7.30	2.98	1.82	16	0	24.7	9	6.5	ESE	24*	E	27	7	5	18	7.2	
FAIRBANKS	436	994.9	1012.4	37	13	24.5	- 4.9	58	29	-16	17	0	28	15	66	0.49	0.24	0.21	6	0	5.8	30	5.5	SW	17*	SW	16+	4	7	19	7.4	
JUNEAU	17	1011.5	1011.7	46	27	36.6	- 1.4	56	26	6	5	0	22	28	72	3.85	0.98	1.54	13	0	46.3	33	7.3	ESE	38*	ESE	17	4	6	20	7.5	47
KING SALMON	43	1011.5	1011.6	35	18	26.2	- 6.6	49	29+	- 2	15	0	28	20	77	2.99	2.35	1.41	14	0	7.8	2	10.9	N	38*	SSE	11	8	3	19	7.0	
KOTZEBUE	10	1011.9	1012.3	22	6	13.8	0.6	40	29	-20	10	0	30	10	84	0.37	0.06	0.09	10	0	7.8	22	15.6	WNW	40*	S	8	5	4	21	7.7	
MC GRATH	334	1000.7	1012.0	34	13	23.6	- 4.0	50	27+	-15	11	0	29	14	65	0.67	0.20	0.27	11	0	18.1	25	6.9	WNW	22	SSW	21	6	5	19	7.4	
NOME	13	1011.5	1012.1	26	10	17.9	- 3.3	41	29+	-16	10	0	30	13	77	0.26	- 0.54	0.08	7	0	3.0	17	13.2	E	38*	E	7	6	9	15	6.9	38
ST. PAUL ISLAND	22	1012.5	1013.4	33	25	29.3	0.9	39	11+	16	16+	0	30	27	87	2.15	1.19	0.64	17	0	15.7	8	17.7	NW	45*	NE	24	0	4	26	9.2	
SHEMYA	122	1011.6	1015.5	39	32	35.4	- 0.1	43	25	25	6	0	12	31	77	1.18	- 0.88	0.27	17	0	4.5	T	21.5	WSW	46*	S	9	1	6	23	8.8	
YAKUTAT	28	1010.2	1011.1	43	27	35.1	- 1.9	52	6	9	3	0	19	30	80	8.51	1.28	2.44	15	0	12.4	10	5.8	ESE	29*	SE	13	6	4	20	7.2	
ARIZONA																																	
FLAGSTAFF	6993	787.7	1014.0	55	24	39.6	- 3.7	71	13	11	22	0	26	17	45	2.13	0.95	1.37	5	0	11.8	4	10.0	SSW	29*	SSW	21	11	9	10	5.4	
PHOENIX	1117	973.8	1012.8	82	50	65.8	- 2.9	99	13	41	18	6	0	27	24	0.33	0.01	0.33	1	0	0.0	0	7.5	W	28*	WNW	17	15	9	6	3.9	88
PRESCOTT	5014	845.1	1013.9	65	34	49.1	- 4.1	82	13	20	22	0	15	20	37	0.54	- 0.15	0.40	5	0	T	T	11.5	SW	43	SW	26	12	11	7	4.4	76
TUCSON	2584	924.7	1012.4	79	49	64.0	- 1.4	96	13	37	3	3	0	22	22	0.32	0.05	0.32	1	0	0.0	0	9.9	SSE	34	SW	17+	15	11	4	3.8	87
WINSLOW	4880	849.7	1013.8	70	34	51.9	- 4.2	86	13	19	3	0	14	17	29	0.30	- 0.15	0.30	1	0	0.0	0	13.2	SW	46*	SW	16	16	8	6	4.1	
YUMA	199	1008.3	1013.7	83	53	68.3	- 4.6	98	30	44	2	8	0	27	26	T	- 0.09	T	0	0	0.0	0	6.9	WNW	29	SE	25	19	6	5	3.3	90
ARKANSAS																																	
FORT SMITH	449	997.4	1014.3	76	52	64.3	2.6	90	22	40	13+	1	0	51	64	3.37	- 0.87	1.23	10	6	0.0	0	9.1	ENE	38	W	28	7	6	17	6.8	49
LITTLE ROCK	257	1002.2	1015.4	75	54	64.3	1.9	87	22	40	7	0	0	51	65	3.29	- 1.64	1.11	9	6	0.0	0	9.6	ENE	35	E	28	6	6	18	6.9	57
TEXARKANA	361		1014.7	77	57	66.9	3.0	88	22	43	7	0	0	57	75	6.22	0.92	2.62	10	6	0.0	0	10.5	S								84
CALIFORNIA																																	
BAKERSFIELD	494	1000.3	1016.8	68	47	57.4	- 5.6	79	30+	37	2	0	0	41	60	0.85	0.04	0.29	11	0	0.0	0	8.1	NW	26*	WNW	14	6	16	8	5.7	
BISHOP	4108	870.8		65	32	48.3	- 6.8	82	30	22	22	0	16			0.33	- 0.13	0.25	4	0	T	T						13	10	7	4.4	
BLUE CANYON	5280	836.8		41	30	35.2	- 9.9	58	28	20	17+	0	20			14.20	9.38	2.73	21	0	55.4	37	10.2	SSW	50	SSW	6	3	4	23	8.3	
BURBANK	699	990.9	1016.8	67	47	57.1	- 4.1	82	29	41	21	0	0	41	60	1.51	0.30	0.68	8	1	0.0	0	7.1	S	20*	WNW	17+	12	9	9	4.7	
EUREKA U	43	1014.9		56	44	50.1	- 0.3	63	3	38	20+	0	0			10.68	8.01	2.56	23	0	0.0	0	8.8	SE#	35	SW	6	2	6	22	8.2	55
FRESNO	326	1005.2	1017.1	67	45	55.9	- 4.9	80	30	34	2	0	0	43	67	3.66	2.53	0.95	12	0	0.0	0	7.0	NW	29	W	20	8	10	12	5.9	74
LONG BEACH	34	1016.3	1017.6	68	48	57.7	- 2.1	81	29	39	2	0	0	46	66	1.13	0.36	0.66	8	1	0.0	0	7.8	W	44*	WNW	1	15	8	7	4.5	
LOS ANGELES	97	1013.9	1017.6	65	50	57.3	- 0.6	74	5	44	21+	0	0	47	71	1.41	0.36	0.74	6	0	0.0	0	9.7	W	32*	W	1	14	7	9	4.6	
LOS ANGELES U	312			68	51	59.6	- 2.2	80	29	45	2	0	0			1.94	0.77	0.79	8	1	0.0	0	7.0	W#	30	W	17+	14	10	6	4.5	75
MT SHASTA R	3544	890.3		49	31	40.1	- 7.4	69	28	16	16	0	19			7.82	5.05	2.72	19	1	17.3	9						3	11	16	7.4	
OAKLAND	3	1017.7	1018.0	61	47	54.1	- 2.5	67	29+	38	21+	0	0	43	68	4.60	3.22	1.18	14	2	0.0	0	11.4	W	29*	SSE	18+	7	11	12	6.3	
POINT ARGUELLO	367	1004.4		60	44	51.8	- 1.9	68	13	38	23+	0	0			2.52	1.58	0.78	15	0	0.0	0	8.7		24*	NW	4	10	10	10	5.4	
RED BLUFF	341	1003.1	1016.0	63	43	52.9	- 7.5	76	30+	33	1	0	0	40	66	4.91	3.08	1.20	15	3	0.0	0	11.4	SSE	33	SE	14+	6	8	16	7.0	58
SACRAMENTO	17	1016.6	1017.5	63	44	53.6	- 6.3	74	29	34	21	0	0	46	79	3.54	2.14	1.36	13	2	0.0	0	7.1	SW	34	W	14	5	10	15	6.9	63
SACRAMENTO U	23			63	46	54.4	- 5.9	76	29	36	21	0	0			3.43	1.81	1.36	14		0.0	0										
SANDBERG R	4517	861.8		50	34	42.2	- 8.6	70	29	24	21	0	16			1.00	0.03	0.45	9	0	7.0	4	14.1	N	39*	NNW	26	8	13	9	5.4	
SAN DIEGO	13	1014.2	1017.5	67	51	58.7	- 2.3	74	4	45	22	0	0	47	66	0.71	- 0.08	0.25	7	0	0.0	0	9.4	WNW	31	W	1	10	15	5	4.4	79
SAN FRANCISCO	8	1017.8	1018.5	59	47	53.0	- 2.7	67	12	39	2	0	0	45	76	3.70	2.40	0.91	16	2	0.0	0	11.9	W	41	SSE	14	5	14	11	6.4	
SAN FRANCISCO U	52			59	50	54.4	- 1.3	67	12	42	20	0	0			3.35	1.91	0.95	15	1	0.0	0	9.5	W#	27	W	17					69
SANTA CATALINA		960.8		61	48	54.4		75	29	41	17	0	0			0.75		0.30	7	0	0.0	0						13	12	5	4.2	
SANTA MARIA	238	1009.9	1018.8	63	42	52.6	- 3.0	74	29+	33	2	0	0	45	77	2.57	1.38	0.88	12	0	0.0	0	9.9	WNW	31*	NW	27	11	9	10	5.0	
STOCKTON	28	1016.1	1017.7	63	43	53.4		75	29	33	2	0	0	45	76	3.12		1.01	15	2	0.0	0	7.8	W	28*	SSE	10	6	9	15	6.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
COLORADO	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALAMOSA	7536	768.0		59	25	42.3	0.6	70	14+	7	3	0	25			0.13	- 0.56	0.12	2	0	2.3	T						12	10	8	5.0	
COLORADO SPRINGS	6173	807.4	1010.8	66	36	51.0	5.9	78	8	26	23	0	9	17	29	0.02	- 1.29	0.02	1	0	T	T	12.2	N	48*	SW	15	10	12	8	5.0	
DENVER	5283	833.1	1009.2	66	34	50.0	2.6	83	14	27	23	0	12	20	36	0.03	- 2.08	0.02	2	1	0.2	T	12.2	S	47	SW	15	9	14	7	5.3	78
GRAND JUNCTION	4849	855.7	1010.8	64	38	51.1	- 1.2	80	14	24	3	0	7	16	29	0.12	- 0.63	0.07	4	0	0.2	T	8.0	SE	43	SW	21	6	7	17	7.0	49
PUEBLO	4639	851.5	1008.7	72	39	55.5	4.8	85	8	27	23	0	4	20	28	T	- 1.18	T	0	0	0.0	0	13.1	WSW	64	SW	15	13	9	8	4.6	85
CONNECTICUT																																
BRIDGEPORT	7	1012.0	1012.8	58	39	48.7	0.7	78	18	31	6	0	2	32	57	0.84	- 2.96	0.49	6	1	T	T	15.6	NNW	46*	WNW	4	8	10	12	5.7	
HARTFORD	169	1005.4	1011.3	61	36	48.3	0.6	77	20+	27	1	0	13	30	55	1.57	- 2.16	0.82	7	1	T	T	10.0	NW	41	NW	4	7	13	10	6.0	71
NEW HAVEN	6	1011.9		58	38	48.3	1.4	77	18	30	1	0	5			2.03	- 1.86	1.66	6	1	T	T	10.0		47	NW	4	8	12	10	5.6	68
DELAWARE																																
WILMINGTON	78	1010.1	1013.5	64	41	52.6	0.5	86	3	29	8	0	2	34	53	1.12	- 2.21	0.81	7	3	0.0	0	11.4	WNW	45*	WNW	4	7	10	13	5.8	
DIST.OF COLUMBIA																																
WASHINGTON U				69	48	58.2	3.5	90	19+	37	10	2	0			1.22	- 1.98	0.45	8													
WASH NATL AP		1010.0	1014.5	69	47	57.8	2.1	89	2	38	10+	0	0	34	45	0.99	- 2.16	0.34	6	3	0.0	0	9.9	NW	52	NW	23	11	11	8	5.3	69
FLORIDA																																
APALACHICOLA U	13	1015.1		77	64	70.2	2.7	83	12	51	15	0	0			0.49	- 3.81	0.32	3	2	0.0	0	8.7		29	SE	27	15	7	8	4.2	86
DAYTONA BEACH	31	1015.9	1017.7	82	61	71.6	2.7	92	23+	44	16	4	0	58	65	1.40	- 1.57	0.96	3	3	0.0	0	9.8	WSW	23*	SE	29+	14	11	5	4.3	
FORT MYERS	13	1016.4		85	61	73.0	0.2	92	24	48	16	3	0			0.27	- 2.37	0.27	1	1	0.0	0	7.6		21*	WNW	14+	18	12	0	2.9	
JACKSONVILLE	24	1016.3	1017.7	82	60	71.2	2.5	91	23	45	15	3	0	57	66	1.75	- 1.80	1.01	5	1	0.0	0	9.7	SW	40	NE	5	12	10	8	4.8	85
KEY WEST	5	1015.4	1016.7	82	72	76.8	1.0	87	12	64	16	0	0	64	67	0.23	- 2.25	0.12	3	0	0.0	0	12.5	ESE	27	NE	1	20	10	0	2.9	86
LAKELAND U	214			83	63	72.8	1.3	89	19	54	16+	0	0			0.05	- 3.46	0.04	2	1	0.0	0	8.1					11	15	4	3.9	78
MIAMI BEACH	9			82	70	75.9	1.0	91	13	59	15	1	0			0.11	- 2.81	0.11	1	0	0.0	0	14.7		30	NE	1	20	8	2	3.0	83
MIAMI	7	1015.6	1017.0	83	67	74.7	0.5	92	12	51	15	2	0	62	68	0.33	- 3.55	0.21	3	1	0.0	0	11.8	SE	29*	NE	1	15	11	4	3.9	
ORLANDO	106	1012.7	1017.4	85	62	73.6	3.4	92	22+	51	15	7	0	58	65	1.23	- 2.19	1.06	2	3	0.0	0	10.2	WNW	21*	NNW	30+	14	15	1	3.8	
PENSACOLA U	13			77	64	70.6	3.5	85	23	54	14+	0	0			2.23	- 3.34	1.41	4	3	0.0	0	9.8	SSE	24	SW	6					78
TALLAHASSEE	58	1014.6	1017.4	82	56	68.6	1.1	90	23	39	16+	1	0	57	69	1.68	- 2.96	0.95	2	2	0.0	0	10.3	S	29*	S	6	10	8	12	5.2	
TAMPA	19	1016.1	1017.7	82	62	72.3	0.9	89	26	50	16	0	0	59	68	0.21	- 2.63	0.21	2	2	0.0	0	12.8	E	29*	WNW	7	13	17	0	3.8	74
WEST PALM BEACH	15	1016.4	1017.5	83	65	74.1	0.2	92	12	51	15	3	0	62	67	0.20	- 4.14	0.20	2	2	0.0	0	11.2	ENE	29*	ENE	1	12	14	4	4.3	
GEORGIA																																
ATHENS	803	988.0	1017.1	76	52	63.5	2.4	87	21	38	16	0	0	48	62	7.90	3.51	3.61	9	5	0.0	0	8.5	WSW	21*	NNW	13+	6	14	10	5.9	
ATLANTA	1005	974.8	1016.7	73	52	62.9	1.9	82	22+	39	15+	0	0	47	61	5.85	1.38	3.15	6	4	0.0	0	7.8	NW	30*	NE	29	7	14	9	5.7	71
AUGUSTA	143	1009.3	1016.2	78	53	65.2	2.0	90	21	35	16	1	0	50	64	3.90	0.34	1.59	8	1	0.0	0	8.9	SW	25*	WNW	4	6	14	10	6.0	
COLUMBUS	385	1002.3		78	53	65.7	2.0	86	22	38	15	0	0			2.53	- 2.06	1.16	7	4	0.0	0	9.2		30*	ENE	6	9	7	14	6.1	
MACON	356	1003.1	1016.8	79	55	67.2	1.6	88	22+	39	15	0	0	50	61	4.23	0.48	2.28	6	1	0.0	0	8.5	SW	25	N	13	10	10	10	5.5	62
ROME	637	993.9		75	48	61.6	1.8	86	22	30	15	0	1			7.97	3.38	4.57	9	4	0.0	0						8	12	10	5.6	
SAVANNAH	48	1014.7	1017.4	78	56	66.9	1.2	91	4	40	15	2	0	55	70	4.55	0.85	2.25	7	3	0.0	0	10.5	WSW	40	N	12	11	11	8	5.4	72
THOMASVILLE U	283			81	59	69.7	1.9	89	22	46	15	0	0			1.21	- 3.43	1.21	1	1	0.0	0						12	5	13	5.3	
HAWAII																																
HILO	31	1015.9	1016.6	81	66	73.6	2.0	89	2	63	26+	0	0	66	79	31.94	20.02	8.94	20	0	0.0	0	10.2	SW	43*	SW	2	0	9	21	8.4	37
HONOLULU	7	1015.9	1016.3	81	70	75.3	1.1	84	30	66	11+	0	0	65	74	8.92	7.61	2.75	17	0	0.0	0	10.0	ENE	28	NE	23	3	8	19	7.7	53
KAHULUI	44	1013.2	1016.0	83	68	75.2		86	18+	64	30+	0	0	66	75	1.30		0.73	13	1	0.0	0	17.7	ENE	43*	ENE	25	3	10	17	7.4	65
LIHUE	115	1011.9	1017.2	81	69	74.6	2.1	85	8	62	3	0	0	67	79	8.84	5.50	2.59	18	0	0.0	0	12.1	NE	42	E	15	0	9	21	8.3	40
IDAHO																																
BOISE	2838	915.8	1012.4	59	37	48.3	- 1.6	81	14	27	2	0	7	31	55	1.65	0.49	0.43	14	2	1.7	1	10.1	SE	33	W	14	1	8	21	8.2	53
IDAHO FALLS 42NW R	4790			52	26	39.3	- 3.8	74	14+	10	3	0	25			1.85	1.36	1.07	10				10.0	SSW	38A	SW	15					
IDAHO FALLS 46W R	4933	844.2		51	27	39.0	- 4.3	71	13	12	17	0	25			2.50	1.99	1.45	13	0	11.9	3	9.1	SW	35A	WSW	14					
LEWISTON	1413	960.6		59	39	49.1	- 1.7	78	14	32	19+	0	3			1.03	- 0.11	0.36	12	0	T	T						2	1	27	8.9	
POCATELLO	4444	860.1	1014.0	52	32	41.9	- 4.6	74	13	22	17	0	18	28	63	3.30	2.24	1.14	16	1	10.3	3	10.5	SW	57	SW	14	2	7	21	8.2	45
ILLINOIS																																
CAIRO U	314	1002.4		71	53	62.3	2.9	88	21	40	24	0	0			2.57	- 1.50	1.45	6	2	0.0	0	11.0	SW*	41	SW	29	3	11	16	6.8	62
CHICAGO O HARE	658	989.6	1014.6	62	39	50.9		82	2	26	12+	0	9	35	55	4.88		2.31	11	3	T	T	11.8	SSW	35*	SW	3	7	13	10	5.8	
CHICAGO MIDWAY	610	992.2	1015.2	63	42	52.4	3.3	82	2	30	4	0	3	35	56	4.79	1.75	2.57	9	7	T	T	11.9	NE	46	SW	3	8	12	10	5.7	68

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.			°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ILLINOIS																															
MOLINE	582	992.2	1014.6	65	41	52.9	2.9	81	16+	29	14+	0	5	39	63	4.24	1.07	0.88	8	5	0.0	0	12.3	SSW	39	SW	19	6	14	10	6.2	67
PEORIA	652	992.9	1015.4	65	41	52.9	2.1	82	17	29	10	0	6	37	57	4.08	0.11	2.64	8	6	0.0	0	11.5	S	38	SW	19	5	14	11	6.0	66
ROCKFORD	728	987.1	1014.6	63	39	50.7	2.9	80	2	26	10	0	7	36	60	5.51	2.46	3.03	12	6	T	T	11.4	S	38*	WSW	3	8	10	12	5.9	
SPRINGFIELD	588	991.0	1014.4	69	43	55.7	3.3	88	17	28	24	0	3	37	51	2.25	- 1.34	0.70	7	6	T	T	13.4	S	49	W	3	7	9	14	6.3	67
INDIANA																															
EVANSVILLE	381	999.6	1015.7	70	45	57.7	2.0	85	21+	30	24	0	2	43	58	1.13	- 2.85	0.53	7	4	0.0	0	8.5	NW	34	S	19	5	6	19	7.0	64
FORT WAYNE	791	983.7	1015.3	61	38	49.6	1.3	81	2	24	10	0	13	38	66	4.39	1.25	2.65	10	5	T	T	11.2	NW	47	NE	17	8	10	12	6.2	56
INDIANAPOLIS	793	985.1	1015.4	65	42	53.3	2.5	81	1	27	10	0	8	40	63	2.58	- 1.16	1.04	8	5	0.0	0	9.5	N	40*	N	22+	6	12	12	6.3	65
SOUTH BEND	768	986.5	1014.8	59	39	49.2	1.7	80	2	22	10	0	9	37	64	2.42	- 1.16	1.00	11	5	0.5	T	11.5	NNW	32*	NNW	30+	7	14	9	5.7	
IOWA																															
BURLINGTON	694	988.5	1014.3	66	43	54.6	3.8	82	16	29	24	0	1	38	57	2.22	- 1.22	0.85	9	6	0.0	0	11.8	SSW	45	SW	3	6	11	13	6.3	66
DES MOINES	948	983.1	1014.3	62	41	51.7	1.8	78	16+	28	4	0	3	38	64	4.18	1.65	1.52	11	10	0.0	0	11.5	S	47	SW	3	9	9	12	6.7	52
DUBUQUE	1065	989.0		61	38	49.5	2.7	78	2	26	10	0	8			4.30	1.22	1.46	11	7	T	T			60*	WSW	3	9	7	14	6.2	
SIOUX CITY	1095	971.9	1013.2	64	40	52.0	3.1	84	1	26	4	0	5	36	60	1.12	- 1.13	0.29	11	4	T	T	12.1	SE	50	W	3	7	5	18	7.1	47
WATERLOO	868	982.0	1014.3	62	39	50.4	2.6	79	16	28	24	0	9	37	63	3.41	0.71	1.39	10	8	0.0	0	12.4	S	52*	WSW	3	8	5	17	6.5	
KANSAS																															
CONCORDIA	1470	962.1	1012.2	69	43	55.8	2.4	86	15	27	4	0	2	40	59	1.95	- 0.17	0.73	6	5	0.0	0	13.8	SSE	51	SE	2	10	9	11	5.7	69
DODGE CITY	2594	923.8	1011.2	73	43	58.2	4.6	95	15	31	23	1	3	33	47	0.07	- 1.77	0.05	3	2	0.0	0	13.1	SSE	57	S	2	13	6	11	5.0	78
GOODLAND	3645	884.5	1011.4	70	35	52.2	4.1	91	15	23	3	1	11	29	48	T	- 1.59	T	0	0	0.0	0	15.3	SSE	48*	S	1	13	10	7	4.3	
TOPEKA	877	977.7	1013.2	70	45	57.4	3.0	85	16+	32	4	0	1	41	58	0.65	- 2.64	0.19	9	7	0.0	0	14.6	S	56	S	15	10	8	12	5.8	65
WICHITA	1321	963.4	1012.0	73	48	60.5	3.8	92	21	34	4	1	0	44	57	0.22	- 2.08	0.08	5	7	0.0	0	12.9	S	49	S	15	9	8	13	6.3	65
KENTUCKY																															
COVINGTON	869	983.1	1015.2	66	42	53.8	0.6	82	18+	25	15+	0	7	39	61	2.01	- 1.21	0.98	9	5	0.0	0	9.7	SSW	35*	SW	22	3	16	11	6.4	
LEXINGTON	979	980.1	1016.0	68	46	57.3	2.9	86	21	30	10	0	1	39	53	1.61	- 2.43	1.29	4	4	0.0	0	10.3	WSW	46*	NW	22+	6	9	15	6.6	
LOUISVILLE	474	996.3	1015.5	71	47	59.0	4.2	86	21	31	10	0	2	41	53	1.87	- 1.95	1.44	6	5	0.0	0	9.2	SSW	36	NW	21	7	9	14	6.6	57
LOUISIANA																															
ALEXANDRIA	92	1011.0	1015.7	80	58	69.0		88	10	41	8+	0	0	59	74	0.90		0.80	6	4	0.0	0	8.2	SSW	24	SSW	18+	7	10	13	6.4	
BATON ROUGE	64	1012.8	1016.1	85	61	72.6	4.9	90	29+	48	14+	6	0	60	69	0.81	- 3.96	0.58	2	2	0.0	0	9.8	S	23	S	16	7	11	12	5.8	
LAKE CHARLES	14	1013.9	1015.5	80	62	71.1	3.2	85	30+	46	7	0	0	63	77	0.64	- 3.73	0.57	2	3	0.0	0	11.0	S	25*	SSW	16	4	14	12	6.6	
NEW ORLEANS	3	1014.0	1016.2	82	63	72.6	5.7	88	10	49	8+	0	0	62	72	1.84	- 2.71	1.48	3	2	0.0	0	9.3	S	25*	S	29	11	10	9	5.4	
NEW ORLEANS AUDUBON	6	1009.5		83	66	74.4		87	25+	54	8	0	0			1.16		0.57	3	2	0.0	0	4.6	SW	14	W	6	7	13	10	5.7	60
SHREVEPORT	252	1005.7	1015.2	81	59	69.7	4.4	90	10+	42	7	2	0	57	68	3.53	- 1.04	1.47	8	7	0.0	0	11.3	S	29	S	16	6	7	17	6.8	54
MAINE																															
CARIBOU	624	984.4	1008.3	43	27	35.3	- 1.1	66	29	13	5	0	25	27	73	3.16	0.53	0.85	13	0	10.9	27	13.5	NW	56*	WNW	11	4	4	22	7.9	
PORTLAND	61	1005.8	1009.9	54	31	42.4	- 0.1	72	20	20	6+	0	19	30	62	2.19	- 1.54	0.89	9	1	0.8	T	10.8	WNW	49	W	20	9	7	14	5.9	59
MARYLAND																															
BALTIMORE	146	1009.3	1014.1	67	41	54.0	- 0.2	88	3+	30	6	0	2	34	51	2.15	- 1.45	1.55	9	3	0.0	0	10.6	WNW	56	NW	23	12	9	9	5.0	75
BALTIMORE U	14			67	48	57.8	2.1	89	3	38	10	0	0			1.47	- 2.24	0.79	9												
FREDERICK	294			66	39	52.5	0.3	87	3	28	16+	0	7			1.58	- 2.09	0.55	7	4	0.0	0									
MASSACHUSETTS																															
BLUE HILL OBS R	629	985.8		57	36	46.4	0.7	73	20	25	5	0	8			1.38	- 2.62	0.79	8	0	T	T	16.6	NW	65	WNW	4					62
BOSTON	15	1005.4	1010.3	58	40	48.9	1.0	75	20	28	5	0	2	30	54	1.48	- 2.29	0.51	7	1	T	T	15.7	NW	52	NW	5	10	8	12	5.3	62
NANTUCKET	43	1010.2	1011.0	52	37	44.4	0.6	62	21+	26	1	0	6	34	69	2.52	- 1.24	1.74	9	3	0.5	T	14.1	WNW	45	NW	5	12	7	11	5.1	68
PITTSFIELD	1170			54	30	42.3	- 0.7	70	18	22	6+	0	21			2.37	- 1.50	0.57	11		5.0	3										
WORCESTER	986	973.3	1010.2	55	34	44.9	0.3	72	18	24	5+	0	13	27	54	1.89	- 2.04	0.71	8	2	0.1	T	10.5	W	35*	NW	4	9	10	11	5.5	
MICHIGAN																															
ALPENA	689	988.1		55	29	41.8	1.2	81	17	14	5	0	20			1.44	- 1.19	0.64	6	2	5.3	2	9.2	NW	43	W	3	7	13	10	5.9	70
DETROIT	619	987.5	1014.7	60	39	49.4	2.3	83	2	27	10	0	5	34	57	2.25	- 0.75	0.92	8	3	T	T	11.1	NW	51	NW	19	8	10	12	6.3	51
DETROIT M WAYNE CO	633	990.2	1014.8	59	36	47.4	0.7	83	2	25	15+	0	10	36	66	2.30	- 0.75	0.86	9	5	T	T	8.3	WNW				7	10	13	6.2	
DETROIT WILLOW RUN	711	985.8	1014.7	59	37	47.8	0.1	81	2	25	10+	0	8	35	64	2.63	- 0.42	1.11	10	4	0.3	T	12.2	NW	46*	WNW	19	6	11	13	6.3	
ESCANABA U	594	991.5		49	32	40.2	1.1	73	17	22	4	0	17			1.16	- 1.07	0.69	7	3	T	T	10.6		40	N	30+	6	17	7	5.8	58

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

APRIL 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MICHIGAN	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
FLINT	766	986.5	1015.2	58	35	46.6	1.4	82	2	21	5	0	13	34	62	1.91	- 0.75	0.67	9	3	1.9	1	10.7	SW	40*	WSW	3	8	11	11	5.9	
GRAND RAPIDS		989.5	1015.0	59	37	47.6	1.9	79	2	25	10+	0	12	33	58	3.84	0.90	1.85	9	5	4.1	3	11.6	W	45	SW	3	10	8	12	5.5	69
LANSING	852	982.1	1014.5	59	35	47.0	1.3	81	2	20	5	0	15	32	57	1.95	- 0.92	0.53	9	4	1.6	T	14.3	WNW	61	W	3	8	13	9	5.8	58
MARQUETTE U	677	986.8		50	32	41.2	1.9	72	3	19	4	0	16			2.39	- 0.31	0.95	8	1	0.7	3	8.9	NW#	46	SW	3	6	11	13	6.3	67
MUSKEGON	627	991.5	1014.8	57	38	47.6	3.4	75	28	24	5	0	8	35	64	2.86	0.28	2.31	9	6	3.4	1	11.9	NW	32*	SW	3	12	9	9	5.1	
SAULT STE MARIE	721	991.2	1014.2	49	30	39.5	2.0	70	17	16	5	0	23	28	69	1.41	- 0.75	0.53	8	1	0.9	2	11.4	NW	46*	SW	3	7	12	11	6.0	63
MINNESOTA																																
DULUTH	1426	972.2	1014.3	52	30	41.0	3.5	73	15	18	18	0	21	26	60	2.21	- 0.15	0.82	11	2	0.2	T	11.9	E	48	SW	16	6	9	15	6.9	51
INTERNATIONAL FALLS	1179	972.6	1014.4	52	29	40.5	3.1	76	15	14	4	0	22	28	64	2.91	1.35	1.53	10	4	0.2	T	8.9	NE	29*	WSW	16	4	11	15	6.8	
MINNEAPOLIS	822	980.0	1014.0	59	35	47.3	2.6	77	16	23	10+	0	16	34	62	2.07	0.22	0.77	12	7	5.5	4	11.6	SE	45	SW	3	6	9	15	6.8	57
ROCHESTER	1297	966.1	1014.4	57	35	46.2	1.7	76	16	25	4	0	16	35	68	2.63	0.44	0.99	14	5	2.3	2	14.2	S	40*	W	3	7	6	17	6.7	
ST CLOUD	1034	974.9		58	35	46.0	3.2	76	2	22	4	0	17			2.91	0.89	0.60	15	5	3.9	2						6	7	17	7.1	
MISSISSIPPI																																
JACKSON	305	1003.8	1015.9	78	58	68.1	3.7	87	22	43	13	0	0	57	71	2.44	- 2.07	1.56	8	3	0.0	0	8.5	SSW	24	N	13	7	6	17	6.5	54
MERIDIAN	292	1002.6	1016.5	80	55	67.4	3.0	90	22	38	14	1	0	56	71	1.72	- 3.61	0.37	9	4	0.0	0	8.1	S	25*	S	17	7	10	13	6.3	
VICKSBURG U	234	1006.3		76	59	67.7	2.0	85	1	48	5	0	0			4.22	- 0.70	2.11	9	4	0.0	0	8.7		24	S	16	6	9	15	6.8	50
MISSOURI																																
COLUMBIA	778	984.9	1013.5	71	47	58.6	4.0	88	22	34	24	0	0	41	55	2.15	- 1.15	1.07	7	5	T	T	12.8	SE	41	W	29	8	13	9	5.9	65
KANSAS CITY	742	978.4	1013.3	71	48	59.2	4.0	85	16+	35	4	0	0	40	52	0.80	- 2.76	0.41	9	4	0.0	0	9.4	ENE	55	SW	2	9	7	14	5.9	75
ST JOSEPH	809	1013.3		68	45	56.5	2.9	84	1	33	4	0	0			1.08	- 2.07	0.63	7	7	0.0	0	13.3	S	44*	WSW	19	12	5	13	5.5	
ST LOUIS	535	994.0	1014.9	70	46	58.2	2.8	90	22	33	24	1	0	40	53	1.98	- 1.73	0.80	7	4	T	T	12.8	S	37	NW	22	5	12	13	6.5	58
ST LOUIS RFC	465			71	51	60.6	4.1	90	22	38	10+	1	0			2.49	- 1.09	1.64	7		T	T										
SPRINGFIELD	1265	967.1	1014.0	74	48	61.2	5.6	93	21	35	30+	1	0	45	57	1.11	- 2.98	0.54	7	3	0.0	0	12.6	SSE	45	SW	19+	6	10	14	6.5	60
MONTANA																																
BILLINGS	3567	887.3	1012.3	55	34	44.4	- 1.1	78	14	22	3	0	13	30	63	2.38	1.07	0.67	10	0	15.4	3	12.2	NE	42	NW	16	4	8	18	7.5	56
GLASGOW	2277	937.6		54	33	43.3	- 0.1	82	14	20	9+	0	14			1.22	0.21	0.53	7	0	5.3	3						3	5	22	8.0	
GREAT FALLS	3662	884.8	1014.0	54	32	42.9	- 1.2	79	14	19	2	0	16	27	58	1.24	0.26	0.56	9	1	11.1	5	12.5	SW	36	SW	15+	2	9	19	7.8	46
HAVRE	2582	922.9		56	31	43.8	1.2	83	14	18	3	0	17			0.80	- 0.17	0.51	7	0	5.2	1	9.6	E#	45	NW	16	4	5	21	7.9	53
HELENA	3893	869.6	1013.3	54	31	42.6	- 0.7	78	14	19	2	0	20	27	58	0.81	- 0.02	0.42	7	1	2.3	3	9.2	WNW	42	W	15	1	6	23	8.5	43
KALISPELL	2965	908.1		56	30	43.2	1.0	77	14	20	3	0	19			0.88	- 0.16	0.23	12	1	3.0	2	7.3					2	5	23	8.4	
MISSOULA	3190	898.4	1013.5	56	32	44.0	0.7	76	14	23	3	0	20	27	55	0.68	- 0.29	0.16	11	1	1.5	1	8.3	NNW	33	SW	14	0	9	21	8.5	62
NEBRASKA																																
GRAND ISLAND	1841	945.8	1012.6	65	39	51.8	0.7	87	1	21	4	0	6	36	60	1.39	- 0.89	0.64	7	4	0.0	0	12.5	S	38*	W	3	6	11	13	6.2	
LINCOLN U	1150			66	44	54.8	3.0	82	1	29	4	0	2			0.88	- 1.57	0.40	9	6	T	T	12.7	S#	52	S	15	7	10	13	6.4	55
NORFOLK	1544	956.3		64	39	51.2	2.8	85	1	21	4	0	4			1.57	- 0.61	0.70	9	4	T	T						6	7	17	7.1	
NORTH PLATTE	2779	911.6	1010.7	66	36	50.8	3.1	86	15	18	4	0	10	34	57	1.09	- 0.92	0.61	7	5	0.2	T	14.2	SE	52	NW	27+	6	10	14	6.9	69
OMAHA	978	973.2	1013.3	66	44	54.7	3.0	82	1	30	4	0	2	37	57	3.43	0.87	2.04	12	6	0.0	0	12.6	SSE	38	S	15+	4	12	14	6.8	60
OMAHA N OMAHA AP	1323	964.8		64	42	52.9	3.4	82	1	26	4	0	2			2.43	- 0.05	1.09	11	8	0.0	0						4	12	14	7.0	
SCOTTSBLUFF	3950	874.9	1011.1	62	35	48.5	2.4	82	14	20	23	0	9	30	55	1.02	- 0.79	0.30	9	1	1.2	T	14.9	WNW	44*	NW	3	2	14	14	7.0	
VALENTINE	2587	920.3		61	34	47.6	1.9	87	1	18	4	0	17			1.33	- 0.65	0.87	9	3	0.5	T	12.6	N#	52	NW	15	8	6	16	6.7	55
NEVADA																																
ELKO	5075	841.5	1013.8	51	27	38.6	- 5.7	72	30+	17	22+	0	24	25	61	2.17	1.35	0.73	16	1	14.3	4	8.0	SW	35*	S	14	2	9	19	7.8	
ELY	6257	804.9	1012.9	49	23	36.1	- 6.5	71	13	- 5	22	0	26	23	64	2.12	1.17	0.76	14	0	24.5	7	9.4	SSE	54	S	14	6	4	20	7.4	53
LAS VEGAS	2162	946.5	1012.7	72	45	58.5	- 6.5	86	30	33	22	0	0	22	27	0.10	- 0.13	0.05	2	0	0.0	0	13.9	SW	39*	W	26	17	4	9	4.5	81
RENO	4404	863.2	1014.8	57	27	41.8	- 5.7	77	30	14	21	0	23	27	60	0.82	0.28	0.35	9	0	5.9	2	8.0	WNW	38	S	5	4	14	12	6.9	77
WINNEMUCCA	4299	864.9		55	27	40.6	- 5.3	76	29	8	16	0	23			1.09	0.27	0.26	11	1	6.7	3	8.2	S	52	W	14	4	4	22	7.6	42
NEW HAMPSHIRE																																
CONCORD	339	999.3	1010.3	57	30	43.4	- 0.4	73	20	19	1	0	20	28	59	1.23	- 2.08	0.39	10	1	0.5	T	9.7	NW	44	NW	22	10	10	10	5.3	58
MT WASHINGTON OBS	6262	795.1		26	14	19.9	- 3.1	41	20+	- 8	5	0	30			6.97	1.08	1.08	17	4	27.9	11	35.8	W#	122Y	W	5	6	5	19	7.4	30
NEW JERSEY																																
ATLANTIC CITY	58	1011.4	1013.5	63	42	52.5	1.5	85	3	30	6	0	1	33	51	1.39	- 2.02	0.92	8	3	0.0	0	11.6	NW	35*	WNW	4	9	10	11	5.7	66
ATLANTIC CITY U	10			61	44	52.4	2.5	86	3	36	8+	0	0			1.38	- 2.00	0.86	8		0.0	0	13.3		49*	WNW	20					

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point	Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.					In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																															
NEWARK	11	1011.5	1012.7	62	43	52.6	1.3	82	18	32	5	0	1	30	46	0.90	- 2.61	0.75	4	2	T	T	13.3	NW	42*	WNW	4	8	14	8	5.6	
TRENTON U	56	1005.4	1012.2	63	42	52.7	1.0	85	3	32	5	0	1			0.83	- 2.38	0.53	6	2	0.0	0	11.4	NW#	40	NW	4	9	12	9	5.5	71
NEW MEXICO																															
ALBUQUERQUE	5310	845.9	1010.9	73	43	57.7	2.0	86	14	31	19+	0	2	19	26	0.14	- 0.33	0.13	3	2	0.0	0	12.6	S	47	SW	1	15	11	4	4.0	81
CLAYTON	4969	841.9		72	39	55.5	4.8	84	8	28	23+	0	6			0.25	- 0.94	0.25	1	1	0.0	0						15	6	9	4.1	
RATON	6379	802.2		68	33	50.6	3.7	80	7	21	6	0	15			0.00	- 1.06	0.00	0		0.0	0						16	4	10	4.4	
ROSWELL	3619	890.3		81	42	61.3	3.8	93	8	32	23	5	1			0.16	- 0.57	0.16	2	2	0.0	0	10.7		35	SW	18	13	8	9	4.6	84
SILVER CITY	5373	834.5		72	38	55.3		84	14	27	19	0	5			0.14		0.14	2	0	0.0	0						18	6	6	3.2	
NEW YORK																															
ALBANY	277	1008.1	1011.8	57	34	45.8	- 0.4	70	20	23	9+	0	13	29	55	1.14	- 1.63	0.39	10	2	T	T	10.8	WNW	45	W	4	8	10	12	5.9	61
BINGHAMTON	1590	952.5	1011.7	56	35	45.6	2.1	79	3	26	10	0	14	30	57	2.43	- 0.51	0.54	14	7	3.5	2	12.7	NNW	42	W	4	6	8	16	6.7	71
BUFFALO	705	985.8	1014.0	55	33	44.2	1.2	76	29	22	8	0	16	32	65	2.77	- 0.24	1.11	12	4	0.3	T	12.6	SW	42	W	4	6	7	17	6.6	62
NEW YORK U	132	1000.8		63	44	53.7	2.3	81	18	34	5	0	0			1.27	- 2.16	0.89	6	1	T	T	10.3	NW#	37	NW	4	11	12	7	4.8	71
NEW YORK LA GUARDIA	19	1010.5	1012.3	61	43	52.2	1.0	79	18	33	5	0	0	31	49	1.60	- 1.97	0.93	6	3	T	T	13.5	NW	59	W	4	8	15	7	5.4	
ROCHESTER	543	993.9	1013.4	58	35	46.2	1.1	78	3+	26	9+	0	13	33	62	2.74	0.07	1.17	10	3	1.1	1	13.3	WNW	49	W	4	10	10	10	5.6	66
SCHENECTADY	217			57	36	46.3	0.0	70	29	26	9+	0	10			1.32	- 1.52	0.51	8		T	T						16	11	3	3.2	
SYRACUSE	417	990.2	1012.2	56	35	45.6	- 0.4	79	3	25	5	0	12	31	60	2.22	- 0.86	0.58	12	4	1.8	T	15.1	WNW	47	NW	4	8	10	12	5.8	64
NORTH CAROLINA																															
ASHEVILLE U	2203	937.0		70	46	57.6	1.6	88	3	31	16	0	1			3.02	- 0.17	1.77	7	1	0.0	0	8.6	NW#	28	NW	23	13	9	8	5.0	71
CAPE HATTERAS R	7	1014.1	1015.0	67	50	58.4	- 0.9	80	22	35	16	0	0	48	69	6.44	4.15	5.60	6	1	0.0	0	11.8	SW				8	11	11	5.9	67
CHARLOTTE	735	987.6	1015.7	75	50	62.9	2.6	91	23+	34	16	3	0	44	54	2.69	- 0.80	1.13	6	2	0.0	0	8.7	SW	28	SW	30	8	15	7	5.5	63
GREENSBORO	891	983.6	1015.5	72	47	59.6	2.2	87	23+	32	16	0	1	40	53	2.49	- 0.94	1.27	8	3	0.0	0	9.0	SW	36	W	23	7	16	7	5.3	65
RALEIGH	433	1001.1	1015.0	73	48	60.5	1.2	90	23	31	16	1	1	41	54	1.77	- 1.75	0.83	7	2	0.0	0	8.8	SW	28*	NNW	4	10	10	10	5.4	66
WILMINGTON	30	1013.0	1015.9	75	52	63.7	1.2	91	23	33	16	2	0	49	65	1.22	- 1.64	0.50	8	2	0.0	0	7.9	SW	34	NW	13	6	14	10	6.0	70
WINSTON SALEM	967	980.2	1015.3	73	50	61.2	2.9	87	23+	37	16	0	0	37	44	2.56	- 1.06	1.35	6	3	0.0	0	9.9	SW	32*	SSE	29	9	12	9	5.3	
NORTH DAKOTA																															
BISMARCK	1647	952.1	1013.1	55	32	43.9	0.9	80	14	19	4	0	17	32	66	1.98	0.76	0.50	15	3	7.6	3	11.0	ESE	56	SW	16	2	7	21	8.1	56
DEVILS LAKE U	1471	959.0		52	30	41.0	1.1	78	14	17	4	0	20			1.87	0.72	0.61	11	2	5.5	4	9.4	E#	33	NE	29	2	12	16	7.5	48
FARGO	900	995.3	1013.2	54	33	43.5	1.5	79	14	8	4	0	14	33	69	2.67	0.95	1.91	10	5	6.0	6	12.5	SSE	57	NW	3	2	9	19	7.8	56
WILLISTON U	1899	944.6		54	31	42.5	- 0.3	80	14	19	2	0	19			2.33	1.39	0.58	10	0	10.5	5	10.7	NE#	50	W	16	2	8	20	7.9	41
OHIO																															
AKRON	1209	976.6	1015.1	59	38	48.6	1.4	80	2	26	10+	0	10	34	59	2.82	- 0.52	0.91	9	6	0.3	T	10.2	NW	37*	WSW	19	5	11	14	6.7	
CINCINNATI OBS	761			68	45	56.6	2.4	86	1	29	10	0	2			2.35	- 1.28	0.96	8	6	0.0	0	7.4	N#	31	SW	19					60
CINCINNATI U	553	992.0		69	47	58.2	3.3	87	18	32	10	0	1			2.59	- 1.05	1.21	9	6	0.0	0										
CLEVELAND	777	986.8	1015.0	59	38	48.4	1.8	81	2	26	15	0	9	35	62	2.41	- 1.00	0.71	11	5	0.3	T	11.6	WNW	42	SW	18	5	13	12	6.2	73
COLUMBUS	812	985.4	1015.7	63	40	51.1	- 0.2	82	2	26	10	0	9	37	60	3.27	- 0.22	1.05	9	6	T	T	9.6	N	40	WNW	4	6	11	13	6.5	67
COLUMBUS U	724			62	43	52.9	0.9	81	2	29	10	0	2			3.45	0.12	1.37	7	5	T	T										
DAYTON	997	982.4	1015.3	63	41	51.9	1.2	81	2	25	10	0	5	37	60	3.09	- 0.23	1.25	10	5	T	T	11.2	NW	38	W	30	6	12	12	6.1	56
MANSFIELD	1296			58	38	47.9	1.0	78	2	26	11	0	13			2.30	- 1.01	0.70	10	5	0.9	1						5	10	15	7.0	
SANDUSKY U	606	993.2		59	41	50.5	1.8	83	2	32	30+	0	2			2.32	- 0.83	0.56	10	5	T	T	10.2	NW#	56	NW	30	13	8	9	4.9	68
TOLEDO	676	989.1	1014.9	60	36	47.5	0.6	82	2	21	5	0	13	35	63	2.17	- 0.60	0.79	10	5	0.3	T	10.6	WNW	35	NW	30	6	14	10	6.3	61
YOUNGSTOWN	1178	971.9	1014.9	58	37	47.9	- 0.1	81	2	26	5	0	11	33	59	2.91	- 0.79	1.21	11	6	1.3	1	12.1	NW	44*	WSW	19	5	9	16	6.6	
OKLAHOMA																															
OKLAHOMA CITY	1280	969.5	1012.7	75	54	64.8	5.9	90	21	44	12+	1	0	49	61	2.77	- 0.35	1.50	6	5	0.0	0	15.2	SSE	35	SW	24+	9	6	15	6.3	67
TULSA	676	988.6	1013.1	77	54	65.6	6.2	92	21+	40	4	3	0	48	58	2.21	- 1.81	1.43	4	4	0.0	0	14.3	S	45	SW	18	9	4	17	6.4	56
OREGON																															
ASTORIA	8	1013.6	1013.7	55	41	48.0	- 0.5	69	28	30	1	0	2	42	81	5.76	0.58	1.05	23	0	T	T	8.9	WSW	35*	SSW	14	0	3	27	9.2	
BURNS U	4151	869.1		51	29	39.9	- 6.1	68	29	15	21	0	19			2.10	1.35	0.73	15	0	8.8	3						2	5	23	8.3	
EUGENE	361	1001.7		56	40	47.6	- 3.2	70	28	30	20	0	2			5.23	2.85	0.96	20	1	T	T	8.0		31*	SW	5	0	4	26	8.9	
MEACHAM	4050			45	30	37.5	- 3.3	62	14+	20	16+	0	23			4.34	1.54	1.03	20	0	16.4	6						1	2	27	9.2	
MEDFORD	1298	967.8	1015.7	56	36	46.1	- 5.5	72	28	25	20	0	10	37	75	2.25	1.19	0.56	20	0	0.6	T	6.6	WNW	25*	SE	11+	2	4	24	8.5	
PENDLETON	1482	959.4	1013.5	57	39	48.0	- 3.5	70	12	31	16+	0	2	38	71	1.86	0.77	0.40	15	0	1.0	1	9.6	W	46*	W	15	3	4	23	8.3	
PORTLAND	21	1008.8	1014.5	56	41	48.6	- 3.2	70	28	33	2	0	0	41	76	3.78	1.69	0.67	20	0	T	T	8.4	SSW	33	SW	14	0	3	27	9.3	22

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

APRIL 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	F.	F.	°F.	F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
PORTLAND U	30			58	43	50.6	- 2.9	75	28	35	2	0	0			4.72	2.27	0.88	22	0	T	T										
ROSEBURG	505	996.6		59	39	49.0	- 2.5	78	28	29	20	0	3			5.28	3.35	0.99	21	0	T	T	4.9	S#	25	SW	14	0	6	24	8.7	39
SALEM	195	1007.8	1015.0	56	39	47.0	- 4.1	68	28	30	10+	0	6	40	78	4.07	1.74	1.11	21	1	T	T	8.4	S	25*	WSW	12	0	2	28	9.1	
SEXTON SUMMIT R	3836	880.5		42	30	36.2	- 8.0	63	28	21	20+	0	21			7.54	5.69	1.15	21	0	35.2	14	10.5	S				0	7	23	9.0	
PACIFIC AREA																																
CANTON ISLAND	11	1008.7	1009.0	89	78	83.8	0.2	91	26+	74	28	13	0	75	77	1.71	- 1.91	0.64	11	0	0.0	0	12.3	NE	29*	N	28	7	19	4	5.3	
ENIWETOK	16	1009.6	1010.3	87	77	82.4	0.3	90	29	73	20	1	0			2.00	0.72	0.59	14		0.0	0	12.8									
TAGUAC GUAM R	361			85	72	78.5	- 1.4	87	20+	65	30+	0	0			19.55	16.52		24	2	0.0	0	9.7	E#	64	SW	30					71
JOHNSTON	7	1012.5	1013.1	82	76	78.8	0.8	84	12+	70	6+	0	0	72	81	7.63	5.35	3.86	12	1	0.0	0	13.7	E	38	E	16	2	15	13	6.9	66
KOROR R	94	1006.4	1009.1	89	76	82.4	1.1	90	29+	74	20+	7	0	76	86	3.39	- 7.00	0.82	19	3	0.0	0	6.0	NE	20	NE	10	0	1	29	9.5	70
PONAPE R	123	1004.7	1009.2	87	74	80.4	- 0.1	91	27	69	6	1	0	75	86	12.44	- 7.60	2.76	24	2	0.0	0	4.3	NE	20	NE	21+	0	3	27	9.2	38
TRUK MOEN ISLAND	5	1009.5	1008.6	87	76	81.2	0.4	89	26+	72	25	0	0	75	81	7.41	- 4.91	3.10	14	7	0.0	0	6.1	NNE	26	NE	21	0	3	27	9.4	41
WAKE	11	1014.3	1013.9	81	72	76.5	- 1.9	85	4	69	7	0	0	67	75	2.86	0.99	0.85	14	0	0.0	0	17.3	ENE	33*	ENE	8	3	13	14	7.2	
YAP R	53	1007.5	1008.2	88	76	81.7	- 0.1	89	25+	74	12+	0	0	76	84	4.20	- 2.18	1.24	18	0	0.0	0	8.7	NE	24	NF	23	0	0	30	9.9	77
PENNSYLVANIA																																
ALLENTOWN	376	999.0	1013.4	63	38	50.5	1.2	82	3	27	8	0	7	30	50	1.18	- 2.58	0.78	8	1	0.2	T	13.2	WNW	60*	WNW	4	8	11	11	5.8	
ERIE	732	987.5	1014.2	57	37	46.8	1.3	79	3	25	5	0	10	34	64	2.94	- 0.62	1.08	9	5	0.1	T	13.7	S	40*	W	19	9	6	15	6.1	
HARRISBURG	335	1000.0	1013.8	67	42	54.4	2.6	87	2	29	6	0	3	32	46	1.52	- 1.50	0.75	9	5	T	T	11.2	NW	42	NW	20+	6	12	12	6.4	67
PHILADELPHIA	5	1008.9	1013.4	64	41	52.5	0.5	87	3	28	6	0	2	32	49	1.13	- 2.27	0.75	7	2	0.0	0	10.9	NNW	39	NW	4	6	16	8	6.0	71
PHILADELPHIA U	35			66	46	56.0	3.3	89	3	35	5	0	0			0.89		0.58														
PITTSBURGH	1137	984.0	1014.9	61	37	49.0	0.0	82	2	25	10	0	13	34	58	2.39	- 0.69	0.85	12	5	0.3	0	10.1	NW	35*	W	20+	4	10	16	7.0	55
PITTSBURGH U	749			63	42	52.5	0.3	84	2	29	10	0	1			2.04	- 1.33	0.71	13		T											55
READING U	266	1001.4	1013.6	65	43	53.8	1.2	86	3	33	6+	0	0			1.10	- 2.32	0.83	8	1	0.0	0	13.4	NW#	58	W	4	10	13	7	5.3	62
SCRANTON	940	978.7	1012.9	60	38	49.1	1.7	80	3	26	8	0	6	29	48	1.30	- 1.97	0.56	9	4	0.5	T	10.6	NNW	42	W	4	7	9	14	6.3	62
WILLIAMSPORT	527	994.6	1013.7	63	38	50.2	0.8	83	3	28	6	0	6	30	51	1.34	- 2.21	0.38	12	3	T	T	11.0	WNW	40*	W	4	5	12	13	6.5	
RHODE ISLAND																																
BLOCK ISLAND	110	1006.2	1010.3	53	38	45.3	0.2	67	20	27	1	0	2			1.15	- 2.46	0.80	5	2	0.5	T						7	13	10	5.7	
PROVIDENCE	55	1004.7	1010.9	59	38	48.3	1.1	78	20	29	1	0	5	29	53	1.62	- 2.13	1.07	9	1	T	T	13.6	WNW	43*	WNW	4	9	9	12	5.5	63
SOUTH CAROLINA																																
CHARLESTON	41	1014.3	1016.4	77	54	65.8	1.5	92	23	39	15	4	0	53	68	2.68	- 0.20	2.22	5	1	0.0	0	9.3	SSW	36Y	SW	30	9	12	9	5.6	69
CHARLESTON U	9			74	60	66.7	1.1	90	23	48	14	1	0			2.56	0.02	2.22	5		0.0	0	11.0		28	NE	5					
COLUMBIA	217	1003.1	1015.9	78	53	65.3	1.7	92	23+	35	16	4	0	47	59	4.18	0.17	2.28	8	0	0.0	0	8.8	SW	29*	WNW	23	7	16	7	5.5	62
FLORENCE	146	1009.9	1015.8	77	53	64.9	1.4	93	23+	37	16	4	0	47	58	2.20	- 1.41	1.08	7	0	0.0	0	9.2	SW	24*	W	23	10	11	9	5.5	
GNVLE SPARTANBURG	957	978.7	1015.6	76	52	64.0	2.6	91	23	38	16	3	0	43	52	5.95	2.01	3.76	5	1	0.0	0	10.1	SW	32	SW	30	10	12	8	5.2	69
SOUTH DAKOTA																																
HURON	1282	965.1	1012.4	61	35	47.9	1.9	86	14	20	4	0	14	36	69	1.70	- 0.14	0.46	13	6	2.2	T	13.6	SE	47	W	3	5	8	17	7.1	51
RAPID CITY	3165	897.6	1012.6	56	33	44.5	0.0	81	14	22	23+	0	12	31	63	3.80	2.13	1.04	12	1	7.4	1	12.3	N	52	W	16	3	10	17	7.2	53
SIOUX FALLS	1420	960.7	1012.7	62	37	49.4	3.5	86	1	20	4	0	9	36	63	1.25	- 1.06	0.57	7	4	2.3	T	10.8	S	31*	SSE	15+	7	4	19	7.1	
TENNESSEE																																
BRISTOL	1507	961.2	1015.5	70	45	57.6	1.5	85	21	30	16	0	1	40	53	1.38	- 1.78	0.90	6	3	0.0	0	6.8	SW	24*	SW	17+	6	13	11	6.2	
CHATTANOOGA	670	989.0	1016.6	75	52	63.2	3.3	88	22+	35	15	0	0	46	57	6.35	2.06	2.34	10	2	0.0	0	9.1	S	31	W	29	10	8	12	5.9	63
KNOXVILLE	950	981.0	1016.6	72	50	60.8	1.4	86	21	34	15	0	0	42	53	3.63	- 0.07	2.02	9	3	0.0	0	9.6	SW	31	W	30+	9	6	15	6.2	55
MEMPHIS	263	1001.1	1015.8	74	55	64.2	2.3	85	1	41	7	0	0	51	65	5.60	0.97	2.16	9	6	0.0	0	10.7	S	27	SW	16	8	6	16	6.7	68
MEMPHIS U	271			73	56	64.5	2.2	85	1	45	24	0	0			3.31	- 1.31	1.11	10		0.0	0										
NASHVILLE	577	995.9	1015.9	73	51	61.6	2.0	89	21	35	15	0	0	46	60	3.37	- 0.37	2.36	7	2	0.0	0	10.4	S	28	NW	23	10	8	12	5.7	61
OAK RIDGE	905	983.1		72	47	59.6	1.3	88	21	32	15	0	1			3.70	- 0.50	2.32	7	3	0.0	0	6.4		30Y		19	10	8	12	5.8	
TEXAS																																
ABILENE	1759	950.9	1011.3	83	57	70.3	6.0	99	10	44	6+	10	0	49	53	1.53	- 0.74	0.91	6	3	0.0	0	11.5	SSE	40	NW	28	6	10	14	6.4	67
AMARILLO	3607	885.5	1009.9	77	47	61.8	5.8	93	15	36	19+	2	0	27	36	0.47	- 0.85	0.33	3	2	0.0	0	16.7	SW	45	S	2	13	8	9	5.0	79
AUSTIN	597	991.3	1013.1	83	63	72.9	5.2	98	9	46	7	4	0	60	68	3.51	- 0.04	3.27	3	3	0.0	0	10.9	SSE	26	SE	28+	3	9	18	7.2	43
BROWNSVILLE	16	1009.7	1012.4	87	70	78.5	4.6	93	11+	58	7	6	0	69	76	0.05	- 1.50	0.05	2	2	0.0	0	16.7	SSE	39	SE	16	8	15	7	5.3	62
CORPUS CHRISTI	43	1011.6	1012.9	85	68	76.6	4.9	98	9	51	7	3	0	67	75	0.31	- 1.83	0.30	2	0	0.0	0	16.3	SSE	48	SE	16	5	11	14	6.4	65
DALLAS	481	995.0	1013.4	82	61	71.3	6.3	99	10	47	7	6	0	55	62	6.36	2.36	2.39	9	6	0.0	0	14.7	S	42	NW	28	4	9	17	7.0	47

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
TEXAS	Ft.	Mb.	Mb.	F.	°F.	°F.	F.	°F.		F.				F.	%	In.	In.	In.					M.p.h.		M.p.h.							%
DEL RIO U				89	64	76.0		102	10+	48	6	14	0			1.26		1.19	3	3	0.0	0										
EL PASO	3918	884.2	1010.3	81	52	66.5	3.1	92	14	41	6	2	0	21	20	T	- 0.29	T	0	0	0.0	0	10.9	WSW	52	NW	2	15	8	7	4.1	86
FORT WORTH	544	992.5	1013.2	81	60	70.4	5.6	98	10	46	7	6	0	55	63	6.20	2.60	2.57	8	7	0.0	0	15.7	S	35*	S	15+	6	9	15	6.9	
GALVESTON U	7			76	69	72.4	3.9	85	30	56	7+	0	0			0.34	- 2.25	0.30	3	0	0.0	0	14.2		35	SE	17+					69
GALVESTON	5	1012.3	1015.0	78	69	73.4	4.8	84	30	53	7	0	0	65	78	0.46	- 2.51	0.43	3	1	0.0	0	13.2	S				2	19	9	6.2	
HOUSTON U	41			83	68	75.2	5.9	92	10+	53	7	3	0			1.60	- 1.82	0.87	5		0.0	0										
HOUSTON	50	1011.2	1014.1	84	65	74.5	4.5	93	10	47	7	4	0	65	78	0.92	- 2.32	0.69	3	2	0.0	0	12.6	SSE	28*	S	16	4	11	15	7.0	58
LAREDO	500	995.4	1010.8	94	69	81.5	6.3	107	9	52	5+	24	0	62	57	1.13	- 0.52	1.10	4	4	0.0	0	12.8	ESE	26*	ESE	16+	6	12	12	6.0	
LUBBOCK	3243	900.4	1010.9	79	50	64.3	4.8	91	15	39	4	2	0	38	45	0.25	- 0.90	0.18	3	1	0.0	0	15.8	WSW	44*	WSW	18	8	12	10	5.6	
MIDLAND	2854	912.6	1009.9	83	56	69.5	4.6	95	17+	42	6+	7	0	36	39	0.95	0.12	0.87	3	2	0.0	0	12.6	WSW	38*	S	1	6	13	11	6.1	
PORT ARTHUR	16	1013.0	1014.7	82	63	72.6	4.9	86	30+	45	7	0	0	64	79	1.10	- 2.84	0.61	5	3	0.0	0	12.2	S	36	S	16	3	13	14	6.7	60
SAN ANGELO	1903	944.5	1010.7	87	60	73.2	6.6	99	10	44	6	13	0	48	49	0.96	- 1.05	0.83	4	3	0.0	0	10.4	SSE	25*	SSE	2	9	8	13	6.2	
SAN ANTONIO	792	987.5	1012.4	86	63	74.6	6.4	99	9	48	7	7	0	61	68	1.88	- 0.94	1.71	6	1	0.0	0	10.7	SE	38	NE	28	6	7	17	6.7	55
VICTORIA	104	1018.5		85	66	75.6	5.6	98	9	48	7	5	0			0.84	- 1.78	0.73	2	2	0.0	0	13.1		46Y		16	6	10	14	6.8	
WACO	500	992.1	1013.2	83	61	72.0	5.4	101	9	45	7	5	0	58	65	2.76	- 1.12	1.47	8	5	0.0	0	16.2	SSE	35*	NNW	11	5	7	18	7.1	
WICHITA FALLS	994	974.9	1011.7	80	56	68.1	5.1	94	21	44	13	8	0	51	60	1.13	- 1.40	0.65	6	6	0.0	0	12.3	S	37*	S	28	6	7	17	6.5	
UTAH																																
MILFORD	5028	840.5		60	29	44.1	- 3.6	79	13	18	3	0	21			0.98	0.26	0.36	9	0	8.7	3						3	11	16	7.3	
SALT LAKE CITY	4220	864.7	1013.9	55	34	44.3	- 5.6	76	14	26	22	0	15	30	61	3.86	2.10	0.65	16	1	14.3	2	9.8	S	43	SW	26+	6	4	20	7.6	34
WENDOVER	4237	867.3		55	35	45.0	- 6.6	76	14	23	3	0	12			0.92	0.41	0.39	11	2	0.8	T						6	5	19	7.0	
VERMONT																																
BURLINGTON	331	995.9	1010.7	52	29	40.3	- 2.9	69	29	18	6+	0	24	29	66	2.52	- 0.11	0.84	14	2	1.3	T	9.9	S	42	NW	4	7	9	14	6.4	49
VIRGINIA																																
LYNCHBURG	947	989.3		72	47	59.2	3.0	89	3	32	11	1	0			1.15	- 1.99	1.00	6	2	0.0	0	7.9		30	W	23	10	13	7	5.0	69
NORFOLK	26	1013.3	1014.8	70	50	60.3	2.3	91	19+	40	16	3	0	41	53	1.29	- 1.87	0.75	8	2	0.0	0	13.3	SW	38	W	4	10	11	9	5.2	67
RICHMOND	162	1008.2	1014.6	73	46	59.2	2.1	93	3	35	25+	2	0	37	48	0.64	- 2.51	0.20	5	3	0.0	0	9.5	SW	34	NW	4	10	12	8	5.2	67
ROANOKE	1174	972.8	1015.0	72	46	58.6	2.2	88	3	31	16	0	1	33	42	0.87	- 2.23	0.78	4	2	0.0	0	11.9	NW	58*	NW	20	10	13	7	5.0	
WASHINGTON																																
OLYMPIA	190	1006.8	1014.3	56	38	46.8	- 3.2	67	13	25	2	0	4	40	79	4.13	1.17	0.89	24	1	T	T	7.6	SSW	26*	S	6	0	0	30	9.4	
SEATTLE TACOMA	400	999.7	1013.7	55	41	48.3	- 0.9	65	28+	30	2	0	1	40	77	3.06	0.66	0.68	20	0	0.0	0	8.9	SSW	28*	SSW	6	0	6	24	8.9	
SEATTLE U	14			57	45	50.7	- 1.1	70	13	36	2	0	0			2.75	0.78	0.43	19	0	0.0	0			40	W	7+					44
SPOKANE	2356	943.4	1012.4	55	35	45.0	- 2.3	74	14	27	1	0	9	34	69	1.32	0.41	0.30	14	1	0.5	T	8.7	SW	49	SW	14	2	1	27	8.8	57
STAMPEDE PASS R	3958	875.0		39	29	34.3	- 2.2	53	28	21	2	0	25			6.39	0.79	0.93	26	0	29.6	73						0	2	28	9.7	
TATOOSH ISLAND	101	1010.2	1013.1	52	44	47.8	0.3	58	11	37	1	0	0	42	81	5.76	0.53	1.20	15	0	0.0	0	14.5	ENE	45	W	15+	1	5	24	8.5	50
WALLA WALLA U	949	976.5		59	43	50.7	- 3.1	73	12	35	16+	0	0			1.86	0.46	0.60	14	3	0.0	0	5.5	W*	33	W	15	1	3	26	8.8	36
YAKIMA	1061	973.9	1012.9	59	35	47.1	- 3.4	69	29+	24	2	0	10	34	64	1.62	1.15	0.39	12	0	T	T	7.0	W	28*	SSW	30	1	7	22	8.4	
WEST INDIES																																
SAN JUAN P.R.	15	1012.3	1015.3	84	71	77.6	1.0	90	15	65	25+	1	0	69	76	5.21	1.49	2.03	14	1	0.0	0	9.2	NE	27	NE	30	3	14	13	6.7	70
SWAN ISLAND	28	1011.8		85	76	80.6	- 0.9	88	30	72	2+	0	0			0.34	- 0.50	0.11	4	0	0.0	0						14	15	1	3.9	
WEST VIRGINIA																																
CHARLESTON	939	979.3	1015.4	70	43	56.1	0.8	87	21	28	11	0	6	37	50	1.21	- 2.47	0.39	12	5	T	T	7.8	SW	25*	SSW	19	8	8	14	6.1	
ELKINS	1970	945.6	1015.4	63	35	49.3		83	19	21	12	0	16	34	61	2.40		0.64	13	6	T	T	9.7	NW	50*	W	30	2	7	21	7.3	
HUNTINGTON	827	985.4	1015.7	72	46	59.0		90	21	32	6	1	1	38	48	0.86	- 2.70	0.24	11	7	T	T	7.8	NNW	25*	WSW	23+	7	8	15	6.5	
PARKERSBURG U	615			66	42	53.9	- 0.2	85	2	30	12	0	8			1.90	- 1.35	0.60	13	5	T	T	7.8		34	W	23					59
WISCONSIN																																
GREEN BAY	682	991.2	1014.2	61	34	47.5	4.8	80	2	22	10	0	14	35	67	0.98	- 1.48	0.39	7	3	3.9	4	10.2	SW	50	SW	3	9	12	9	5.5	61
LA CROSSE	652	989.2	1014.2	60	38	49.0	2.0	78	16	27	4	0	8	34	61	2.46	- 0.29	0.69	10	3	0.7	T	11.9	S	41*	SSW	3	9	7	14		
MADISON	858	978.7	1014.4	61	35	47.8	3.4	80	2	20	10	0	15	35	63	1.67	- 0.90	0.47	10	5	0.7	T	10.3	S	42	SW	3	9	12	9	5.6	53
MILWAUKEE	672	989.5	1014.9	57	35	45.8	2.2	82	2	25	11	0	11	34	64	2.54	0.01	1.64	11	4	T	T	11.6	SSW	56	SW	3	9	12	9	5.4	64
WYOMING																																
CASPER	5319	832.5	1011.0	55	30	42.4	- 0.7	75	14	22	22	0	22	24	56	2.07	0.38	0.58	13	0	10.1	3	13.8	WSW	38*!	WSW	15	5	9	16	7.0	
CHEYENNE	6126	808.6	1010.8	56	31	43.7	2.1	75	15	20	4	0	20	24	53	1.66	- 0.22	0.90	11	0	3.2	1	14.5	WNW	61	W	15	5	12	13	6.7	79

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

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State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0.3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
LANDER	5563	830.4	1011.0	53	29	41.1	- 2.1	73	14	15	23	0	19	24	56	3.38	0.93	1.70	9	1	28.7	18	7.4	W	42	S	1	5	8	17	6.9	82
SHERIDAN	3942	880.4	1012.6	55	31	42.9	- 0.7	82	14	19	4	0	18	27	59	4.80	2.64	3.24	10	1	6.7	4	10.4	NW	38	W	16	6	8	16	7.2	52

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
	Elevation (ground)	Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	991.4	1016.8	24.4	12.2	18.4	1.7	30.6	22	2.8	15	0	0	10.6	63	170	57	87	6	3	0	0	4.8	S	17.0	NW	29	7	11	12	6.0	59
HUNTSVILLE	184	993.3	1016.6	23.9	11.7	17.9	1.4	31.1	22	3.3	15+	0	0	8.3	58	230	129	108	10	1	0	0	4.9	SSW	14.3*	N	30+	9	10	11	5.8	
MOBILE	64	1013.9	1016.2	27.8	16.1	21.8	2.6	32.2	11	9.4	14	1	0	15.0	71	46	-115	46	1	1	0	0	4.0	S	13.0*	SSW	29	7	10	13	6.2	
MONTGOMERY	59	1008.3	1016.6	26.1	12.8	19.5	1.7	31.1	22	3.9	15	0	0	12.8	67	35	- 90	14	8	4	0	0	3.9	S	15.6	SW	29	7	10	13	6.3	54
ALASKA												B																			
ANCHORAGE	27	1005.8	1010.6	4.4	- 4.4	- 0.1	-2.1	11.1	27	-12.8	18	0	26	- 6.1	69	45	35	14	11	0	701	305	2.8	W	10.3*	SE	8	6	7	17	7.2	51
ANNETTE	34	1006.8	1011.0	10.6	3.3	7.1	1.0	16.7	21+	- 1.7	18+	0	3	1.1	70	174	- 58	44	16	0	76	51	4.2	SE	13.0*	SSE	28	3	9	18	7.3	
BARROW	7	1014.2	1014.8	-11.1	-19.4	-15.1	2.6	- 0.6	6	-30.6	12+	0	30	-17.8	75	35	32	11	14	0	391	711	6.2	NE	13.9*	ESE	8	2	13	15	7.3	
BARTER ISLAND	12	1012.9	1014.6	- 9.4	-18.9	-14.2	3.1	0.0	8	-32.2	2	0	30	-16.1	80	31	27	11	15	0	310	864	6.2	W	23.2*	W	1	7	5	18	7.0	
BETHEL	38	1012.2	1012.4	- 2.2	-11.7	- 7.0	-3.6	6.7	25	-22.8	17	0	30	- 8.9	85	15	0	4	10	0	221	152	5.6	WNW	15.6*	S	7	6	10	14	6.6	
COLD BAY	29	1010.5	1014.4	3.3	- 2.2	0.5	-0.2	8.3	24	- 8.3	16	0	23	- 2.2	83	42	5	17	11	0	97	25	6.8	NW	17.0*	SSE	21+	2	4	24	8.4	
CORDOVA	12	1008.8	1010.4	5.6	- 3.3	1.2	-1.1	12.2	30	-13.9	17	0	23	- 2.2	78	185	76	46	16	0	627	229	2.9	ESE	10.7*	E	27	7	5	18	7.2	
FAIRBANKS	133	994.9	1012.4	2.8	-10.6	- 4.2	-2.7	14.4	29	-26.7	17	0	28	- 9.4	66	12	6	5	6	0	147	762	2.5	SW	7.6*	SW	16+	4	7	19	7.4	
JUNEAU	5	1011.5	1011.7	7.8	- 2.8	2.6	-0.8	13.3	26	-14.4	5	0	22	- 2.2	72	98	25	39	13	0	1176	938	3.3	ESE	17.0*	ESE	17	4	6	20	7.5	47
KING SALMON	13	1011.5	1011.6	1.7	- 7.8	- 3.2	-3.7	9.4	29+	-18.9	15	0	28	- 6.7	77	76	60	36	14	0	198	51	4.9	N	17.0*	SSE	11	8	3	19	7.0	
KOTZEBUE	3	1011.9	1012.3	- 5.6	-14.4	-10.1	0.3	4.4	29	-28.9	10	0	30	-12.2	84	9	2	2	10	0	198	559	7.0	WNW	17.9*	S	8	5	4	21	7.7	
MC GRATH	102	1000.7	1012.0	1.1	-10.6	- 4.7	-2.2	10.0	27+	-26.1	11	0	29	-10.0	65	17	5	7	11	0	460	635	3.1	WNW	9.8	SSW	21	6	5	19	7.4	
NOME	4	1011.5	1012.1	- 3.3	-12.2	- 7.8	-1.8	5.0	29+	-26.7	10	0	30	-10.6	77	7	- 14	2	7	0	76	432	5.9	E	17.0*	E	7	6	9	15	6.9	38
ST. PAUL ISLAND	7	1012.5	1013.4	0.6	- 3.9	- 1.5	0.5	3.9	11+	- 8.9	16+	0	30	- 2.8	87	55	30	16	17	0	399	203	7.9	NW	20.1*	NE	24	0	4	26	9.2	
SHEMYA	37	1011.6	1015.5	3.9	0.0	1.9	-0.1	6.1	25	- 3.9	6	0	12	- 0.6	77	30	- 22	7	17	0	114	T	9.6	WSW	20.6*	S	9	1	6	23	8.8	
YAKUTAT	9	1010.2	1011.1	6.1	- 2.8	1.7	-1.1	11.1	6	-12.8	3	0	19	- 1.1	80	216	33	62	15	0	315	254	2.6	ESE	13.0*	SE	13	6	4	20	7.2	
ARIZONA																																
FLAGSTAFF	2131	787.7	1014.0	12.8	- 4.4	4.2	-2.1	21.7	13	-11.7	22	0	26	- 8.3	45	54	24	35	5	0	300	102	4.5	SSW	13.0*	SSW	21	11	9	10	5.4	
PHOENIX	340	973.8	1012.8	27.8	10.0	18.8	-1.6	37.2	13	5.0	18	6	0	- 2.8	24	8		8	1	0	0	0	3.4	W	12.5*	WNW	17	15	9	6	3.9	88
PRESCOTT	1528	845.1	1013.9	18.3	1.1	9.5	-2.3	27.8	13	- 6.7	22	0	15	- 6.7	37	14	- 4	10	5	0	T	T	5.1	SW	19.2	SW	26	12	11	7	4.4	76
TUCSON	788	924.7	1012.4	26.1	9.4	17.8	-0.8	35.6	13	2.8	3	3	0	- 5.6	22	8	1	8	1	0	0	0	4.4	SSE	15.2	SW	17+	15	11	4	3.8	87
WINSLOW	1487	849.7	1013.8	21.1	1.1	11.1	-2.3	30.0	13	- 7.2	3	0	14	- 8.3	29	8	- 4	8	1	0	0	0	5.9	SW	20.6*	SW	16	16	8	6	4.1	
YUMA	61	1008.3	1013.7	28.3	11.7	20.2	-2.6	36.7	30	6.7	2	8	0	- 2.8	26	T	- 2	T	0	0	0	0	3.1	WNW	13.0	SE	25	19	6	5	3.3	90
ARKANSAS																																
FORT SMITH	137	997.4	1014.3	24.4	11.1	17.9	1.4	32.2	22	4.4	13+	1	0	10.6	64	86	- 22	31	10	6	0	0	4.1	ENE	17.0	W	28	7	6	17	6.8	49
LITTLE ROCK	78	1002.2	1015.4	23.9	12.2	17.9	1.1	30.6	22	4.4	7	0	0	10.6	65	84	- 42	28	9	6	0	0	4.3	ENE	15.6	E	28	6	6	18	6.9	57
TEXARKANA	110		1014.7	25.0	13.9	19.4	1.7	31.1	22	6.1	7	0	0	13.9	75	158	23	67	10	6	0	0	4.7	S								84
CALIFORNIA																																
BAKERSFIELD	151	1000.3	1016.8	20.0	8.3	14.1	-3.1	26.1	30+	2.8	2	0	0	5.0	60	22	1	7	11	0	0	0	3.6	NW	11.6*	WNW	14	6	16	8	5.7	
BISHOP	1252	870.8		18.3	0.0	9.1	-3.8	27.8	30	- 5.6	22	0	16			8	- 3	6	4	0	T	T						13	10	7	4.4	
BLUE CANYON	1609	836.8		5.0	- 1.1	1.8	-5.5	14.4	28	- 6.7	17+	0	20			361	238	69	21	0	1407	940	4.6	SSW	22.4	SSW	6	3	4	23	8.3	
BURBANK	213	990.9	1016.8	19.4	8.3	13.9	-2.3	27.8	29	5.0	21	0	0	5.0	60	38	8	17	8	1	0	0	3.2	S	8.9*	WNW	17+	12	9	9	4.7	
EUREKA U	13	1014.9		13.3	6.7	10.1	-0.2	17.2	3	3.3	20+	0	0			271	203	65	23	0	0	0	3.9	SE#	15.6	SW	6	2	6	22	8.2	55
FRESNO	99	1005.2	1017.1	19.4	7.2	13.3	-2.7	26.7	30	1.1	2	0	0	6.1	67	93	64	24	12	0	0	0	3.1	NW	13.0	W	20	8	10	12	5.9	74
LONG BEACH	10	1016.3	1017.6	20.0	8.9	14.3	-1.2	27.2	29	3.9	2	0	0	7.8	66	29	9	17	8	1	0	0	3.5	W	19.7*	WNW	1	15	8	7	4.5	
LOS ANGELES	30	1013.9	1017.6	18.3	10.0	14.1	-0.3	23.3	5	6.7	21+	0	0	8.3	71	36	9	19	6	0	0	0	4.3	W	14.3*	W	1	14	7	9	4.6	
LOS ANGELES U	95			20.0	10.6	15.3	-1.2	26.7	29	7.2	2	0	0			49	20	20	8	1	0	0	3.1	W#	13.4	W	17+	14	10	6	4.5	75
MT SHASTA R	1080	890.3		9.4	- 0.6	4.5	-4.1	20.6	28	- 8.9	16	0	19			199	128	69	19	1	439	229						3	11	16	7.4	
OAKLAND	1	1017.7	1018.0	16.1	8.3	12.3	-1.4	19.4	29+	3.3	21+	0	0	6.1	68	117	82	30	14	2	0	0	5.1	W	13.0*	SSE	18+	7	11	12	6.3	
POINT ARGUELLO	112	1004.4		15.6	6.7	11.0	-1.1	20.0	13	3.3	23+	0	0			64	40	20	15	0	0	0	3.9		10.7*	NW	4	10	10	10	5.4	
RED BLUFF	104	1003.1	1016.0	17.2	6.1	11.6	-4.2	24.4	30+	0.6	1	0	0	4.4	66	125	78	30	15	3	0	0	5.1	SSE	14.8	SE	14+	6	8	16	7.0	58
SACRAMENTO	5	1016.6	1017.5	17.2	6.7	12.0	-3.5	23.3	29	1.1	21	0	0	7.8	79	90	54	35	13	2	0	0	3.2	SW	15.2	W	14	5	10	15	6.9	63
SACRAMENTO U	7			17.2	7.8	12.4	-3.3	24.4	29	2.2	21	0	0			87	46	35	14		0	0										
SANDBERG R	1377	861.8		10.0	1.1	5.7	-4.8	21.1	29	- 4.4	21	0	16			25	1	11	9	0	178	102	6.3	N	17.4*	NNW	26	8	13	9	5.4	
SAN DIEGO	4	1014.2	1017.5	19.4	10.6	14.8	-1.3	23.3	4	7.2	22	0	0	8.3	66	18	- 2	6	7	0	0	0	4.2	WNW	13.9	W	1	10	15	5	4.4	79
SAN FRANCISCO	2	1017.8	1018.5	15.0	8.3	11.7	-1.5	19.4	12	3.9	2	0	0	7.2	76	94	61	23	16	2	0	0	5.3	W	18.3	SSE	14	5	14	11	6.4	
SAN FRANCISCO U	16			15.0	10.0	12.4	-0.7	19.4	12	5.6	20	0	0			85	49	24	15	1	0	0	4.2	W#	12.1	W	17					69
SANTA CATALINA		960.8		16.1	8.9	12.4		23.9	29	5.0	17	0	0			19		8	7	0	0	0						13	12	5	4.2	
SANTA MARIA	73	1009.9	1018.8	17.2	5.6	11.4	-1.7	23.3	29+	0.6	2	0	0	7.2	77	65	35	22	12	0	0	0	4.4	WNW	13.9*	NW	27	11	9	10	5.0	
STOCKTON	9	1016.1	1017.7	17.2	6.1	11.9		23.9	29	0.6	2	0	0	7.2	76	79		26	15	2	0	0	3.5	W	12.5*	SSE	10	6	9	15	6.6	
COLORADO																																
ALAMOSA	2297	768.0		15.0	- 3.9	5.7	0.3	21.1	14+	-13.9	3	0	25			3	- 14	3	2	0	58	T						12	10	8	5.0	
COLORADO SPRINGS	1882	807.4	1010.8	18.9	2.2	10.6	3.3	25.6	8	- 3.3	23	0	9	- 8.3	29	1	- 33	1	1	0	T	T	5.5	N	21.5*	SW	15	10	12	8	5.0	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

APRIL 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 32.2 °C or above	Temperature: No. of days Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days 25 mm. or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers) Speed	Wind: Fastest mile (1.6 kilometers) Direction	Wind: Fastest mile (1.6 kilometers) Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	833.1	1009.2	18.9	1.1	10.0	1.4	28.3	14	- 2.8	23	0	12	- 6.7	36	1	- 53	1	2	1	5	T	5.5	S	21.0	SW	15	9	14	7	5.3	78
GRAND JUNCTION	1478	855.7	1010.8	17.8	3.3	10.6	-0.7	26.7	14	- 4.4	3	0	7	- 8.9	29	3	- 15	2	4	0	5	T	3.6	SE	19.2	SW	21	6	7	17	7.0	49
PUEBLO	1414	851.5	1008.7	22.2	3.9	13.1	2.7	29.4	8	- 2.8	23	0	4	- 6.7	28	T	- 30	T	0	0	0	0	5.9	WSW	28.6	SW	15	13	9	8	4.6	85
CONNECTICUT																																
BRIDGEPORT	2	1012.0	1012.8	14.4	3.9	9.3	0.4	25.6	18	- 0.6	6	0	2	0.0	57	21	- 75	12	6	1	T	T	7.0	NNW	20.6*	WNW	4	8	10	12	5.7	
HARTFORD	52	1005.4	1011.3	16.1	2.2	9.1	0.3	25.0	20+	- 2.8	1	0	13	- 1.1	55	40	- 55	21	7	1	T	T	4.5	NW	18.3	NW	4	7	13	10	6.0	71
NEW HAVEN	2	1011.9		14.4	3.3	9.1	0.8	25.0	18	- 1.1	1	0	5			52	- 47	42	6	1	T	T	4.5		21.0	NW	4	8	12	10	5.6	68
DELAWARE																																
WILMINGTON	24	1010.1	1013.5	17.8	5.0	11.4	0.3	30.0	3	- 1.7	8	0	2	1.1	53	28	- 56	21	7	3	0	0	5.1	WNW	20.1*	WNW	4	7	10	13	5.8	
DIST.OF COLUMBIA																																
WASHINGTON U				20.6	8.9	14.6	1.9	32.2	19+	2.8	10	2	0			31	- 50	11	8													
WASH NATL AP		1010.0	1014.5	20.6	8.3	14.3	1.2	31.7	2	3.3	10+	0	0	1.1	45	25	- 55	9	6	3	0	0	4.4	NW	23.2	NW	23	11	11	8	5.3	69
FLORIDA																																
APALACHICOLA U	4	1015.1		25.0	17.8	21.2	1.5	28.3	12	10.6	15	0	0			12	- 97	8	3	2	0	0	3.9		13.0	SE	27	15	7	8	4.2	86
DAYTONA BEACH	9	1015.9	1017.7	27.8	16.1	22.0	1.5	33.3	23+	6.7	16	4	0	14.4	65	36	- 40	24	3	3	0	0	4.4	WSW	10.3*	SE	29+	14	11	5	4.3	
FORT MYERS	4	1016.4		29.4	16.1	22.8	0.1	33.3	24	8.9	16	3	0			7	- 60	7	1	1	0	0	3.4		9.4*	WNW	14+	18	12	0	2.9	
JACKSONVILLE	7	1016.3	1017.7	27.8	15.6	21.8	1.4	32.8	23	7.2	15	3	0	13.9	66	44	- 46	26	5	1	0	0	4.3	SW	17.9	NE	5	12	10	8	4.8	85
KEY WEST	2	1015.4	1016.7	27.8	22.2	24.9	0.6	30.6	12	17.8	16	0	0	17.8	67	6	- 57	3	3	0	0	0	5.6	ESE	12.1	NE	1	20	10	0	2.9	86
LAKELAND U	65			28.3	17.2	22.7	0.7	31.7	19	12.2	16+	0	0			1	- 88	1	2	1	0	0	3.6					11	15	4	3.9	78
MIAMI BEACH	3			27.8	21.1	24.4	0.6	32.8	13	15.0	15	1	0			3	- 71	3	1	0	0	0	6.6		13.4	NE	1	20	8	2	3.0	83
MIAMI	2	1015.6	1017.0	28.3	19.4	23.7	0.3	33.3	12	10.6	15	2	0	16.7	68	8	- 90	5	3	1	0	0	5.3	SE	13.0*	NE	1	15	11	4	3.9	
ORLANDO	32	1012.7	1017.4	29.4	16.7	23.1	1.9	33.3	22+	10.6	15	7	0	14.4	65	31	- 56	27	2	3	0	0	4.6	WNW	9.4*	NNW	30+	14	15	1	3.8	
PENSACOLA U	4			25.0	17.8	21.4	1.9	29.4	23	12.2	14+	0	0			57	- 85	36	4	3	0	0	4.4	SSE	10.7	SW	6					78
TALLAHASSEE	18	1014.6	1017.4	27.8	13.3	20.3	0.6	32.2	23	3.9	16+	1	0	13.9	69	43	- 75	24	2	2	0	0	4.6	S	13.0*	S	6	10	8	12	5.2	
TAMPA	6	1016.1	1017.7	27.8	16.7	22.4	0.5	31.7	26	10.0	16	0	0	15.0	68	5	- 67	5	2	2	0	0	5.7	E	13.0*	WNW	7	13	17	0	3.8	74
WEST PALM BEACH	5	1016.4	1017.5	28.3	18.3	23.4	0.1	33.3	12	10.6	15	3	0	16.7	67	5	-105	5	2	2	0	0	5.0	ENE	13.0*	ENE	1	12	14	4	4.3	
GEORGIA																																
ATHENS	245	988.0	1017.1	24.4	11.1	17.5	1.3	30.6	21	3.3	16	0	0	8.9	62	201	89	92	9	5	0	0	3.8	WSW	9.4*	NNW	13+	6	14	10	5.9	
ATLANTA	306	974.8	1016.7	22.8	11.1	17.2	1.1	27.8	22+	3.9	15+	0	0	8.3	61	149	35	80	6	4	0	0	3.5	NW	13.4*	NE	29	7	14	9	5.7	71
AUGUSTA	44	1009.3	1016.2	25.6	11.7	18.4	1.1	32.2	21	1.7	16	1	0	10.0	64	99	9	40	8	1	0	0	4.0	SW	11.2*	WNW	4	6	14	10	6.0	
COLUMBUS	117	1002.3		25.6	11.7	18.7	1.1	30.0	22	3.3	15	0	0			64	- 52	29	7	4	0	0	4.1		13.4*	ENE	6	9	7	14	6.1	
MACON	109	1003.1	1016.8	26.1	12.8	19.6	0.9	31.1	22+	3.9	15	0	0	10.0	61	107	12	58	6	1	0	0	3.8	SW	11.2	N	13	10	10	10	5.5	62
ROME	194	993.9		23.9	8.9	16.4	1.0	30.0	22	- 1.1	15	0	1			202	86	116	9	4	0	0						8	12	10	5.6	
SAVANNAH	15	1014.7	1017.4	25.6	13.3	19.4	0.7	32.8	4	4.4	15	2	0	12.8	70	116	22	57	7	3	0	0	4.7	WSW	17.9	N	12	11	11	8	5.4	72
THOMASVILLE U	86			27.2	15.0	20.9	1.1	31.7	22	7.8	15	0	0			31	- 87	31	1	1	0	0						12	5	13	5.3	
HAWAII																																
HILO	9	1015.9	1016.6	27.2	18.9	23.1	1.1	31.7	2	17.2	26+	0	0	18.9	79	811	509	227	20	0	0	0	4.6	SW	19.2*	SW	2	0	9	21	8.4	37
HONOLULU	2	1015.9	1016.3	27.2	21.1	24.1	0.6	28.9	30	18.9	11+	0	0	18.3	74	227	193	70	17	0	0	0	4.5	ENE	12.5	NE	23	3	8	19	7.7	53
KAHULUI	13	1013.2	1016.0	28.3	20.0	24.0		30.0	18+	17.8	30+	0	0	18.9	75	33		19	13	1	0	0	7.9	ENE	19.2*	ENE	25	3	10	17	7.4	65
LIHUE	35	1011.9	1017.2	27.2	20.6	23.7	1.2	29.4	8	16.7	3	0	0	19.4	79	225	140	66	18	0	0	0	5.4	NE	18.8	E	15	0	9	21	8.3	40
IDAHO																																
BOISE	865	915.8	1012.4	15.0	2.8	9.1	-0.9	27.2	14	- 2.8	2	0	7	- 0.6	55	42	12	11	14	2	43	25	4.5	SE	14.8	W	14	1	8	21	8.2	53
IDAHO FALLS 42NW R	1460			11.1	- 3.3	4.1	-2.1	23.3	14+	-12.2	3	0	25			47	35	27	10				4.5	SSW	17.0A	SW	15					
IDAHO FALLS 46W R	1504	844.2		10.6	- 2.8	3.9	-2.4	21.7	13	-11.1	17	0	25			64	51	37	13	0	302	76	4.1	SW	15.6A	WSW	14					
LEWISTON	431	960.6		15.0	3.9	9.5	-0.9	25.6	14	0.0	19+	0	3			26	- 3	9	12	0	T	T						2	1	27	8.9	
POCATELLO	1355	860.1	1014.0	11.1	0.0	5.5	-2.6	23.3	13	- 5.6	17	0	18	- 2.2	63	84	57	29	16	1	262	76	4.7	SW	25.5	SW	14	2	7	21	8.2	45
ILLINOIS																																
CAIRO U	96	1002.4		21.7	11.7	16.8	1.6	31.1	21	4.4	24	0	0			65	- 38	37	6	2	0	0	4.9	SW#	18.3	SW	29	3	11	16	6.8	62
CHICAGO O HARE	201	989.6	1014.6	16.7	3.9	10.5		27.8	2	- 3.3	12+	0	9	1.7	55	124		59	11	3	T	T	5.3	SSW	15.6*	SW	3	7	13	10	5.8	
CHICAGO MIDWAY	186	992.2	1015.2	17.2	5.6	11.3	1.8	27.8	2	- 1.1	4	0	3	1.7	56	122	44	65	9	7	T	T	5.3	NE	20.6	SW	3	8	12	10	5.7	68
MOLINE	177	992.2	1014.6	18.3	5.0	11.6	1.6	27.2	16+	- 1.7	14+	0	5	3.9	63	108	27	22	8	5	0	0	5.5	SSW	17.4	SW	19	6	14	10	6.2	67
PEORIA	199	992.9	1015.4	18.3	5.0	11.6	1.2	27.8	17	- 1.7	10	0	6	2.8	57	104	3	67	8	6	0	0	5.1	S	17.0	SW	19	5	14	11	6.0	66
ROCKFORD	222	987.1	1014.6	17.2	3.9	10.4	1.6	26.7	2	- 3.3	10	0	7	2.2	60	140	62	77	12	6	T	T	5.1	S	17.0*	WSW	3	8	10	12	5.9	
SPRINGFIELD	179	991.0	1014.4	20.6	6.1	13.2	1.8	31.1	17	- 2.2	24	0	3	2.8	51	57	- 34	18	7	6	T	T	6.0	S	21.9	W	3	7	9	14	6.3	67

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	999.6	1015.7	21.1	7.2	14.3	1.1	29.4	21+	- 1.1	24	0	2	6.1	58	29	- 72	13	7	4	0	0	3.8	NW	15.2	S	19	5	6	19	7.0	64
FORT WAYNE	241	983.7	1015.3	16.1	3.3	9.8	0.7	27.2	2	- 4.4	10	0	13	3.3	66	112	32	67	10	5	T	T	5.0	NW	21.0	NE	17	8	10	12	6.2	56
INDIANAPOLIS	242	985.1	1015.4	18.3	5.6	11.8	1.4	27.2	1	- 2.8	10	0	8	4.4	63	66	- 29	26	8	5	0	0	4.2	N	17.9*	N	22+	6	12	12	6.3	65
SOUTH BEND	234	986.5	1014.8	15.0	3.9	9.6	0.9	26.7	2	- 5.6	10	0	9	2.8	64	61	- 29	25	11	5	13	T	5.1	NNW	14.3*	NNW	30+	7	14	9	5.7	
IOWA																																
BURLINGTON	212	988.5	1014.3	18.9	6.1	12.6	2.1	27.8	16	- 1.7	24	0	1	3.3	57	56	- 31	22	9	6	0	0	5.3	SSW	20.1	SW	3	6	11	13	6.3	66
DES MOINES	289	983.1	1014.3	16.7	5.0	10.9	1.0	25.6	16+	- 2.2	4	0	3	3.3	64	106	42	39	11	10	0	0	5.1	S	21.0	SW	3	9	9	12	6.7	52
DUBUQUE	325	989.0		16.1	3.3	9.7	1.5	25.6	2	- 3.3	10	0	8			109	31	37	11	7	T	T			26.8*	WSW	3	9	7	14	6.2	
SIOUX CITY	334	971.9	1013.2	17.8	4.4	11.1	1.7	28.9	1	- 3.3	4	0	5	2.2	60	28	- 29	7	11	4	T	T	5.4	SE	22.4	W	3	7	5	18	7.1	47
WATERLOO	265	982.0	1014.3	16.7	3.9	10.2	1.4	26.1	16	- 2.2	24	0	9	2.8	63	87	18	35	10	8	0	0	5.5	S	23.2*	WSW	3	8	5	17	6.5	
KANSAS																																
CONCORDIA	448	962.1	1012.2	20.6	6.1	13.2	1.3	30.0	15	- 2.8	4	0	2	4.4	59	50	- 4	19	6	5	0	0	6.2	SSE	22.8	SE	2	10	9	11	5.7	69
DODGE CITY	791	923.8	1011.2	22.8	6.1	14.6	2.6	35.0	15	- 0.6	23	1	3	0.6	47	2	- 45	1	3	2	0	0	5.9	SSE	25.5	S	2	13	6	11	5.0	78
GOODLAND	1111	884.5	1011.4	21.1	1.7	11.2	2.3	32.8	15	- 5.0	3	1	11	- 1.7	48	T	- 40	T	0	0	0	0	6.8	SSE	21.5*	S	1	13	10	7	4.3	
TOPEKA	267	977.7	1013.2	21.1	7.2	14.1	1.7	29.4	16+	0.0	4	0	1	5.0	58	17	- 67	5	9	7	0	0	6.5	S	25.0	S	15	10	8	12	5.8	65
WICHITA	403	963.4	1012.0	22.8	8.9	15.8	2.1	33.3	21	1.1	4	1	0	6.7	57	6	- 53	2	5	7	0	0	5.8	S	21.9	S	15	9	8	13	6.3	65
KENTUCKY																																
COVINGTON	265	983.1	1015.2	18.9	5.6	12.1	0.3	27.8	18+	- 3.9	15+	0	7	3.9	61	51	- 31	25	9	5	0	0	4.3	SSW	15.6*	SW	22	3	16	11	6.4	
LEXINGTON	298	980.1	1016.0	20.0	7.8	14.1	1.6	30.0	21	- 1.1	10	0	1	3.9	53	41	- 62	33	4	4	0	0	4.6	WSW	20.6*	NW	22+	6	9	15	6.6	
LOUISVILLE	144	996.3	1015.5	21.7	8.3	15.0	2.3	30.0	21	- 0.6	10	0	2	5.0	53	47	- 50	37	6	5	0	0	4.1	SSW	16.1	NW	21	7	9	14	6.6	57
LOUISIANA																																
ALEXANDRIA	28	1011.0	1015.7	26.7	14.4	20.6		31.1	10	5.0	8+	0	0	15.0	74	23		20	6	4	0	0	3.7	SSW	10.7	SSW	18+	7	10	13	6.4	
BATON ROUGE	20	1012.8	1016.1	29.4	16.1	22.6	2.7	32.2	29+	8.9	14+	6	0	15.6	69	21	-101	15	2	2	0	0	4.4	S	10.3	S	16	7	11	12	5.8	
LAKE CHARLES	4	1013.9	1015.5	26.7	16.7	21.7	1.8	29.4	30+	7.8	7	0	0	17.2	77	16	- 95	14	2	3	0	0	4.9	S	11.2*	SSW	16	4	14	12	6.6	
NEW ORLEANS	1	1014.0	1016.2	27.8	17.2	22.6	3.2	31.1	10	9.4	8+	0	0	16.7	72	47	- 69	38	3	2	0	0	4.2	S	11.2*	S	29	11	10	9	5.4	
NEW ORLEANS AUDUBON	2	1009.5		28.3	18.9	23.6		30.6	25+	12.2	8	0	0			29		14	3	2	0	0	2.1	SW	6.3	W	6	7	13	10	5.7	60
SHREVEPORT	77	1005.7	1015.2	27.2	15.0	20.9	2.4	32.2	10+	5.6	7	2	0	13.9	68	90	- 26	37	8	7	0	0	5.1	S	13.0	S	16	6	7	17	6.8	54
MAINE																																
CARIBOU	190	984.4	1008.3	6.1	- 2.8	1.8	-0.6	18.9	29	-10.6	5	0	25	- 2.8	73	80	13	22	13	0	277	686	6.0	NW	25.0*	WNW	11	4	4	22	7.9	
PORTLAND	19	1005.8	1009.9	12.2	- 0.6	5.8	-0.1	22.2	20	- 6.7	6+	0	19	- 1.1	62	56	- 39	23	9	1	20	T	4.8	WNW	21.9	W	20	9	7	14	5.9	59
MARYLAND																																
BALTIMORE	45	1009.3	1014.1	19.4	5.0	12.2	-0.1	31.1	3+	- 1.1	6	0	2	1.1	51	55	- 37	39	9	3	0	0	4.7	WNW	25.0	NW	23	12	9	9	5.0	75
BALTIMORE U	4			19.4	8.9	14.3	1.2	31.7	3	3.3	10	0	0			37	- 57	20	9													
FREDERICK	90			18.9	3.9	11.4	0.2	30.6	3	- 2.2	16+	0	7			40	- 53	14	7	4	0	0										
MASSACHUSETTS																																
BLUE HILL OBS	192	985.8		13.9	2.2	8.0	0.4	22.8	20	- 3.9	5	0	8			35	- 67	20	8	0	T	T	7.4	NW	29.1	WNW	4					62
BOSTON	5	1005.4	1010.3	14.4	4.4	9.4	0.6	23.9	20	- 2.2	5	0	2	- 1.1	54	38	- 58	13	7	1	T	T	7.0	NW	23.2	NW	5	10	8	12	5.3	62
NANTUCKET	13	1010.2	1011.0	11.1	2.8	6.9	0.3	16.7	21+	- 3.3	1	0	6	1.1	69	64	- 31	44	9	3	13	T	6.3	WNW	20.1	NW	5	12	7	11	5.1	68
PITTSFIELD	357			12.2	- 1.1	5.7	-0.4	21.1	18	- 5.6	6+	0	21			60	- 38	14	11		127	76										
WORCESTER	301	973.3	1010.2	12.8	1.1	7.2	0.2	22.2	18	- 4.4	5+	0	13	- 2.8	54	48	- 52	18	8	2	3	T	4.7	W	15.6*	NW	4	9	10	11	5.5	
MICHIGAN																																
ALPENA	210	988.1		12.8	- 1.7	5.4	0.7	27.2	17	-10.0	5	0	20			37	- 30	16	6	2	135	51	4.1	NW	19.2	W	3	7	13	10	5.9	70
DETROIT	189	987.5	1014.7	15.6	3.9	9.7	1.3	28.3	2	- 2.8	10	0	5	1.1	57	57	- 19	23	8	3	T	T	5.0	NW	22.8	NW	19	8	10	12	6.3	51
DETROIT M WAYNE CO	193	990.2	1014.8	15.0	2.2	8.6	0.4	28.3	2	- 3.9	15+	0	10	2.2	66	58	- 19	22	9	5	T	T	3.7	WNW				7	10	13	6.2	
DETROIT WILLOW RUN	217	985.8	1014.7	15.0	2.8	8.8	0.1	27.2	2	- 3.9	10+	0	8	1.7	64	67	- 11	28	10	4	8	T	5.5	NW	20.6*	WNW	19	6	11	13	6.3	
ESCANABA U	181	991.5		9.4	0.0	4.6	0.6	22.8	17	- 5.6	4	0	17			29	- 27	18	7	3	T	T	4.7		17.9	N	30+	6	17	7	5.8	58
FLINT	233	986.5	1015.2	14.4	1.7	8.1	0.8	27.8	2	- 6.1	5	0	13	1.1	62	49	- 19	17	9	3	48	25	4.8	SW	17.9*	WSW	3	8	11	11	5.9	
GRAND RAPIDS		989.5	1015.0	15.0	2.8	8.7	1.1	26.1	2	- 3.9	10+	0	12	0.6	58	98	23	47	9	5	104	76	5.2	W	20.1	SW	3	10	8	12	5.5	69
LANSING	260	982.1	1014.5	15.0	1.7	8.3	0.7	27.2	2	- 6.7	5	0	15	0.0	57	50	- 23	13	9	4	41	T	6.4	WNW	27.3	W	3	8	13	9	5.8	58
MARQUETTE U	206	986.8		10.0	0.0	5.1	1.1	22.2	3	- 7.2	4	0	16			61	- 8	24	8	1	18	76	4.0	NW#	20.6	SW	3	6	11	13	6.3	67
MUSKEGON	191	991.5	1014.8	13.9	3.3	8.7	1.9	23.9	28	- 4.4	5	0	8	1.7	64	73	7	59	9	6	86	25	5.3	NW	14.3*	SW	3	12	9	9	5.1	
SAULT STE MARIE	220	991.2	1014.2	9.4	- 1.1	4.2	1.1	21.1	17	- 8.9	5	0	23	- 2.2	69	36	- 19	13	8	1	23	51	5.1	NW	20.6*	SW	3	7	12	11	6.0	63
MINNESOTA																																
DULUTH	435	972.2	1014.3	11.1	- 1.1	5.0	1.9	22.8	15	- 7.8	18	0	21	- 3.3	60	56	- 4	21	11	2	5	T	5.3	E	21.5	SW	16	6	9	15	6.9	51

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							Snow, Sleet				Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s							%
MINNESOTA																																
INTERNATIONAL FALLS	359	972.6	1014.4	11.1	- 1.7	4.7	1.7	24.4	15	-10.0	4	0	22	- 2.2	64	74	34	39	10	4	5	T	4.0	NE	13.0*	WSW	16	4	11	15	6.8	
MINNEAPOLIS	251	980.0	1014.0	15.0	1.7	8.5	1.4	25.0	16	- 5.0	10+	0	16	1.1	62	53	6	20	12	7	140	102	5.2	SE	20.1	SW	3	6	9	15	6.8	57
ROCHESTER	395	966.1	1014.4	13.9	1.7	7.9	0.9	24.4	16	- 3.9	4	0	16	1.7	68	67	11	25	14	5	58	51	6.3	S	17.9*	W	3	7	6	17	6.7	
ST CLOUD	315	974.9		14.4	1.7	7.8	1.8	24.4	2	- 5.6	4	0	17			74	23	15	15	5	99	51						6	7	17	7.1	
MISSISSIPPI																																
JACKSON	93	1003.8	1015.9	25.6	14.4	20.1	2.1	30.6	22	6.1	13	0	0	13.9	71	62	- 53	40	8	3	0	0	3.8	SSW	10.7	N	13	7	6	17	6.5	54
MERIDIAN	89	1002.6	1016.5	26.7	12.8	19.7	1.7	32.2	22	3.3	14	1	0	13.3	71	44	- 92	9	9	4	0	0	3.6	S	11.2*	S	17	7	10	13	6.3	
VICKSBURG U	71	1006.3		24.4	15.0	19.8	1.1	29.4	1	8.9	5	0	0			107	- 18	54	9	4	0	0	3.9		10.7	S	16	6	9	15	6.8	50
MISSOURI																																
COLUMBIA	237	984.9	1013.5	21.7	8.3	14.8	2.2	31.1	22	1.1	24	0	0	5.0	55	55	- 29	27	7	5	T	T	5.7	SE	18.3	W	29	8	13	9	5.9	65
KANSAS CITY	226	978.4	1013.3	21.7	8.9	15.1	2.2	29.4	16+	1.7	4	0	0	4.4	52	20	- 70	10	9	4	0	0	4.2	ENE	24.6	SW	2	9	7	14	5.9	75
ST JOSEPH	247	1013.3		20.0	7.2	13.6	1.6	28.9	1	0.6	4	0	0			27	- 53	16	7	7	0	0	5.9	S	19.7*	WSW	19	12	5	13	5.5	
ST LOUIS	163	994.0	1014.9	21.1	7.8	14.6	1.6	32.2	22	0.6	24	1	0	4.4	53	50	- 44	20	7	4	T	T	5.7	S	16.5	NW	22	5	12	13	6.5	58
ST LOUIS RFC	142			21.7	10.6	15.9	2.3	32.2	22	3.3	10+	1	0			63	- 28	42	7		T	T										
SPRINGFIELD	386	967.1	1014.0	23.3	8.9	16.2	3.1	33.9	21	1.7	30+	1	0	7.2	57	28	- 76	14	7	3	0	0	5.6	SSE	20.1	SW	19+	6	10	14	6.5	60
MONTANA																																
BILLINGS	1087	887.3	1012.3	12.8	1.1	6.9	-0.6	25.6	14	- 5.6	3	0	13	- 1.1	63	60	27	17	10	0	391	76	5.5	NE	18.8	NW	16	4	8	18	7.5	56
GLASGOW	694	937.6		12.2	0.6	6.3	-0.1	27.8	14	- 6.7	9+	0	14			31	5	13	7	0	135	76						3	5	22	8.0	
GREAT FALLS	1116	884.8	1014.0	12.2	0.0	6.1	-0.7	26.1	14	- 7.2	2	0	16	- 2.8	58	31	7	14	9	1	282	127	5.6	SW	16.1	SW	15+	2	9	19	7.8	46
HAVRE	787	922.9		13.3	- 0.6	6.6	0.7	28.3	14	- 7.8	3	0	17			20	- 4	13	7	0	132	25	4.3	E#	20.1	NW	16	4	5	21	7.9	53
HELENA	1187	869.6	1013.3	12.2	- 0.6	5.9	-0.4	25.6	14	- 7.2	2	0	20	- 2.8	58	21	- 1	11	7	1	58	76	4.1	WNW	18.8	W	15	1	6	23	8.5	43
KALISPELL	904	908.1		13.3	- 1.1	6.2	0.6	25.0	14	- 6.7	3	0	19			22	- 4	6	12	1	76	51	3.3					2	5	23	8.4	
MISSOULA	972	898.4	1013.5	13.3	0.0	6.7	0.4	24.4	14	- 5.0	3	0	20	- 2.8	55	17	- 7	4	11	1	38	25	3.7	NNW	14.8	SW	14	0	9	21	8.5	62
NEBRASKA																																
GRAND ISLAND	561	945.8	1012.6	18.3	3.9	11.0	0.4	30.6	1	- 6.1	4	0	6	2.2	60	35	- 23	16	7	4	0	0	5.6	S	17.0*	W	3	6	11	13	6.2	
LINCOLN U	351			18.9	6.7	12.7	1.7	27.8	1	- 1.7	4	0	2			22	- 40	10	9	6	T	T	5.7	S#	23.2	S	15	7	10	13	6.4	55
NORFOLK	471	956.3		17.8	3.9	10.7	1.6	29.4	1	- 6.1	4	0	4			40	- 15	18	9	4	T	T						6	7	17	7.1	
NORTH PLATTE	847	911.6	1010.7	18.9	2.2	10.4	1.7	30.0	15	- 7.8	4	0	10	1.1	57	28	- 23	15	7	5	5	T	6.3	SE	23.2	NW	27+	6	10	14	6.9	69
OMAHA	298	973.2	1013.3	18.9	6.7	12.6	1.7	27.8	1	- 1.1	4	0	2	2.8	57	87	22	52	12	6	0	0	5.6	SSE	17.0	S	15+	4	12	14	6.8	60
OMAHA N OMAHA AP	403	964.8		17.8	5.6	11.6	1.9	27.8	1	- 3.3	4	0	2			62	- 1	28	11	8	0	0						4	12	14	7.0	
SCOTTSBLUFF	1204	874.9	1011.1	16.7	1.7	9.2	1.3	27.8	14	- 6.7	23	0	9	- 1.1	55	26	- 20	8	9	1	30	T	6.7	WNW	19.7*	NW	3	2	14	14	7.0	
VALENTINE	789	920.3		16.1	1.1	8.7	1.1	30.6	1	- 7.8	4	0	17			34	- 17	22	9	3	13	T	5.6	N#	23.2	NW	15	8	6	16	6.7	55
NEVADA																																
ELKO	1547	841.5	1013.8	10.6	- 2.8	3.7	-3.2	22.2	30+	- 8.3	22+	0	24	- 3.9	61	55	34	19	16	1	363	102	3.6	SW	15.6*	S	14	2	9	19	7.8	
ELY	1907	804.9	1012.9	9.4	- 5.0	2.3	-3.6	21.7	13	-20.6	22	0	26	- 5.0	64	54	30	19	14	0	622	178	4.2	SSE	24.1	S	14	6	4	20	7.4	53
LAS VEGAS	659	946.5	1012.7	22.2	7.2	14.7	-3.6	30.0	30	0.6	22	0	0	- 5.6	27	3	- 3	1	2	0	0	0	6.2	SW	17.4*	W	26	17	4	9	4.5	81
RENO	1342	863.2	1014.8	13.9	- 2.8	5.4	-3.2	25.0	30	-10.0	21	0	23	- 2.8	60	21	7	9	9	0	150	51	3.6	WNW	17.0	S	5	4	14	12	6.9	77
WINNEMUCCA	1310	864.9		12.8	- 2.8	4.8	-2.9	24.4	29	-13.3	16	0	23			28	7	7	11	1	170	76	3.7	S	23.2	W	14	4	4	22	7.6	42
NEW HAMPSHIRE																																
CONCORD	103	999.3	1010.3	13.9	- 1.1	6.3	-0.2	22.8	20	- 7.2	1	0	20	- 2.2	59	31	- 53	10	10	1	13	T	4.3	NW	19.7	NW	22	10	10	10	5.3	58
MT WASHINGTON OBS	1909	795.1		- 3.3	-10.0	- 6.7	-1.7	5.0	20+	-22.2	5	0	30			177	27	27	17	4	709	279	16.0	W#	54.5Y	W	5	6	5	19	7.4	30
NEW JERSEY																																
ATLANTIC CITY	18	1011.4	1013.5	17.2	5.6	11.4	0.8	29.4	3	- 1.1	6	0	1	0.6	51	35	- 51	23	8	3	0	0	5.2	NW	15.6*	WNW	4	9	10	11	5.7	66
ATLANTIC CITY U	3			16.1	6.7	11.3	1.4	30.0	3	2.2	8+	0	0			35	- 51	22	8		0	0	5.9		21.9*	WNW	20					
NEWARK	3	1011.5	1012.7	16.7	6.1	11.4	0.7	27.8	18	0.0	5	0	1	- 1.1	46	23	- 66	19	4	2	T	T	5.9	NW	18.8*	WNW	4	8	14	8	5.6	
TRENTON U	17	1005.4	1012.2	17.2	5.6	11.5	0.6	29.4	3	0.0	5	0	1			21	- 60	13	6	2	0	0	5.1	NW#	17.9	NW	4	9	12	9	5.5	71
NEW MEXICO																																
ALBUQUERQUE	1618	845.9	1010.9	22.8	6.1	14.3	1.1	30.0	14	- 0.6	19+	0	2	- 7.2	26	4	- 8	3	3	2	0	0	5.6	S	21.0	SW	1	15	11	4	4.0	81
CLAYTON	1515	841.9		22.2	3.9	13.1	2.7	28.9	8	- 2.2	23+	0	6			6	- 24	6	1	1	0	0						15	6	9	4.1	
RATON	1944	802.2		20.0	0.6	10.3	2.1	26.7	7	- 6.1	6	0	15			0	- 27	0	0		0	0						16	4	10	4.4	
ROSWELL	1103	890.3		27.2	5.6	16.3	2.1	33.9	8	0.0	23	5	1			4	- 14	4	2	2	0	0	4.8		15.6	SW	18	13	8	9	4.6	84
SILVER CITY	1638	834.5		22.2	3.3	12.9		28.9	14	- 2.8	19	0	5			4		4	2	0	0	0						18	6	6	3.2	
NEW YORK																																
ALBANY	84	1008.1	1011.8	13.9	1.1	7.7	-0.2	21.1	20	- 5.0	9+	0	13	- 1.7	55	29	- 41	10	10	2	T	T	4.8	WNW	20.1	W	4	8	10	12	5.9	61

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
BINGHAMTON	485	952.5	1011.7	13.3	1.7	7.6	1.2	26.1	3	- 3.3	10	0	14	- 1.1	57	62	- 13	14	14	7	89	51	5.7	NNW	18.8	W	4	6	8	16	6.7	71
BUFFALO	215	985.8	1014.0	12.8	0.6	6.8	0.7	24.4	29	- 5.6	8	0	16	0.0	65	70	- 6	28	12	4	8	T	5.6	SW	18.8	W	4	6	7	17	6.6	62
NEW YORK U	40	1000.8		17.2	6.7	12.1	1.3	27.2	18	1.1	5	0	0			32	- 55	23	6	1	T	T	4.6	NW#	16.5	NW	4	11	12	7	4.8	71
NEW YORK LA GUARDIA	6	1010.5	1012.3	16.1	6.1	11.2	0.6	26.1	18	0.6	5	0	0	- 0.6	49	41	- 50	24	6	3	T	T	6.0	NW	26.4	W	4	8	15	7	5.4	
ROCHESTER	166	993.9	1013.4	14.4	1.7	7.9	0.6	25.6	3+	- 3.3	9+	0	13	0.6	62	70	2	30	10	3	28	25	5.9	WNW	21.9	W	4	10	10	10	5.6	66
SCHENECTADY	66			13.9	2.2	7.9	0.0	21.1	29	- 3.3	9+	0	10			34	- 39	13	8		T	T						16	11	3	3.2	
SYRACUSE	127	990.2	1012.2	13.3	1.7	7.6	-0.2	26.1	3	- 3.9	5	0	12	- 0.6	60	56	- 22	15	12	4	46	T	6.8	WNW	21.0	NW	4	8	10	12	5.8	64
NORTH CAROLINA																																
ASHEVILLE U	671	937.0		21.1	7.8	14.2	0.9	31.1	3	- 0.6	16	0	1			77	- 4	45	7	1	0	0	3.8	NW#	12.5	NW	23	13	9	8	5.0	71
CAPE HATTERAS R	2	1014.1	1015.0	19.4	10.0	14.7	-0.5	26.7	22	1.7	16	0	0	8.9	69	164	105	142	6	1	0	0	5.3	SW				8	11	11	5.9	67
CHARLOTTE	224	987.6	1015.7	23.9	10.0	17.2	1.4	32.8	23+	1.1	16	3	0	6.7	54	68	- 20	29	6	2	0	0	3.9	SW	12.5	SW	30	8	15	7	5.5	63
GREENSBORO	272	983.6	1015.5	22.2	8.3	15.3	1.2	30.6	23+	0.0	16	0	1	4.4	53	63	- 24	32	8	3	0	0	4.0	SW	16.1	W	23	7	16	7	5.3	65
RALEIGH	132	1001.1	1015.0	22.8	8.9	15.8	0.7	32.2	23	- 0.6	16	1	1	5.0	54	45	- 44	21	7	2	0	0	3.9	SW	12.5*	NNW	4	10	10	10	5.4	66
WILMINGTON	9	1013.0	1015.9	23.9	11.1	17.6	0.7	32.8	23	0.6	16	2	0	9.4	65	31	- 42	13	8	2	0	0	3.5	SW	15.2	NW	13	6	14	10	6.0	70
WINSTON SALEM	295	980.2	1015.3	22.8	10.0	16.2	1.6	30.6	23+	2.8	16	0	0	2.8	44	65	- 27	34	6	3	0	0	4.4	SW	14.3*	SSE	29	9	12	9	5.3	
NORTH DAKOTA																																
BISMARCK	502	952.1	1013.1	12.8	0.0	6.6	0.5	26.7	14	- 7.2	4	0	17	0.0	66	50	19	13	15	3	193	76	4.9	ESE	25.0	SW	16	2	7	21	8.1	56
DEVILS LAKE U	448	959.0		11.1	- 1.1	5.0	0.6	25.6	14	- 8.3	4	0	20			47	18	15	11	2	140	102	4.2	E#	14.8	NE	29	2	12	16	7.5	48
FARGO	274	995.3	1013.2	12.2	0.6	6.4	0.8	26.1	14	-13.3	4	0	14	0.6	69	68	24	49	10	5	152	152	5.6	SSE	25.5	NW	3	2	9	19	7.8	56
WILLISTON U	579	944.6		12.2	- 0.6	5.8	-0.2	26.7	14	- 7.2	2	0	19			59	35	15	10	0	267	127	4.8	NE#	22.4	W	16	2	8	20	7.9	41
OHIO																																
AKRON	369	976.6	1015.1	15.0	3.3	9.2	0.8	26.7	2	- 3.3	10+	0	10	1.1	59	72	- 13	23	9	6	8	T	4.6	NW	16.5*	WSW	19	5	11	14	6.7	
CINCINNATI OBS	232			20.0	7.2	13.7	1.3	30.0	1	- 1.7	10	0	2			60	- 33	24	8	6	0	0	3.3	N#	13.9	SW	19					60
CINCINNATI U	169	992.0		20.6	8.3	14.6	1.8	30.6	18	0.0	10	0	1			66	- 27	31	9	6	0	0										
CLEVELAND	237	986.8	1015.0	15.0	3.3	9.1	1.0	27.2	2	- 3.3	15	0	9	1.7	62	61	- 25	18	11	5	8	T	5.2	WNW	18.8	SW	18	5	13	12	6.2	73
COLUMBUS	247	985.4	1015.7	17.2	4.4	10.6	-0.1	27.8	2	- 3.3	10	0	9	2.8	60	83	- 6	27	9	6	T	T	4.3	N	17.9	WNW	4	6	11	13	6.5	67
COLUMBUS U	221			16.7	6.1	11.6	0.5	27.2	2	- 1.7	10	0	2			88	3	35	7	5	T	T										
DAYTON	304	982.4	1015.3	17.2	5.0	11.1	0.7	27.2	2	- 3.9	10	0	5	2.8	60	78	- 6	32	10	5	T	T	5.0	NW	17.0	W	30	6	12	12	6.1	56
MANSFIELD	395			14.4	3.3	8.8	0.6	25.6	2	- 3.3	11	0	13			58	- 26	18	10	5	23	25						5	10	15	7.0	
SANDUSKY U	185	993.2		15.0	5.0	10.3	1.0	28.3	2	0.0	30+	0	2			59	- 21	14	10	5	T	T	4.6	NW#	25.0	NW	30	13	8	9	4.9	68
TOLEDO	206	989.1	1014.9	15.6	2.2	8.6	0.3	27.8	2	- 6.1	5	0	13	1.7	63	55	- 15	20	10	5	8	T	4.7	WNW	15.6	NW	30	6	14	10	6.3	61
YOUNGSTOWN	359	971.9	1014.9	14.4	2.8	8.8	-0.1	27.2	2	- 3.3	5	0	11	0.6	59	74	- 20	31	11	6	33	25	5.4	NW	19.7*	WSW	19	5	9	16	6.6	
OKLAHOMA																																
OKLAHOMA CITY	390	969.5	1012.7	23.9	12.2	18.2	3.3	32.2	21	6.7	12+	1	0	9.4	61	70	- 9	38	6	5	0	0	6.8	SSE	15.6	SW	24+	9	6	15	6.3	67
TULSA	206	988.6	1013.1	25.0	12.2	18.7	3.4	33.3	21+	4.4	4	3	0	8.9	58	56	- 46	36	4	4	0	0	6.4	S	20.1	SW	18	9	4	17	6.4	56
OREGON																																
ASTORIA	2	1013.6	1013.7	12.8	5.0	8.9	-0.3	20.6	28	- 1.1	1	0	2	5.6	81	146	15	27	23	0	T	T	4.0	WSW	15.6*	SSW	14	0	3	27	9.2	
BURNS U	1265	869.1		10.6	- 1.7	4.4	-3.4	20.0	29	- 9.4	21	0	19			53	34	19	15	0	224	76						2	5	23	8.3	
EUGENE	110	1001.7		13.3	4.4	8.7	-1.8	21.1	28	- 1.1	20	0	2			133	72	24	20	1	T	T	3.6		13.9*	SW	5	0	4	26	8.9	
MEACHAM	1234			7.2	- 1.1	3.1	-1.8	16.7	14+	- 6.7	16+	0	23			110	39	26	20	0	417	152						1	2	27	9.2	
MEDFORD	396	967.8	1015.7	13.3	2.2	7.8	-3.1	22.2	28	- 3.9	20	0	10	2.8	75	57	30	14	20	0	15	T	3.0	WNW	11.2*	SE	11+	2	4	24	8.5	
PENDLETON	452	959.4	1013.5	13.9	3.9	8.9	-1.9	21.1	12	- 0.6	16+	0	2	3.3	71	47	20	10	15	0	25	25	4.3	W	20.6*	W	15	3	4	23	8.3	
PORTLAND	6	1008.8	1014.5	13.3	5.0	9.2	-1.8	21.1	28	0.6	2	0	0	5.0	76	96	43	17	20	0	T	T	3.8	SSW	14.8	SW	14	0	3	27	9.3	22
PORTLAND U	9			14.4	6.1	10.3	-1.6	23.9	28	1.7	2	0	0			120	58	22	22	0	T	T										
ROSEBURG	154	996.6		15.0	3.9	9.4	-1.4	25.6	28	- 1.7	20	0	3			134	85	25	21	0	T	T	2.2	S#	11.2	SW	14	0	6	24	8.7	39
SALEM	59	1007.8	1015.0	13.3	3.9	8.3	-2.3	20.0	28	- 1.1	10+	0	6	4.4	78	103	44	28	21	1	T	T	3.8	S	11.2*	WSW	12	0	2	28	9.1	
SEXTON SUMMIT R	1169	880.5		5.6	- 1.1	2.3	-4.4	17.2	28	- 6.1	20+	0	21			192	145	29	21	0	894	356	4.7	S				0	7	23	9.0	
PACIFIC AREA																																
CANTON ISLAND	3	1008.7	1009.0	31.7	25.6	28.8	0.1	32.8	26+	23.3	28	13	0	23.9	77	43	- 49	16	11	0	0	0	5.5	NE	13.0*	N	28	7	19	4	5.3	
ENIWETOK	5	1009.6	1010.3	30.6	25.0	28.0	0.2	32.2	29	22.8	20	1	0			51	18	15	14	0	0	0	5.7									
TAGUAC GUAM R	110			29.4	22.2	25.8	-0.8	30.6	20+	18.3	30+	0	0			497	420		24	2	0	0	4.3	E#	28.6	SW	30					71
JOHNSTON	2	1012.5	1013.1	27.8	24.4	26.0	0.4	28.9	12+	21.1	6+	0	0	22.2	81	194	136	98	12	1	0	0	6.1	E	17.0	E	16	2	15	13	6.9	66
KOROR R	29	1006.4	1009.1	31.7	24.4	28.0	0.6	32.2	29+	23.3	20+	7	0	24.4	86	86	-178	21	19	3	0	0	2.7	NE	8.9	NE	10	0	1	29	9.5	70
PONAPE R	37	1004.7	1009.2	30.6	23.3	26.9	-0.1	32.8	27	20.6	6	1	0	23.9	86	316	-193	70	24	2	0	0	1.9	NE	8.9	NE	21+	0	3	27	9.2	38
TRUK MOEN ISLAND	2	1009.5	1008.6	30.6	24.4	27.3	0.2	31.7	26+	22.2	25	0	0	23.9	81	188	-125	79	14	7	0	0	2.7	NNE	11.6	NE	21	0	3	27	9.4	41
WAKE	3	1014.3	1013.9	27.2	22.2	24.7	-1.1	29.4	4	20.6	7	0	0	19.4	75	73	25	22	14	0	0	0	7.7	ENE	14.8*	ENE	8	3	13	14	7.2	
YAP R	16	1007.5	1008.2	31.1	24.4	27.6	-0.1	31.7	25+	23.3	12+	0	0	24.4	84	107	- 55	31	18	0	0	0	3.9	NE	10.7	NE	23	0	0	30	9.9	77

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .25 mm. or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	°C.	°C.		C.				C.	%	Mm.	Mm.	Mm.					M.p.s.		M.p.s.							%
PENNSYLVANIA																																
ALLENTOWN	115	999.0	1013.4	17.2	3.3	10.3	0.7	27.8	3	- 2.8	8	0	7	- 1.1	50	30	- 66	20	8	1	5	T	5.9	WNW	26.8*	WNW	4	8	11	11	5.8	
ERIE	223	987.5	1014.2	13.9	2.8	8.2	0.7	26.1	3	- 3.9	5	0	10	1.1	64	75	- 16	27	9	5	3	T	6.1	S	17.9*	W	19	9	6	15	6.1	
HARRISBURG	102	1000.0	1013.8	19.4	5.6	12.4	1.4	30.6	2	- 1.7	6	0	3	0.0	46	39	- 38	19	9	5	T	T	5.0	NW	18.8	NW	20+	6	12	12	6.4	67
PHILADELPHIA	2	1008.9	1013.4	17.8	5.0	11.4	0.3	30.6	3	- 2.2	6	0	2	0.0	49	29	- 38	19	7	2	0	0	4.9	NNW	17.4	NW	4	6	16	8	6.0	71
PHILADELPHIA U	11			18.9	7.8	13.3	1.8	31.7	3	1.7	5	0	0			23		15														
PITTSBURGH	347	984.0	1014.9	16.1	2.8	9.4	0.0	27.8	2	- 3.9	10	0	13	1.1	58	61	- 18	22	12	5	8	0	4.5	NW	15.6*	W	20+	4	10	16	7.0	55
PITTSBURGH U	228			17.2	5.6	11.4	0.2	28.9	2	- 1.7	10	0	1			52	- 34	18	13		T											55
READING U	81	1001.4	1013.6	18.3	6.1	12.1	0.7	30.0	3	0.6	6+	0	0			28	- 59	21	8	1	0	0	6.0	NW*	25.9	W	4	10	13	7	5.3	62
SCRANTON	287	978.7	1012.9	15.6	3.3	9.5	0.9	26.7	3	- 3.3	8	0	6	- 1.7	48	33	- 50	14	9	4	13	T	4.7	NNW	18.8	W	4	7	9	14	6.3	62
WILLIAMSPORT	161	994.6	1013.7	17.2	3.3	10.1	0.4	28.3	3	- 2.2	6	0	6	- 1.1	51	34	- 56	10	12	3	T	T	4.9	WNW	17.9*	W	4	5	12	13	6.5	
RHODE ISLAND																																
BLOCK ISLAND	34	1006.2	1010.3	11.7	3.3	7.4	0.1	19.4	20	- 2.8	1	0	2			29	- 62	20	5	2	13	T						7	13	10	5.7	
PROVIDENCE	17	1004.7	1010.9	15.0	3.3	9.1	0.6	25.6	20	- 1.7	1	0	5	- 1.7	53	41	- 54	27	9	1	T	T	6.1	WNW	19.2*	WNW	4	9	9	12	5.5	63
SOUTH CAROLINA																																
CHARLESTON	12	1014.3	1016.4	25.0	12.2	18.8	0.8	33.3	23	3.9	15	4	0	11.7	68	68	- 5	56	5	1	0	0	4.2	SSW	16.1Y	SW	30	9	12	9	5.6	69
CHARLESTON U	3			23.3	15.6	19.3	0.6	32.2	23	8.9	14	1	0			65	1	56	5		0	0	4.9		12.5	NE	5					
COLUMBIA	66	1003.1	1015.9	25.6	11.7	18.5	0.9	33.3	23+	1.7	16	4	0	8.3	59	106	4	58	8	0	0	0	3.9	SW	13.0*	WNW	23	7	16	7	5.5	62
FLORENCE	45	1009.9	1015.8	25.0	11.7	18.3	0.8	33.9	23+	2.8	16	4	0	8.3	58	56	- 36	27	7	0	0	0	4.1	SW	10.7*	W	23	10	11	9	5.5	
GNVLE SPARTANBURG	292	978.7	1015.6	24.4	11.1	17.8	1.4	32.8	23	3.3	16	3	0	6.1	52	151	51	96	5	1	0	0	4.5	SW	14.3	SW	30	10	12	8	5.2	69
SOUTH DAKOTA																																
HURON	391	965.1	1012.4	16.1	1.7	8.8	1.1	30.0	14	- 6.7	4	0	14	2.2	69	43	- 4	12	13	6	56	T	6.1	SE	21.0	W	3	5	8	17	7.1	51
RAPID CITY	965	897.6	1012.6	13.3	0.6	6.9	0.0	27.2	14	- 5.6	23+	0	12	- 0.6	63	97	54	26	12	1	188	25	5.5	N	23.2	W	16	3	10	17	7.2	53
SIOUX FALLS	433	960.7	1012.7	16.7	2.8	9.7	1.9	30.0	1	- 6.7	4	0	9	2.2	63	32	- 27	14	7	4	58	T	4.8	S	13.9*	SSE	15+	7	4	19	7.1	
TENNESSEE																																
BRISTOL	459	961.2	1015.5	21.1	7.2	14.2	0.8	29.4	21	- 1.1	16	0	1	4.4	53	35	- 45	23	6	3	0	0	3.0	SW	10.7*	SW	17+	6	13	11	6.2	
CHATTANOOGA	204	989.0	1016.6	23.9	11.1	17.3	1.8	31.1	22+	1.7	15	0	0	7.8	57	161	52	59	10	2	0	0	4.1	S	13.9	W	29	10	8	12	5.9	63
KNOXVILLE	290	981.0	1016.6	22.2	10.0	16.0	0.8	30.0	21	1.1	15	0	0	5.6	53	92	- 2	51	9	3	0	0	4.3	SW	13.9	W	30+	9	6	15	6.2	55
MEMPHIS	80	1001.1	1015.8	23.3	12.8	17.9	1.3	29.4	1	5.0	7	0	0	10.6	65	142	25	55	9	6	0	0	4.8	S	12.1	SW	16	8	6	16	6.7	68
MEMPHIS U	83			22.8	13.3	18.1	1.2	29.4	1	7.2	24	0	0			84	- 33	28	10		0	0										
NASHVILLE	176	995.9	1015.9	22.8	10.6	16.4	1.1	31.7	21	1.7	15	0	0	7.8	60	86	- 9	60	7	2	0	0	4.6	S	12.5	NW	23	10	8	12	5.7	61
OAK RIDGE	276	983.1		22.2	8.3	15.3	0.7	31.1	21	0.0	15	0	1			94	- 13	59	7	3	0	0	2.9		13.4Y		19	10	8	12	5.8	
TEXAS																																
ABILENE	536	950.9	1011.3	28.3	13.9	21.3	3.3	37.2	10	6.7	6+	10	0	9.4	53	39	- 19	23	6	3	0	0	5.1	SSE	17.9	NW	28	6	10	14	6.4	67
AMARILLO	1099	885.5	1009.9	25.0	8.3	16.6	3.2	33.9	15	2.2	19+	2	0	- 2.8	36	12	- 22	8	3	2	0	0	7.5	SW	20.1	S	2	13	8	9	5.0	79
AUSTIN	182	991.3	1013.1	28.3	17.2	22.7	2.9	36.7	9	7.8	7	4	0	15.6	68	89	- 1	83	3	3	0	0	4.9	SSE	11.6	SE	28+	3	9	18	7.2	43
BROWNSVILLE	5	1009.7	1012.4	30.6	21.1	25.8	2.6	33.9	11+	14.4	7	6	0	20.6	76	1	- 38	1	2	2	0	0	7.5	SSE	17.4	SE	16	8	15	7	5.3	62
CORPUS CHRISTI	13	1011.6	1012.9	29.4	20.0	24.8	2.7	36.7	9	10.6	7	3	0	19.4	75	8	- 46	8	2	0	0	0	7.3	SSE	21.5	SE	16	5	11	14	6.4	65
DALLAS	147	995.0	1013.4	27.8	16.1	21.8	3.5	37.2	10	8.3	7	6	0	12.8	62	162	60	61	9	6	0	0	6.6	S	18.8	NW	28	4	9	17	7.0	47
DEL RIO U				31.7	17.8	24.4		38.9	10+	8.9	6	14	0			32		30	3	3	0	0										
EL PASO	1194	884.2	1010.3	27.2	11.1	19.2	1.7	33.3	14	5.0	6	2	0	- 6.1	20	T	- 7	T	0	0	0	0	4.9	WSW	23.2	NW	2	15	8	7	4.1	86
FORT WORTH	166	992.5	1013.2	27.2	15.6	21.3	3.1	36.7	10	7.8	7	6	0	12.8	63	157	66	65	8	7	0	0	7.0	S	15.6*	S	15+	6	9	15	6.9	
GALVESTON U	2			24.4	20.6	22.4	2.2	29.4	30	13.3	7+	0	0			9	- 57	8	3	0	0	0	6.3		15.6	SE	17+					69
GALVESTON	2	1012.3	1015.0	25.6	20.6	23.0	2.7	28.9	30	11.7	7	0	0	18.3	78	12	- 64	11	3	1	0	0	5.9	S				2	19	9	6.2	
HOUSTON U	12			28.3	20.0	24.0	3.3	33.3	10+	11.7	7	3	0			41	- 46	22	5		0	0										
HOUSTON	15	1011.2	1014.1	28.9	18.3	23.6	2.5	33.9	10	8.3	7	4	0	18.3	78	23	- 59	18	3	2	0	0	5.6	SSE	12.5*	S	16	4	11	15	7.0	58
LAREDO	152	995.4	1010.8	34.4	20.6	27.5	3.5	41.7	9	11.1	5+	24	0	16.7	57	29	- 13	28	4	4	0	0	5.7	ESE	11.6*	ESE	16+	6	12	12	6.0	
LUBBOCK	988	900.4	1010.9	26.1	10.0	17.9	2.7	32.8	15	3.9	4	2	0	3.3	45	6	- 23	5	3	1	0	0	7.1	WSW	19.7*	WSW	18	8	12	10	5.6	
MIDLAND	870	912.6	1009.9	28.3	13.3	20.8	2.6	35.0	17+	5.6	6+	7	0	2.2	39	24	3	22	3	2	0	0	5.6	WSW	17.0*	S	1	6	13	11	6.1	
PORT ARTHUR	5	1013.0	1014.7	27.8	17.2	22.6	2.7	30.0	30+	7.2	7	0	0	17.8	79	28	- 72	15	5	3	0	0	5.5	S	16.1	S	16	3	13	14	6.7	60
SAN ANGELO	580	944.5	1010.7	30.6	15.6	22.9	3.7	37.2	10	6.7	6	13	0	8.9	49	24	- 27	21	4	3	0	0	4.6	SSE	11.2*	SSE	2	9	8	13	6.2	
SAN ANTONIO	241	987.5	1012.4	30.0	17.2	23.7	3.6	37.2	9	8.9	7	7	0	16.1	68	48	- 24	43	6	1	0	0	4.8	SE	17.0	NE	28	6	7	17	6.7	55
VICTORIA	32	1018.5		29.4	18.9	24.2	3.1	36.7	9	8.9	7	5	0			21	- 45	19	2	2	0	0	5.9		20.6Y		16	6	10	14	6.8	
WACO	152	992.1	1013.2	28.3	16.1	22.2	3.0	38.3	9	7.2	7	5	0	14.4	65	70	- 28	37	8	5	0	0	7.2	SSE	15.6*	NNW	11	5	7	18	7.1	
WICHITA FALLS	303	974.9	1011.7	26.7	13.3	20.1	2.8	34.4	21	6.7	13	8	0	10.6	60	29	- 36	17	6	6	0	0	5.5	S	16.5*	S	28	6	7	17	6.5	
UTAH																																
MILFORD	1533	840.5		15.6	- 1.7	6.7	-2.0	26.1	13	- 7.8	3	0	21			25	7	9	9	0	221	76						3	11	16	7.3	
SALT LAKE CITY	1286	864.7	1013.9	12.8	1.1	6.8	-3.1	24.4	14	- 3.3	22	0	15	- 1.1	61	98	53	17	16	1	363	51	4.4	S	19.2	SW	26+	6	4	20	7.6	34

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

APRIL 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
UTAH	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
WENDOVER	1291	867.3		12.8	1.7	7.2	-3.7	24.4	14	- 5.0	3	0	12			23	10	10	11	2	20	T						6	5	19	7.0	
VERMONT																																
BURLINGTON	101	995.9	1010.7	11.1	- 1.7	4.6	-1.6	20.6	29	- 7.8	6+	0	24	- 1.7	66	64	- 3	21	14	2	33	T	4.4	S	18.8	NW	4	7	9	14	6.4	49
VIRGINIA																																
LYNCHBURG	289	989.3		22.2	8.3	15.1	1.7	31.7	3	0.0	11	1	0			29	- 51	25	6	2	0	0	3.5		13.4	W	23	10	13	7	5.0	69
NORFOLK	8	1013.3	1014.8	21.1	10.0	15.7	1.3	32.8	19+	4.4	16	3	0	5.0	53	33	- 47	19	8	2	0	0	5.9	SW	17.0	W	4	10	11	9	5.2	67
RICHMOND	49	1008.2	1014.6	22.8	7.8	15.1	1.2	33.9	3	1.7	25+	2	0	2.8	48	16	- 64	5	5	3	0	0	4.2	SW	15.2	NW	4	10	12	8	5.2	67
ROANOKE	358	972.8	1015.0	22.2	7.8	14.8	1.2	31.1	3	- 0.6	16	0	1	0.6	42	22	- 57	20	4	2	0	0	5.3	NW	25.9*	NW	20	10	13	7	5.0	
WASHINGTON																																
OLYMPIA	58	1006.8	1014.3	13.3	3.3	8.2	-1.8	19.4	13	- 3.9	2	0	4	4.4	79	105	30	23	24	1	T	T	3.4	SSW	11.6*	S	6	0	0	30	9.4	
SEATTLE TACOMA	122	999.7	1013.7	12.8	5.0	9.1	-0.5	18.3	28+	- 1.1	2	0	1	4.4	77	78	17	17	20	0	0	0	4.0	SSW	12.5*	SSW	6	0	6	24	8.9	
SEATTLE U	4			13.9	7.2	10.4	-0.6	21.1	13	2.2	2	0	0			70	20	11	19	0	0	0			17.9	W	7+					44
SPOKANE	718	943.4	1017.4	12.8	1.7	7.2	-1.3	23.3	14	- 2.8	1	0	9	1.1	69	34	10	8	14	1	13	T	3.9	SW	21.9	SW	14	2	1	27	8.8	57
STAMPEDE PASS R	1206	875.0		3.9	- 1.7	1.3	-1.2	11.7	28	- 6.1	2	0	25			162	20	24	26	0	752	1854						0	2	28	9.7	
TATOOSH ISLAND	31	1010.2	1013.1	11.1	6.7	8.8	0.2	14.4	11	2.8	1	0	0	5.6	81	146	13	30	15	0	0	0	6.5	ENE	20.1	W	15+	1	5	24	8.5	50
WALLA WALLA U	289	976.5		15.0	6.1	10.4	-1.7	22.8	12	1.7	16+	0	0			47	12	15	14	3	0	0	2.5	W#	14.8	W	15	1	3	26	8.8	36
YAKIMA	323	973.9	1012.9	15.6	1.7	8.4	-1.9	20.6	29+	- 4.4	2	0	10	1.1	64	41	29	10	12	0	T	T	3.1	W	12.5*	SSW	30	1	7	22	8.4	
WEST INDIES																																
SAN JUAN P.R.	5	1012.3	1015.3	28.9	21.7	25.3	0.6	32.2	15	18.3	25+	1	0	20.6	76	132	38	52	14	1	0	0	4.1	NE	12.1	NE	30	3	14	13	6.7	70
SWAN ISLAND	9	1011.8		29.4	24.4	27.0	-0.6	31.1	30	22.2	2+	0	0			9	- 13	3	4	0	0	0						14	15	1	3.9	
WEST VIRGINIA																																
CHARLESTON	286	979.3	1015.4	21.1	6.1	13.4	0.4	30.6	21	- 2.2	11	0	6	2.8	50	31	- 63	10	12	5	T	T	3.5	SW	11.2*	SSW	19	8	8	14	6.1	
ELKINS	600	945.6	1015.4	17.2	1.7	9.6		28.3	19	- 6.1	12	0	16	1.1	61	61		16	13	6	T	T	4.3	NW	22.4*	W	30	2	7	21	7.3	
HUNTINGTON	252	985.4	1015.7	22.2	7.8	15.0		32.2	21	0.0	6	1	1	3.3	48	22	- 69	6	11	7	T	T	3.5	NNW	11.2*	WSW	23+	7	8	15	6.5	
PARKERSBURG U	187			18.9	5.6	12.2	-0.1	29.4	2	- 1.1	12	0	8			48	- 34	15	13	5	T	T	3.5		15.2	W	23					59
WISCONSIN																																
GREEN BAY	208	991.2	1014.2	16.1	1.1	8.6	-2.7	26.7	2	- 5.6	10	0	14	1.7	67	25	- 38	10	7	3	99	102	4.6	SW	22.4	SW	3	9	12	9	5.5	61
LA CROSSE	199	989.2	1014.2	15.6	3.3	9.4	1.1	25.6	16	- 2.8	4	0	8	1.1	61	62	- 7	18	10	3	18	T	5.3	S	18.3*	SSW	3	9	7	14		
MADISON	262	978.7	1014.4	16.1	1.7	8.8	1.9	26.7	2	- 6.7	10	0	15	1.7	63	42	- 23	12	10	5	18	T	4.6	S	18.8	SW	3	9	12	9	5.6	53
MILWAUKEE	205	989.5	1014.9	13.9	1.7	7.7	1.2	27.8	2	- 3.9	11	0	11	1.1	64	65		42	11	4	T	T	5.2	SSW	25.0	SW	3	9	12	9	5.4	64
WYOMING																																
CASPER	1621	832.5	1011.0	12.8	- 1.1	5.8	-0.4	23.9	14	- 5.6	22	0	22	- 4.4	56	53	10	15	13	0	257	76	6.2	WSW	17.0*	WSW	15	5	9	16	7.0	
CHEYENNE	1867	808.6	1010.8	13.3	- 0.6	6.5	1.2	23.9	15	- 6.7	4	0	20	- 4.4	53	42	- 6	23	11	0	81	25	6.5	WNW	27.3	W	15	5	12	13	6.7	79
LANDER	1696	830.4	1011.0	11.7	- 1.7	5.1	-1.2	22.8	14	- 9.4	23	0	19	- 4.4	56	86	24	43	9	1	729	457	3.3	W	18.8	S	1	5	8	17	6.9	82
SHERIDAN	1202	880.4	1012.6	12.8	- 0.6	6.1	-0.4	27.8	14	- 7.2	4	0	18	- 2.8	59	122	67	82	10	1	170	102	4.6	NW	17.0	W	16	6	8	16	7.2	52

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.) APRIL 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	84	2980	2757
Huntsville	114	3453	3051
Mobile	6	1886	1659
Montgomery	37	2599	2291
ALASKA			
Anchorage	986	9456	9957
Annette	605	5306	6318
Barrow	1805	17146	17772
Barter Island	1756	16617	17565
Bethel	1363	11591	11988
Cold Bay	955	7938	8501
Cordova	917	8075	8660
Fairbanks	1208	12869	13502
Juneau	846	7529	8093
King Salmon	1158	9786	10262
Kotzebue	1532	13749	14412
McGrath	1233	13139	13377
Nome	1408	12240	12668
St. Paul	1065	9276	9531
Shemya	882	7773	8138
Yakutat	890	7579	8025
ARIZONA			
Flagstaff	757	6266	6412
Phoenix (U)	60	1052	
Phoenix	50	1273	1598
Prescott	472	3915	4189
Tucson	79	1529	1873
Winslow	389	4420	4578
Yuma	28	690	878
ARKANSAS			
Ft. Smith	93	3389	3270
Little Rock	97	3248	3210
Texarkana	47	2631	2533
CALIFORNIA			
Bakersfield	223	2069	2103
Bishop	496	3910	4096
Blue Canyon	887	4666	4989
Burbank	229	1477	1547
Eureka (U)	440	3712	3986
Fresno	266	2452	2543
Long Beach	214	1351	1686
Los Angeles (U)	161	1149	1263
Los Angeles	225	1343	1822
Mt. Shasta (R)	740	5026	5216
Oakland	319	2583	2600
Point Arguello (R)	389	3069	3054
Red Bluff	360	2589	2468
Sacramento (U)	310	2446	2343
Sacramento	333	2727	2430
Sandberg (R)	678	3798	3888
San Diego	180	1258	1326
San Francisco (U)	313	2573	2582
San Francisco	355	2823	2675
Santa Catalina	314		
Santa Maria	365	2609	2569
Stockton	339		
COLORADO			
Alamosa	673	7738	7921
Colorado Springs	415	5407	6089
Denver	442	5522	5643
Grand Junction	411	5498	5474
Pueblo	281	4986	5273
CONNECTICUT			
Bridgeport	484	5857	5382
Hartford	494	6729	5997
Middletown	532	6624	
New Haven	496	5943	5607
DELAWARE			
Wilmington	370	5312	4812
DIST. OF COLUMBIA			
Washington (U)	239	4411	
Washington	245	4551	4150
FLORIDA			
Apalachicola (U)	11	1551	1308
Daytona Beach	15	1093	879
Fort Myers	1	428	442
Jacksonville	9	1495	1239
Key West	0	79	108
Lakeland (U)	0	797	661
Miami	0	246	214
Miami Beach	0	122	141
Orlando	2	833	782
Pensacola (U)	11	1772	1451
Tallahassee	33	1882	1485
Tampa	2	820	683
West Palm Beach	0	337	253
GEORGIA			
Athens	98	3167	2907
Atlanta	100	3355	2936
Augusta	80	2728	2397
Columbus	63	2660	2383
Macon	45	2500	2136
Rome	126	3684	3292
Savannah	44	2207	1819
Thomasville (U)	20	1820	1529
IDAHO			
Boise	498	5096	5485
Idaho Falls 46W (R)	773	7317	7892
IDAHO (Cont'd.)			
Idaho Falls 42NW(R)	766	7603	8180
Lewiston	471	5078	5213
Pocatello	688	6177	6581
ILLINOIS			
Cairo (U)	149	4115	3774
Chicago (Midway)	383	6278	5863
Chicago (O'Hare)	425	6722	
Moline	370	6702	6150
Peoria	367	6473	5809
Rockford	425	6962	6534
Springfield	291	5806	5365
INDIANA			
Evansville	250	5003	4490
Ft. Wayne	457	6511	6012
Indianapolis	352	5998	5483
South Bend	475	6742	6143
IOWA			
Burlington	319	6186	5904
Des Moines	400	6616	6317
Dubuque	458	7301	7038
Sioux City	389	6485	6742
Waterloo	437	7258	6938
KANSAS			
Concordia	282	5274	5207
Dodge City	219	4581	4853
Goodland	378	5447	5863
Topeka	244	5098	5046
Wichita	170	4456	4527
KENTUCKY			
Lexington	268	4972	4580
Louisville	231	4882	4610
LOUISIANA			
Alexandria	43	2426	
Baton Rouge	6	1753	1620
Lake Charles	15	1775	1491
New Orleans (Audubon Park)	2	1325	
New Orleans	6	1768	1475
Shreveport	30	2332	2211
MAINE			
Caribou	884	9441	9116
Greenville (U)	860	9181	
Portland	673	7342	7028
MARYLAND			
Baltimore (U)	247	4481	4046
Baltimore	341	5167	4564
Frederick	379	5591	4948
MASSACHUSETTS			
Blue Hill Obs. (R)	554	6432	6032
Boston	477	5679	5390
Nantucket	611	5618	5476
Pittsfield	675	7572	7147
Worcester	599	6985	6587
MICHIGAN			
Alpena	690	8454	7578
Detroit (City AP)	470	6517	5991
Detroit (M. Wayne Co.)	524	6818	6164
Detroit (Willow Run)	514	6772	5984
Escanaba (U)	736	8340	7866
Flint	550	7319	6659
Grand Rapids	514	6869	6540
Lansing	538	7178	6567
Marquette (U)	708	8277	7748
Muskegon	515	6824	6581
S. Ste. Marie	758	8915	8549
MINNESOTA			
Duluth	711	9221	9267
Internat. Falls	731	9717	9989
Minneapolis	526	7955	8029
Rochester	557	7921	7782
St. Cloud	563	8152	8448
MISSISSIPPI			
Jackson	45	2553	2239
Meridian	50	2760	2289
Vicksburg (U)	43	2392	2041
MISSOURI			
Columbia	224	5075	4913
Kansas City	204	4787	4741
St. Joseph	265	5430	5336
St. Louis (RFC)	194	4639	4397
St. Louis	247	5009	4701
Springfield	167	4529	4450
MONTANA			
Billings	612	6001	6647
Butte	785	8195	
Glasgow	643	7374	8511
Great Falls	655	6382	7007
Havre	632	7099	8170
Helena	665	6924	7553
Kalispell	649	7261	8026
Miles City	620	6780	7353
Missoula	623	7266	7515
NEBRASKA			
Grand Island	400	6427	5967
Lincoln (U)	310	5626	5663
Norfolk	412	6431	6698
North Platte	423	6134	6379
Omaha	314	5863	6024
Omaha N. Omaha AP	364	6214	6490
Scottsbluff	487	6023	6403
Valentine	519	6514	7053
NEVADA			
Elko	787	6508	6839
Ely	861	6601	7052
Las Vegas	208	2377	2634
Reno	691	5488	5600
Tonopah	661	5177	
Winnemucca	725	5915	6245
NEW HAMPSHIRE			
Concord	639	7241	7010
Mt. Washington Obs. (R)	1345	12864	12287
NEW JERSEY			
Atlantic City	375	4969	4664
Atlantic City (U)	377	4806	
Newark	368	5215	4931
Trenton (U)	367	5278	4847
NEW MEXICO			
Albuquerque	219	4229	4222
Clayton	285	4633	4957
Raton	428	5590	5864
Roswell	131	3757	4025
Silver City	288	3579	
NEW YORK			
Albany	571	7129	6591
Binghamton	583	7294	6967
Buffalo	618	6959	6791
New York (U)	337	5095	4735
New York (LaGuardia)	378	5222	4681
Rochester	556	6866	6421
Schenectady	555	6867	
Syracuse	575	6941	6463
NORTH CAROLINA			
Asheville (U)	241	4288	3955
Cape Hatteras (R)	216	2927	2587
Charlotte	136	3611	3103
Greensboro	198	4086	3758
Raleigh	193	3789	3359
Wilmington	135	2836	2347
Winston-Salem	164	3924	3558
NORTH DAKOTA			
Bismarck	628	7805	8550
Devils Lake (U)	716	8862	9382
Fargo	640	8315	8840
Grand Forks CAA	635	8324	
Pembina	662	8615	
Williston (U)	671	7840	8514
OHIO			
Akron	490	6483	6043
Cincinnati (U)	243	4748	
Cincinnati	359	5661	4888
Cincinnati Obs.	288	5179	4679
Cleveland	500	6461	6106
Columbus	424	6204	5259
Columbus (U)	369	5596	
Dayton	395	6013	5409
Mansfield	510	6675	6098
Sandusky (U)	439	6231	5562
Toledo	520	6858	6192
Youngstown	515	6810	5919
OKLAHOMA			
Oklahoma City	101	3652	3794
Tulsa	90	3647	3641
OREGON			
Astoria	502	4385	4635
Burns (U)	744	6122	6414
Eugene	515	4257	4312
Meacham	817	6900	7008
Medford	560	4727	4409
Pendleton	504	4732	4974
Portland (U)	486	3695	3833
Portland	427	4080	4285
Roseburg	473	3961	4101
Salem	531	4458	4279
Sexton Summit (R)	859	5390	5573
PENNSYLVANIA			
Allentown	430	6153	5619
Erie	543	6532	6103
Harrisburg	325	5566	5069
Philadelphia (U)	281	4739	
Philadelphia	375	5400	4986
Pittsburgh (U)	385	5460	4917
Pittsburgh	479	6427	5753
Reading (U)	336	5348	4840
Scranton	475	6590	6191
Williamsport	442	6384	5733
RHODE ISLAND			
Block Island	585	5753	5286
Providence	493	5898	5667
SOUTH CAROLINA			
Charleston (U)	45	2146	1794
Charleston	69	2429	2026
Columbia	86	2818	2484
Florence	101	2851	2387
Greenville-Spartanburg	108		
SOUTH DAKOTA			
Huron	507	7286	7626
Pierre	544	6608	
Rapid City	607	6356	6893
Sioux Falls	467	7036	7491
TENNESSEE			
Bristol	239	4560	4150
Chattanooga	117	3780	3345
Knoxville	176	3893	3511
Memphis (U)	106	3295	2999
Memphis	119	3443	3100
Nashville	170	4060	3538
Oak Ridge	209	4293	3716
TEXAS			
Abilene	51	2496	2624
Amarillo	139	3782	4117
Austin	27	1788	1711
Brownsville	0	690	600
Corpus Christi	0	1136	914
Dallas	29	2359	2357
El Paso	41	2517	2578
Ft. Worth	34	2446	2405
Galveston (U)	5	1354	1235
Galveston	7	1435	1274
Houston (U)	8	1264	1278
Houston	7	1439	1278
Laredo	6	995	797
Lubbock	92	3366	3547
Midland	45	2508	2591
Port Arthur	12	1671	1526
San Angelo	34	2158	2218
San Antonio	17	1594	1549
Victoria	3	1378	1173
Waco	31	2088	2030
Wichita Falls	56	2778	2945
UTAH			
Milford	619	5882	6131
Salt Lake City	614	5759	5555
Wendover	595	5585	5550
VERMONT			
Burlington	731	8315	7378
VIRGINIA			
Lynchburg	217	4451	4088
Norfolk	202	3721	3384
Richmond	218	4096	3858
Roanoke	228	4494	4085
WASHINGTON			
Olympia	536	4923	4752
Seattle (U)	427	3781	4065
Seattle	536	4155	4497
Seattle-Tacoma	496	4549	4767
Spokane	593	6120	6317
Stampede Pass (R)	916	7881	8146
Tatoosh Island (R)	508	4794	4955
Walla Walla	454	4643	
Walla Walla (U)	425	4430	4583
Yakima	531	5446	5652
WEST VIRGINIA			
Charleston	302	5027	4327
Huntington	243	4980	4095
Parkersburg (U)	357	5293	4633
WISCONSIN			
Green Bay	520	7840	7756
La Crosse	475	7381	7275
Madison	508	7695	7359
Milwaukee	570	7420	7128
WYOMING			
Casper	672	6598	6900
Cheyenne	633	6529	6803
Lander	708	6976	7336
Sheridan	656	6657	7164

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

APRIL 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama	7	3	0	21	5	0	0	3	0	0	0	5	0													0	0	5	5
Alaska *																													
Arizona *																													
Arkansas						0	0	5	C	0	0	5	3																
California						0	0	0	5	3	3	4	0																
Colorado										0	1	5	5																
Connecticut										0	0	4	0																
Delaware										0	1	5	4	0	0	5	0												
Florida	1	1	0	0	?	0	0	0	3																				
Georgia	2	1	0	0	4					0	0	5	0	0	0	4	0									0	0	6	4
Hawaii																										2	0	6	6
Idaho											2	5																	
Illinois	7	5	2	110	6	0	0	4	?	0	9	4	0	0	0	4	0												
Indiana	14	4	0	53	6	0	0	3	3	0	0	3	0	1	0	0	0												
Iowa	3	1	0	0	5	0	0	6	0	0	1	6	0	0	1	6	0												
Kansas	4	2			3							3																	
Kentucky	6	3	0	3	5					0	1	5	0	0	0	2	0										1		
Louisiana	2	1	0	0	5	0	0	0	4	0	0	5	0	1	0	0	0												
Maine										0	1	5	0																
Maryland										1	19+	5	5																
Massachusetts										0	6	6	0													0	D1	D3	0
Michigan	2	1	1	1	5	0	0	5	0	0	6	6	0	0	3	4	0									0	0	6	0
Minnesota						0	0	5	0	0	0	4	0																
Mississippi	3	1	8	34	6	0	0	6	4	0	0	5	4	0	0	5	0									0	3	5	0
Missouri	5	3	1	5	5	0	1	6	5	0	1	5	4	1	0	4	0												
Montana *																													
Nebraska	5	1	1	7	5	0	0	4	5	0	0	4	0	0	1	0	0												
Nevada *																													
New Hampshire										1	1	5	0																
New Jersey																										6	N	7	
New Mexico						0	0	5	?																				
New York										3	6	7				4													
North Carolina						0	0	4	5	0	0	5	3	0	0	5	0												
North Dakota																						0	0	5	0				
Ohio	8	1	0	4	6	0	0	4	0																				
Oklahoma	1	1	0	0	0	0	0	4	4	0	0	4	0	0	0	5	0												
Oregon *																													
Pacific Area																										0	?	°6	C
Pennsylvania	1	1	0	0	2					1	1	5	0	0	0	4	0												
Puerto Rico *																													
Rhode Island										0	0	4	0																
South Carolina	1	1	0	0	0																					0	0	4	0
South Dakota *																													
Tennessee	2	1	3	6	5	0	0	0	?	1	1	4	0	0	0	4	0												
Texas	9	4	0	3	5	0	0	4	0	0	4	6	0	0	1	5	0									0	0	5	0
Utah *																													
Vermont										0	0	4	0													0	0	F4	0
U.S. Virgin Is. *																													
Virginia *																													
Washington *																													
West Virginia	1	1	0	0	4																								
Wisconsin						0	0	5	0	0	0	5	0																
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
D Dust Devils.
N Numerous.
F Floods and Floating Ice.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

APRIL 1963

Heavy local flooding occurred from the 14th to 17th on Kauai and Oahu, the northern islands of Hawaii. This flooding was due to torrential rains on the 15th that culminated a 3-week period of nearly continuous rainy weather. From March 25 through April 15, 12.84 inches of rain fell at Honolulu Airport, with only 4 days with no measurable rain. Bucket survey confirmed report of 18-inch rainfall in 8 hours at Hakipuu Mauka, Oahu, on the 15th. This was one of the heaviest storms to hit the northern islands in many years, if not a 100-year storm. The total storm damage was estimated at $2.2 million.

Flooding in continental United States during April was mostly minor.

ATLANTIC SLOPE DRAINAGE

All rivers in Maine began a slow rise early in April with the beginning of snowmelt. Highest stages occurred during the fourth week, following a 5-day period of light precipitation, some of it in the form of snow. River rises did not reach flood proportion, although the Kennebec River did overflow into the lower portion of the Augusta municipal parking lot, which is a common occurrence each spring. Cool weather, immediately following the precipitation, brought river levels down a little by the end of the month. River ice left southern Maine at the beginning of the month and by the end of April only the northernmost stretches were still icebound. Melting of snow was slow, particularly in the northern woods, where it was still a foot and a half deep, with water equivalent of 8 inches at the end of April.

Some local overflow of small streams and brooks occurred in central Vermont and New Hampshire during the first week of April. The Connecticut River rose above flood stage at Hartford and Portland, Conn., on the 3d and continued in flood until the 8th. This rise was due to rain on the 3d and 4th (0.4 to 1.4 inches) supplemented by high stream flow which began during the latter part of March. Normal lowland flooding of meadows and low-lying roads along the Connecticut River occurred during the first half of the month; however, no damage was reported.

The Schroon River, a tributary of the Hudson, rose to above flood stage at Riverbank, N. Y., on the 5th and continued in flood until the 7th. This rise was due to rainfall supplemented by snowmelt. Only lowland flooding occurred and no unusual damage resulted.

The Susquehanna River, which went above flood stage at Conklin, N. Y., on March 26, continued in flood until April 2. This rise was due to snowmelt.

Minor lowland flooding occurred on the Saluda River at Pelzer, S. C., from April 30 to May 2. This flooding was due to rainfall totaling up to 5 inches on the 29th and 30th. Due to dry soil conditions and ample reservoir storage, stream rises were materially restricted.

The minor flooding during the early part of April along the lower Savannah in Georgia was due to heavy rain during the latter part of March. No damages are known to have occurred.

EAST GULF OF MEXICO DRAINAGE

Light to fairly heavy flooding occurred on the Oostanaula and upper Etowah in Georgia and on the upper and middle Coosa and upper Cahaba Rivers in Alabama during the last day of April and continued into May. Most of the crests occurred during May. These floods were due to heavy rainfall which fell during the last 3 days of April. The rainfall during that period averaged from 6 to over 8 inches over northwest Georgia and northeast Alabama.

MISSISSIPPI SYSTEM

Upper Mississippi Basin. --Minor flooding occurred on the South Raccoon River at Redfield, Iowa, towards the end of April due to heavy rains. The rainfall ranged from 2 to 3 inches in central Iowa. Small streams in the area rose to near bankfull stage. No damage was reported from the minor overflow of agricultural land.

Rather heavy to general rains during the last 2 days of March caused rapid rises to above flood stage on the Sangamon River at Riverton, Ill., and on the Meramec River at Pacific, Mo., on April 2. The only damage was that due to the effect of heavy rainfall on the spring crops.

Missouri Basin. --Heavy rains in south-central Montana and northern Wyoming on the 27th and 28th caused local minor flooding on Soap Creek on the 28th. A large culvert was washed out on the new Hardin-Yellowtail Dam Highway and one granary was demolished.

Minor flooding occurred on Fancy Creek at Winkler, Kans., on the 29th. This flooding was due to heavy thundershowers in the Big Blue Basin totaling around 4 inches in the vicinity of Miltonvale, Kans. Negligible loss resulted from the minor overflow.

Ohio Basin. --The Green River at Calhoun, Ky., continued in flood from March 8 to April 2. Damage in the Green River basin was relatively light and limited largely to agricultural lands.

Rainfall averaging less than 1 inch over Indiana with runoff from rains near the end of March produced crests along the White River slightly above flood stage. Little or no damage resulted from the flooding.

Flash flooding occurred on South Chickamauga Creek near Chickamauga, Tenn., from April 29 to May 2. There was also some minor flooding along the Tennessee in Alabama and Kentucky.

The main stem of the Ohio had receded below flood stage as far as Addison, Ky., by the end of March. It receded below flood stage at Tell City, Ind., on April 1. By April 8, the entire reach of the Ohio had receded to within its banks.

Arkansas Basin. --Minor flooding occurred on the Deep Fork at Dewar, Okla., on the 28th and 29th due to rains from the 24th through the 29th.

Lower Mississippi Basin. --Light flooding was occurring in the lowlands along the Mississippi in the beginning of the month. The Mississippi continued falling steadily and was within its banks at all points by the 9th.

WEST GULF OF MEXICO DRAINAGE

The flooding in the upper Sabine in Texas at the end of the month was due to very heavy rains from the 27th to the 29th. Mineola, Tex., reported 6.95 inches during a short period on the evening of the 27th. More than 1 inch fell during the 24-hour period preceding 7 a.m. on the 29th. Minor damage occurred to oil wells that were flooded. The use of pastureland was lost during the overflow.

General rains during the night of the 26-27th which continued through the 28th caused flooding on the Trinity at Dallas, Tex., on the 28th and at Rosser and Trinidad, Tex., on the 29th. This flooding continued into May. The total rainfall during this period ranged from 2 to 6

inches. No appreciable damage resulted from the overflow.

PACIFIC SLOPE DRAINAGE

Sacramento Basin. --This was one of the wettest Aprils of recent years. Precipitation ranged from 200 to 300 percent of normal at most stations, with a few stations receiving 400 percent of normal. A considerable amount of snow was accumulated above the 5,000-foot level in the Sierras during April, a period during which it usually decreases. There were substantial rises on all rivers and streams. Overflow occurred at all the fixed still weirs of the Sacramento River Flood Control project. By month's end, several large reservoirs were spilling, or near that point.

Columbia Basin. --April was a cool, abnormally wet month over most of the Columbia Basin. Much of Oregon, southern Idaho, and the coastal sections received precipitation in excess of 200 percent of average. Several stations including Pocatello, Idaho, Burns, Oreg., and Brookings, Oreg., reported the wettest April of record. Brookings had over 16 inches. The upper Columbia Basin in British Columbia and western Montana was below average with some stations receiving less than 50 percent of average.

Slight rises occurred on the Willamette River and moderate rises occurred in southwest Oregon and northern California streams early in the month and again near the middle of April. Light flooding occurred on the Tualatin at Farmington, Oreg., on the 2d. The upper Columbia began rising slowly during the second half of April due to snowmelt.

FLOOD STAGE DATA

(All dates in April unless otherwise specified)

River and station	Flood stage	Above flood stages -dates From-	To-	Crest * Stage	Date
	Ft.			Ft.	
ATLANTIC SLOPE DRAINAGE					
Connecticut: Hartford, Conn.	16	3	8	19.3	5
Portland, Conn.	9	3	8	11.7	5
Schroon: Riverbank, N. Y.	7	5	7	7.2	6
Susquehanna: Conklin, N. Y.	11	Mar. 26	2	15.75	Mar. 28
Saluda: Pelzer, S. C.	6	30	May 2	8.0	30
				9.5	May 1
Savannah: Millhaven, Ga.	15	1	3	16.5	1
Clyo, Ga.	11	1	12	15.3	1
EAST GULF DRAINAGE					
Oostanaula: Resaca, Ga.	22	30	May 4	# 27.4	May 2
Rome, Ga.	25	30	May 1	# 26.2	May 1
Etowah: Canton, Ga.	17	30	May 1	# 24.5	30
Coosa: Gadsden, Ala.	20	30	May 8	# 25.9	May 1
Childersburg, Ala.	20	May 1	May 1	# 21.2	May 1
Cahaba: Centreville, Ala.	23	30	May 1	# 24.6	30
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
South Racoon: Redfield, Iowa	14			15.2	
Sangamon: Riverton, Ill.	13	2	2	13.15	2
Meramec: Pacific, Mo.	11	2	2	11.2	2
Missouri Basin					
Fancy Creek: Winkler, Kans.	11	29	29	12.3	29
Ohio Basin					
Green: Lock 2, Calhoun, Ky.	23	Mar. 8	2	28.7	Mar. 20-23
White: Spencer, Ind.	14	2	3	15.3	2
Elliston, Ind.	18	2	4	19.7	3
Edwardsport, Ind.	15	2	6	17.5	4
Petersburg, Ind.	16	Mar. 6	1	24.0	Mar. 11-12
				23.5	Mar. 24
		5	6	16.5	2
Hazelton, Ind.	16	Mar. 7	2	25.2	Mar. 13
				23.5	Mar. 26
		6	7		
Saline: Harrisburg, Ill.	13	Mar. 12	7	22.4	Mar. 20
Cumberland: Eddyville, Ky.	50	Mar. 13	1	58.5	Mar. 21-22
Chickamauga Creek: Chickamauga, Tenn.	10	29	May 2	15.95	May 1
Tennessee: Whitesburg, Ala.	560	29	May 3	564.4	30
Florence, Ala.	419	30	May 2	423.1	30
Gilbertsville, Ky.	320	Mar. 7	8	340.3	Mar. 19
Ohio: Tell City, Ind.	38	Mar. 7	1	46.9	Mar. 20
Dam 47, Newburgh, Ind.	38	Mar. 7	5		
Dam 48, Cypress, Ind.	38	Mar. 8	5	47.8	Mar. 22
Mount Vernon, Ind.	35	Mar. 8	6	46.7	Mar. 22-23
Dam 49, Uniontown, Ky.	37	Mar. 9	7	49.7	Mar. 22
Shawneetown, Ill.	33	Mar. 8	8	50.8	Mar. 24
Dam 50, Fords Ferry, Ky.	34	Mar. 7	9		
Dam 51, Golconda, Ill.	40	Mar. 11	6	51.0	Mar. 26
Paducah, Ky.	39	Mar. 12	5	49.9	Mar. 19
Dam 52, Brookport, Ill.	37	Mar. 9	7	51.6	Mar. 19
Dam 53, Grand Chain, Ill.	42	Mar. 9	8	54.9	Mar. 19
Cairo, Ill.	40	Mar. 9	8	51.5	Mar. 20

River and station	Flood stage	Above flood stages -dates From-	To-	Crest * Stage	Date
	Ft.			Ft.	
MISSISSIPPI SYSTEM (Cont'd.)					
Arkansas Basin					
Deep Fork: Dewar, Okla.	18	28	29	19.7	29
Lower Mississippi Basin					
Mississippi: New Madrid, Mo.	34	Mar. 14	7	40.3	Mar. 21-22
					Mar. 26-28
Caruthersville, Mo.	32	Mar. 14	8	39.0	Mar. 26-27
Memphis, Tenn.	34	Mar. 21	6	36.6	Mar. 29-30
WEST GULF DRAINAGE					
Sabine: Mineola, Texas	14	28	1/	17.4	28
Gladewater, Texas	26	29	1/		
Trinity: Dallas, Texas	30	28	29	33.7	29
Rosser, Texas	26	29	May 3		
Trinidad, Texas	28	29	May 7		
PACIFIC SLOPE DRAINAGE					
Sacramento Basin					
Sacramento: Moulton Weir, Calif.	77	12	18	80.2	16
Colusa Weir, Calif.	62	7	24	67.0	16
Tisdale Weir, Calif.	46	Mar. 29	2	47.7	Mar. 30
		7	27	48.8	16
Fremont Weir, Calif.	34	7	27	36.6	16
Columbia Basin					
Tualatin: Farmington, Oreg.	29	2	2	29.5	2

* Provisional
\# Highest Stage Observed
1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

APRIL 1963

ALBANY, N. Y. 1002 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	86	3.0	76	258	2.7
1000	30	103			235	3.7
950	30	521	3.9	55	286	8.5
900	30	959	1.8	55	309	14.6
850	30	1,417	-1.1	57	311	19.8
800	30	1,899	-3.9	53	308	23.3
750	30	2,403	-6.3	49	307	25.1
700	30	2,944	-8.6	46	306	29.0
650	30	3,514	-11.5	42	306	31.9
600	30	4,126	-14.9		304	34.6
550	30	4,777	-18.8		304	36.3
500	30	5,485	-23.4		301	38.3
450	30	6,244	-28.8		297	41.4
400	30	7,082	-34.3		295	43.1
350	30	8,004	-40.5		298	48.8
300	30	9,040	-46.7		297	52.5
250	30	10,235	-51.9		295	54.8
200	30	11,673	-53.5		302	51.5
175	29	12,536	-53.3		300	46.6
150	29	13,529	-53.3		296	43.3
125	28	14,701	-53.9		297	39.8
100	28	16,128	-55.7		295	34.2
80	28	17,545	-56.9		292	30.1
70	28	18,394	-56.8		289	26.4
60	28	19,369	-56.4		289	22.7
50	28	20,529	-55.3		290	20.8
40	28	21,956	-54.2		286	20.4
30	27	23,806	-53.3		285	24.7
25	27	24,982	-52.5		281	29.5
20	21	26,401	-52.0		280	34.0
15	8	28,175	-52.7			
10						
7						
5						

ALBUQUERQUE, N. MEX. 836 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	7.6	39	103	1.6
1000	30	116				
950	30	549				
900	30	1,008				
850	30	1,486				
800	30	1,987	8.1	32	251	7.0
750	30	2,514	4.5	34	259	13.0
700	30	3,074	.2	37	257	18.8
650	30	3,659	-3.7	36	256	27.0
600	30	4,292	-7.4	31	252	34.6
550	30	4,959	-11.4		250	42.0
500	30	5,690	-16.0		250	54.4
450	30	6,469	-21.3		248	52.8
400	30	7,336	-27.3		246	52.3
350	30	8,283	-34.7		247	54.2
300	29	9,340	-42.4		244	62.4
250	29	10,549	-50.7		241	64.3
200	28	11,970	-57.5		245	62.6
175	28	12,811	-58.0		248	63.9
150	27	13,779	-58.8		253	53.4
125	27	14,916	-61.8		255	44.3
100	27	16,286	-64.8		252	34.2
80	25	17,651	-63.9		250	23.7
70	25	18,481	-63.0		258	15.9
60	25	19,424	-60.8		262	10.3
50	25	20,567	-57.6		258	5.4
40	24	21,982	-55.3		250	5.2
30	22	23,835	-51.8		269	3.9
25	20	25,010	-50.3		298	5.8
20	19	26,463	-48.4		268	8.9
15	14	28,344	-45.6		267	22.9
10	5	31,014	-44.5			
7						
5						

AMARILLO, TEXAS 889 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,095	10.6	51	230	6.2
1000	30	100				
950	30	534				
900	30	997				
850	30	1,470	12.8	42	257	14.4
800	30	1,978	11.4	31	260	18.3
750	30	2,511	8.4	29	259	21.4
700	30	3,081	4.6	28	251	25.6
650	30	3,676	.6	27	249	28.2
600	30	4,318	-4.1		247	31.7
550	30	4,992	-9.0		250	35.8
500	30	5,729	-14.3		250	40.0
450	30	6,512	-19.8		252	44.7
400	30	7,385	-26.2	37	252	49.5
350	30	8,335	-33.6	37	255	52.3
300	30	9,398	-41.8		255	59.1
250	30	10,609	-50.7		254	65.5
200	30	12,035	-58.4		253	65.9
175	30	12,872	-59.4		255	67.8
150	29	13,833	-60.5		255	65.7
125	29	14,962	-62.6		255	57.1
100	29	16,330	-64.5		256	56.7
80	26	17,698	-64.7		255	53.0
70	26	18,528	-63.9		253	45.5
60	26	19,469	-60.3		250	32.8
50	25	20,616	-57.2		240	16.5
40	24	22,034	-54.6		238	7.0
30	23	23,887	-51.6		258	2.1
25	23	25,075	-49.9		343	5.4
20	22	26,537	-47.4		349	6.0
15	17	28,449	-45.5		277	9.7
10	6	31,147	-44.0			
7						
5						

ANCHORAGE, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	29	-2.1	70		.0
1000	30	86			341	2.5
950	30	492	-2.2	58	87	2.1
900	30	923	-4.2	58	109	2.9
850	30	1,371	-6.7	60	124	2.9
800	30	1,843	-9.3	57	158	4.5
750	30	2,338	-11.3	57	166	7.2
700	30	2,867	-14.2	59	167	6.0
650	30	3,422	-17.4	59	167	6.4
600	30	4,021	-21.4	56	175	5.8
550	30	4,651	-25.5	53	199	5.1
500	30	5,343	-29.7	49	219	6.2
450	30	6,080	-34.5	44	217	7.6
400	30	6,902	-39.9		200	13.4
350	30	7,803	-45.4		211	15.7
300	30	8,820	-50.2		223	17.3
250	30	10,003	-52.5		251	16.1
200	30	11,445	-52.2		259	14.6
175	30	12,311	-51.0		252	13.2
150	29	13,318	-51.2		256	12.8
125	29	14,501	-51.7		253	11.3
100	29	15,946	-52.3		263	10.3
80	29	17,388	-52.9		272	8.4
70	29	18,250	-53.1		284	9.1
60	29	19,240	-53.9		296	10.3
50	29	20,408	-54.9		314	10.1
40	29	21,831	-56.1		327	11.3
30	28	23,654	-57.5		337	15.0
25	25	24,800	-58.2		340	17.5
20	21	26,237	-58.1		349	18.7
15	13	28,037	-57.9			
10	6	30,683	-53.8			
7						
5						

ANNETTE, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	37	4.9	77	125	3.5
1000	30	94			130	3.9
950	30	504	2.8	68	139	8.5
900	30	947	-.3	71	156	11.5
850	30	1,402	-3.2	70	163	13.6
800	30	1,881	-5.8	63	169	12.2
750	30	2,383	-8.6	58	182	12.0
700	30	2,917	-11.8	54	188	13.2
650	30	3,479	-15.2	49	195	13.6
600	30	4,082	-19.0	46	202	11.1
550	30	4,721	-23.1	43	202	13.0
500	30	5,417	-27.7	43	208	11.9
450	30	6,160	-32.9	43	211	12.0
400	30	6,987	-39.1		199	11.5
350	30	7,890	-45.6		202	9.9
300	30	8,903	-51.4		223	8.0
250	30	10,075	-55.2		281	5.2
200	30	11,499	-53.8		314	9.1
175	28	12,360	-53.3		299	8.4
150	27	13,355	-53.1		298	8.0
125	27	14,529	-53.4		301	6.2
100	26	15,963	-54.7		286	7.2
80	26	17,389	-55.6		300	9.3
70	26	18,242	-56.2		299	10.5
60	26	19,217	-56.9		301	11.3
50	26	20,369	-57.7		305	11.3
40	25	21,770	-59.0		309	12.8
30	22	23,576	-59.6		304	15.5
25	21	24,724	-59.5		303	16.1
20	21	26,123	-58.9		304	15.0
15	19	27,943	-57.8		296	17.9
10	15	30,494	-55.4		293	22.2
7	12	32,781	-51.4		286	25.1
5	8	34,901	-48.1			

ATHENS, GA. 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	11.9	86	279	1.4
1000	30	152				
950	30	585	13.6	69	272	7.2
900	30	1,040	12.1	61	281	11.3
850	30	1,517	10.1	58	283	14.8
800	30	2,020	7.9	53	279	18.3
750	30	2,552	5.6	45	280	21.8
700	30	3,113	2.6	45	283	24.3
650	30	3,705	-.8	45	284	28.8
600	30	4,344	-4.8	44	283	33.8
550	30	5,019	-9.2	47	284	38.1
500	30	5,756	-13.8	45	284	42.9
450	30	6,543	-19.2	43	285	46.8
400	30	7,417	-24.9	38	286	52.5
350	30	8,374	-32.1		287	56.0
300	30	9,444	-40.5		288	64.3
250	30	10,661	-49.7		286	69.8
200	30	12,090	-58.6		290	75.6
175	30	12,927	-59.1		289	72.7
150	30	13,892	-60.4		287	61.8
125	30	15,020	-63.3		288	53.2
100	30	16,383	-65.6		288	39.1
80	30	17,739	-65.6		293	24.1
70	30	18,560	-64.3		296	17.7
60	30	19,503	-61.7		295	15.5
50	30	20,640	-58.3		322	6.6
40	28	22,059	-55.2		33	3.5
30	27	23,906	-52.0		349	5.1
25	27	25,094	-49.9		8	2.7
20	24	26,569	-47.7		6	1.6
15	14	28,467	-45.1		285	15.3
10	7	31,181	-42.1			
7						
5						

BARROW, ALASKA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	-16.7	75	37	1.4
1000	30	113	-15.6	76	33	2.9
950	30	505	-12.5	70	57	3.1
900	30	916	-12.1	62	93	2.5
850	30	1,353	-12.8	56	106	2.9
800	30	1,815	-13.8	49	144	2.3
750	30	2,305	-15.5	45	171	2.9
700	30	2,823	-17.9	43	222	4.5
650	30	3,375	-20.8	44	226	6.6
600	30	3,962	-24.3	48	235	5.8
550	30	4,589	-28.1	49	232	7.2
500	30	5,270	-32.4	51	225	8.5
450	30	6,003	-37.4	47	228	10.3
400	30	6,811	-42.5		232	13.2
350	30	7,702	-47.8		231	13.8
300	30	8,708	-52.3		227	16.5
250	30	9,880	-53.5		233	16.9
200	30	11,327	-50.3		232	13.0
175	30	12,200	-49.4		226	12.2
150	30	13,210	-49.6		234	11.7
125	30	14,402	-50.0		234	8.9
100	29	15,855	-50.6		255	7.2
80	29	17,308	-51.1		267	5.1
70	29	18,178	-51.4		262	4.5
60	29	19,175	-51.9		287	2.7
50	28	20,355	-52.7		335	4.7
40	28	21,792	-53.7		341	8.2
30	28	23,635	-55.1		353	13.2
25	27	24,793	-55.6		2	15.9
20	27	26,213	-56.0		10	19.8
15	27	28,042	-56.2		24	24.5
10	23	30,627	-54.6		34	26.2
7	17	32,950	-49.5		42	27.4
5	15	35,155	-45.8			

BARTER IS., ALASKA 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	15	-15.0	81	241	2.7
1000	29	110	-12.9	79	216	2.1
950	29	503	-11.1	75	227	2.1
900	29	919	-10.1	72	241	3.5
850	29	1,359	-10.6	69	200	4.1
800	29	1,825	-11.5	64	232	3.9
750	29	2,316	-13.1	59	241	6.4
700	29	2,841	-15.8	55	228	9.5
650	29	3,391	-19.1	51	234	9.7
600	29	3,987	-22.7	49	232	12.6
550	29	4,615	-26.6	45	229	14.0
500	29	5,303	-31.5	45	229	16.5
450	28	6,037	-36.2	40	230	16.9
400	28	6,853	-41.5		228	21.8
350	28	7,747	-47.4		235	23.7
300	28	8,754	-52.6		229	29.7
250	28	9,926	-54.0		233	24.9
200	28	11,367	-51.1		227	17.5
175	28	12,236	-50.7		230	16.1
150	27	13,242	-51.1		238	13.4
125	27	14,425	-52.0		221	10.1
100	26	15,873	-52.6		230	7.8
80	26	17,313	-52.9		255	4.9
70	26	18,170	-53.3		276	4.1
60	26	19,164	-53.8		321	4.1
50	26	20,333	-54.5		344	5.2
40	26	21,760	-55.2		4	7.8
30	26	23,591	-56.3		15	12.2
25	25	24,745	-56.7		16	15.0
20	23	26,157	-57.0		29	17.7
15	17	27,980	-56.0		50	13.2
10	9	30,670	-50.0			
7						
5						

BETHEL, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	39	-8.2	88	283	2.1
1000	30	94			301	5.8
950	30	494	-6.3	67	310	2.1
900	30	918	-6.9	61	291	2.9
850	30	1,363	-8.3	55	276	4.1
800	30	1,832	-10.2	54	274	5.6
750	30	2,324	-12.4	51	269	6.2
700	30	2,852	-15.4	48	253	7.4
650	30	3,405	-18.7	46	248	8.9
600	30	4,001	-22.3	45	246	11.3
550	30	4,631	-26.4	43	254	11.7
500	30	5,318	-31.0	42	240	13.4
450	30	6,054	-36.1		237	14.2
400	30	6,867	-41.5		240	18.8
350	30	7,764	-45.8		245	23.5
300	30	8,783	-49.0		254	27.0
250	30	9,974	-50.7		255	23.3
200	30	11,425	-51.1		251	22.9
175	30	12,293	-51.0		252	22.0
150	30	13,298	-50.5		252	21.8
125	30	14,486	-50.7		258	19.4
100	30	15,938	-51.4		254	17.3
80	28	17,384	-51.8		259	15.5
70	28	18,245	-51.7		266	12.0
60	28	19,247	-52.6		268	10.9
50	28	20,422	-53.5		276	10.1
40	24	21,860	-55.1		290	9.7
30	23	23,694	-56.3		302	9.9
25	20	24,853	-57.3		295	10.7
20	14	26,293	-56.9			
15	8	28,121	-56.6			
10						
7						
5						

BISMARCK, N. DAK. 953 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	505	1.8	83	25	2.5
1000	30	110				
950	30	529			91	3.9
900	30	965	3.2	65	358	2.3
850	30	1,428	1.9	64	303	3.3
800	30	1,915	-.6	65	292	5.6
750	30	2,424	-3.3	65	288	7.8
700	30	2,972	-6.0	63	294	8.9
650	30	3,541	-9.3	60	281	12.8
600	30	4,164	-13.0	55	282	14.6
550	30	4,816	-17.3	52	281	16.3
500	30	5,531	-22.1	49	281	15.7
450	30	6,288	-27.9	48	283	18.7
400	30	7,133	-34.2	47	277	21.2
350	30	8,054	-41.5		272	26.6
300	30	9,081	-49.1		273	32.3
250	30	10,262	-54.1		269	37.9
200	30	11,686	-55.4		267	43.1
175	30	12,539	-54.5		264	43.7
150	30	13,526	-54.4		261	41.4
125	30	14,694	-54.6		264	37.9
100	29	16,113	-55.8		264	35.4
80	28	17,532	-56.3		269	31.7
70	28	18,380	-56.3		270	29.1
60	28	19,358	-56.9		267	25.6
50	28	20,511	-57.6		275	27.6
40	27	21,916	-56.9		275	29.0
30	26	23,731	-57.0		273	35.6
25	25	24,879	-56.1		273	39.4
20	23	26,298	-55.5		271	45.1
15	21	28,143	-53.9		272	56.7
10						
7						
5						

BOISE, IDAHO 912 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	868	5.0	67	137	4.1
1000	30	112				
950	30	539				
900	30	980	5.7	61	149	4.5
850	30	1,446	3.4	59	187	3.9
800	30	1,935	.1	60	212	4.9
750	30	2,449	-3.5	61	228	6.0
700	30	2,991	-7.4	62	229	8.2
650	30	3,562	-11.5	62	237	9.9
600	30	4,172	-15.9	57	239	12.6
550	30	4,823	-20.6	55	234	16.1
500	30	5,521	-25.7	52	228	17.3
450	30	6,278	-30.8	47	230	21.6
400	30	7,104	-36.9		231	24.7
350	30	8,016	-43.2		234	27.2
300	30	9,039	-49.6		239	30.5
250	30	10,222	-53.9		240	33.6
200	29	11,641	-56.6		245	33.2
175	29	12,489	-55.7		245	31.9
150	29	13,473	-55.2		244	29.1
125	29	14,637	-55.3		244	29.5
100	29	16,059	-56.0		242	27.8
80	29	17,477	-56.4		240	24.9
70	28	18,330	-56.5		238	24.5
60	28	19,304	-57.0		246	24.1
50	25	20,466	-56.7		244	23.5
40	22	21,881	-56.5		248	23.1
30	16	23,703	-57.1		251	35.2
25	12	24,872	-54.9		257	36.7
20	10	26,317	-54.1			
15	5	28,125	-52.5			
10						
7						
5						

BROWNSVILLE, TEXAS 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	22.1	91	150	8.4
1000	30	106	22.0	88	153	12.6
950	30	548	20.8	78	167	26.6
900	30	1,020	19.8	61	172	28.8
850	30	1,511	18.2	47	178	22.7
800	30	2,029	16.5	38	185	12.2
750	30	2,568	14.1	31	192	6.0
700	30	3,154	10.4	32	224	5.1
650	30	3,758	6.4	36	260	8.0
600	30	4,418	1.3	42	269	12.6
550	30	5,104	-4.1	44	277	15.3
500	30	5,856	-9.5	38	276	16.3
450	30	6,657	-14.8	32	265	18.5
400	30	7,545	-21.1		261	23.9
350	30	8,517	-28.3		262	25.3
300	30	9,602	-37.1		261	29.1
250	30	10,835	-47.3		261	40.6
200	30	12,275	-58.0		261	49.5
175	29	13,110	-61.0		262	49.4
150	29	14,063	-64.0		258	43.9
125	29	15,167	-68.8		260	35.6
100	29	16,485	-73.8		258	24.3
80	28	17,781	-74.0		253	9.7
70	28	18,572	-70.7		245	1.7
60	28	19,491	-65.4		78	4.9
50	28	20,613	-60.9		83	10.5
40	28	22,017	-56.2		83	14.4
30	26	23,863	-52.0		83	18.7
25	25	25,049	-48.9		85	23.7
20	24	26,526	-45.6		86	21.8
15	23	28,460	-41.6		79	20.6
10	22	31,236	-37.0		81	10.5
7	19	33,727	-33.1		55	6.4
5	7	36,106	-29.5			

BUFFALO, N. Y. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	218	2.9	77	213	5.2
1000	30	120				
950	30	539	5.0	64	261	8.9
900	30	978	3.1	61	278	12.8
850	30	1,440	.4	61	283	15.2
800	30	1,923	-2.4	60	280	18.7
750	30	2,436	-4.6	51	290	22.5
700	30	2,975	-7.1	46	288	26.6
650	30	3,549	-10.3	41	291	31.3
600	30	4,162	-13.7		294	34.2
550	30	4,821	-17.7		294	37.1
500	30	5,526	-22.3		294	42.0
450	30	6,288	-27.6		292	44.7
400	30	7,129	-33.4		291	50.3
350	30	8,055	-39.8		288	51.7
300	30	9,093	-46.7		289	56.9
250	30	10,289	-51.8		288	62.4
200	30	11,726	-53.8		295	64.7
175	30	12,585	-53.8		293	58.9
150	30	13,576	-53.4		292	52.5
125	30	14,747	-54.7		294	45.3
100	29	16,174	-56.2		293	35.8
80	29	17,588	-57.6		291	30.9
70	29	18,442	-57.4		292	24.1
60	29	19,408	-56.6		295	20.8
50	29	20,569	-55.3		294	18.7
40	27	22,002	-54.9		289	16.9
30	25	23,839	-53.0		279	19.6
25	25	25,018	-52.1		282	26.8
20	25	26,468	-50.7		277	27.2
15	20	28,336	-50.2		283	34.6
10						
7						
5						

BURRWOOD, LA. 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	19.7	89	176	3.3
1000	30	140	20.3	81	171	5.2
950	30	581	18.3	69	191	8.5
900	30	1,044	16.3	59	188	8.2
850	30	1,528	14.7	44	207	7.0
800	30	2,039	13.0	34	239	7.0
750	30	2,578	10.7	24	267	8.9
700	30	3,150	7.7	26	273	12.2
650	30	3,754	3.8	29	282	14.0
600	30	4,401	-.5		285	18.3
550	30	5,088	-5.1		285	20.4
500	30	5,833	-10.1	31	285	21.6
450	30	6,637	-15.5		282	27.6
400	30	7,516	-21.9		276	29.9
350	30	8,484	-29.2		277	34.4
300	30	9,566	-37.7		281	39.2
250	30	10,796	-47.5		283	42.7
200	30	12,233	-57.8		282	50.3
175	30	13,068	-60.2		278	53.2
150	30	14,026	-62.4		277	50.7
125	29	15,137	-66.6		276	42.4
100	29	16,470	-70.7		274	30.1
80	28	17,787	-70.6		288	17.1
70	28	18,599	-67.4		307	9.1
60	28	19,522	-63.5		10	4.7
50	28	20,654	-58.8		78	6.8
40	28	22,068	-54.7		73	9.7
30	28	23,923	-50.5		67	15.3
25	27	25,118	-47.8		76	17.1
20	26	26,599	-44.9		77	16.1
15	24	28,536	-40.8		77	8.4
10	22	31,318	-36.5		325	2.5
7	17	33,811	-33.1		296	17.7
5	8	36,177	-27.4			

CANTON IS., PACIFIC AREA 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	27.1	82	41	9.9
1000	30	89	26.5	82	51	10.3
950	30	540	23.2	82	77	13.4
900	30	1,013	20.3	79	81	14.4
850	30	1,506	17.6	72	87	13.6
800	30	2,023	15.3	61	92	12.2
750	30	2,564	12.7	56	89	12.2
700	30	3,147	9.7	54	88	11.1
650	30	3,756	6.4	45	88	10.9
600	30	4,412	2.6	39	87	10.7
550	30	5,107	-1.6	33	90	8.4
500	30	5,864	-6.1	36	104	6.0
450	30	6,679	-10.7		130	4.5
400	30	7,581	-16.0		181	2.7
350	30	8,572	-23.1		211	3.7
300	30	9,683	-31.9		204	6.2
250	30	10,944	-42.0		217	8.7
200	30	12,416	-54.1		236	12.0
175	30	13,259	-60.9		249	14.6
150	30	14,200	-68.3		268	16.5
125	30	15,272	-76.1		270	14.6
100	30	16,537	-82.1		250	13.0
80	29	17,791	-78.8		259	9.9
70	29	18,560	-74.2		275	3.9
60	29	19,463	-71.6		94	11.3
50	29	20,552	-67.3		90	35.0
40	28	21,921	-60.9		89	52.7
30	28	23,738	-54.3		90	64.5
25	28	24,916	-50.8		90	66.8
20	28	26,381	-46.5		91	66.6
15	26	28,318	-41.4		89	15.3
10	26	31,084	-38.3		274	16.9
7	23	33,571	-35.5		260	10.3
5	20	35,918	-32.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1963

Standard pressure surface (mb)	CAPE HATTERAS, N. C. 1014 MB						CARIBOU, ME. 986 MB						CHARLESTON, S. C. 1015 MB						COLD BAY, ALASKA 1011 MB						COLUMBIA, MO. 986 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	4	13.3	76	321	3.1	30	191	- 1.0	81	336	5.6	30	13	13.7	86	287	1.7	30	30	- .6	87	281	4.1	30	238	10.1	70	148	2.5
1000	30	125	14.2	66	299	7.0	30	73					30	143	15.6	77	248	3.1	30	116			296	6.6	30	115					
950	30	555	13.1	58	287	11.7	30	483	- 1.4	68	336	6.8	30	577	15.2	61	265	7.0	30	524	- 2.7	71	276	9.1	30	544	11.2	58	191	5.4
900	30	1,009	10.0	56	292	13.2	30	912	- 3.2	65	350	8.5	30	1,036	13.2	53	270	8.4	30	953	- 4.1	66	268	11.5	30	994	9.5	57	248	9.3
850	30	1,482	7.4	52	288	16.3	30	1,362	- 5.1	64	330	10.1	30	1,515	10.8	50	271	10.7	30	1,402	- 6.0	63	268	12.6	30	1,467	7.6	56	268	13.2
800	30	1,979	5.0	47	284	20.2	30	1,838	- 6.4	64	328	12.8	30	2,018	8.0	48	276	14.6	30	1,876	- 8.2	63	264	10.7	30	1,965	5.7	51	274	18.3
750	30	2,504	2.1	45	284	23.5	30	2,342	- 8.2	60	332	14.0	30	2,549	5.0	51	278	17.9	30	2,376	-10.2	55	264	13.4	30	2,489	3.0	44	272	21.8
700	30	3,057	- 1.0	43	289	28.6	30	2,874	-11.0	59	321	15.0	30	3,109	2.2	42	284	22.7	30	2,905	-12.5	48	258	18.5	30	3,048	.0	40	273	27.0
650	30	3,643	- 4.1	37	287	29.9	30	3,440	-13.5	53	318	16.3	30	3,701	- 1.1	41	287	27.8	30	3,464	-15.3	44	258	22.5	30	3,634	- 3.6	38	277	30.9
600	30	4,273	- 7.6	37	286	38.5	30	4,047	-16.6	46	318	17.1	30	4,339	- 4.7	37	289	34.6	30	4,069	-18.6	42	256	25.1	30	4,266	- 7.7	40	275	35.9
550	30	4,939	-11.8	37	282	41.4	30	4,694	-20.3	43	319	18.3	30	5,012	- 9.1	38	289	37.7	30	4,710	-22.3	40	270	19.4	30	4,930	-12.0	42	273	41.6
500	30	5,670	-16.2	38	285	49.0	30	5,397	-24.5	43	295	16.5	30	5,750	-13.8	39	290	41.8	30	5,408	-26.2	40	273	25.8	30	5,660	-16.8	40	274	48.8
450	30	6,446	-21.8	39	287	53.8	30	6,152	-29.8	39	307	16.3	30	6,538	-18.7	37	289	48.0	30	6,157	-31.3		253	24.5	30	6,435	-22.2		277	52.1
400	30	7,313	-27.6	38	288	59.1	30	6,988	-35.5	37	305	18.3	30	7,414	-24.8	35	289	50.3	30	6,989	-37.0		250	27.4	30	7,300	-28.3		277	58.3
350	30	8,260	-34.2	35	289	61.8	30	7,905	-41.6		296	21.2	30	8,372	-31.6		292	55.8	30	7,901	-42.8		247	32.3	30	8,245	-34.8		278	62.8
300	30	9,323	-41.5		291	68.4	30	8,934	-48.8		294	25.3	30	9,445	-39.9		291	64.5	30	8,926	-48.8		247	28.2	30	9,303	-42.8		275	72.3
250	30	10,438	-49.9		290	77.5	30	10,118	-52.6		300	29.0	30	10,685	-49.5		291	62.8	30	10,110	-53.4		261	22.0	30	10,509	-51.5		276	79.9
200	30	11,971	-56.8		296	77.9	30	11,560	-51.9		298	32.4	30	12,093	-59.0		294	70.9	30	11,542	-54.3		257	23.9	30	11,932	-58.1		274	81.2
175	30	12,817	-57.3		294	69.8	30	12,428	-51.0		296	29.9	30	12,928	-59.8		293	63.9	29	12,407	-53.1		261	25.6	30	12,772	-58.2		275	78.9
150	29	13,797	-57.5		291	69.6	30	13,431	-50.6		293	31.3	30	13,890	-60.9		290	56.5	29	13,401	-52.8		251	21.0	30	13,741	-58.7		278	66.8
125	29	14,943	-59.1		291	55.6	30	14,617	-51.1		290	26.6	30	15,017	-63.8		287	52.3	28	14,579	-52.8		264	18.8	30	14,882	-60.1		274	56.0
100	29	16,335	-61.7		293	39.6	30	16,063	-52.6		283	23.1	30	16,379	-65.7		289	36.3	28	16,017	-53.2		258	17.3	30	16,270	-61.5		277	41.0
80	29	17,714	-61.9		295	27.8	30	17,499	-54.1		279	22.0	30	17,734	-65.5		301	21.0	27	17,456	-53.8		263	10.5	30	17,652	-62.4		285	29.0
70	27	18,551	-61.0		303	21.4	30	18,361	-54.0		282	23.5	30	18,558	-64.8		301	17.7	27	18,317	-54.1		273	8.2	30	18,480	-61.2		287	23.9
60	26	19,501	-58.9		308	8.9	30	19,345	-54.3		277	21.8	29	19,495	-62.1		314	12.4	27	19,301	-54.4		285	5.6	30	19,440	-59.4		302	15.9
50	26	20,652	-56.5		339	3.9	28	20,518	-53.6		271	21.8	29	20,637	-57.8		8	4.7	27	20,465	-55.0		308	6.8	29	20,588	-57.4		309	15.7
40	22	22,077	-53.7		10	5.1	26	21,956	-53.7		276	22.7	28	22,060	-54.5		43	4.1	27	21,888	-55.9		341	9.3	28	22,004	-55.2		300	14.8
30	22	23,944	-49.8		9	4.5	25	23,818	-51.8		263	24.3	28	23,919	-50.7		55	5.6	27	23,713	-56.9		339	8.2	26	23,851	-53.1		288	18.8
25	21	25,143	-48.1		354	3.3	25	25,001	-51.5		259	25.5	27	25,115	-48.8		29	4.3	26	24,864	-57.2		332	9.3	24	25,038	-52.0		288	22.9
20	18	26,629	-46.0		294	6.0	25	26,451	-50.8		254	30.5	24	26,593	-46.0		54	1.9	26	26,273	-57.6		342	15.7	21	26,478	-50.7		291	29.1
15	16	28,560	-43.1		259	11.3	23	28,328	-48.5		259	35.4	15	28,515	-43.9		215	4.5	24	28,101	-57.1		352	17.3	16	28,355	-48.0		284	38.5
10	16	31,316	-39.1		264	32.1	21	30,997	-44.1		253	41.2							22	30,699	-54.5		357	22.3	7	31,084	-43.6			
7	12	33,800	-35.0		268	33.8	20	33,652	-36.7		255	43.3							16	33,043	-50.4		337	22.5						
5	8	36,162	-29.7				16	35,797	-31.6										10	35,310	-46.1									

Standard pressure surface (mb)	DAYTON, OHIO 980 MB						DEL RIO, TEXAS 978 MB						DENVER, COLO. 834 MB						DODGE CITY, KANS. 921 MB						EL PASO, TEXAS 881 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	297	6.6	76	282	1.6	30	314	19.0	75	102	5.4	29	1,611	3.5	52	205	3.5	30	792	7.9	68	189	2.3	30	1,193	13.6	31	313	4.5
1000	30	128					30	117					29	109					30	106					30	103				
950	30	554	8.0	57	246	5.6	30	562	19.0	71	122	12.4	29	535					30	532					30	543				
900	30	997	6.2	55	271	11.7	30	1,024	18.5	66	161	13.2	29	985					30	986	10.7	53	186	6.8	30	1,010				
850	30	1,464	3.5	58	285	17.5	30	1,515	18.0	49	202	10.9	29	1,455					30	1,463	11.3	42	231	12.6	30	1,494	14.5	25	296	7.2
800	30	1,955	1.6	48	287	20.2	30	2,032	15.7	43	222	10.3	29	1,952	5.8	44	246	5.6	30	1,968	9.7	33	251	16.3	30	2,003	11.6	27	258	13.0
750	30	2,474	- .7	44	289	23.9	30	2,575	12.4	36	240	11.5	29	2,476	2.6	41	262	9.9	30	2,497	6.3	35	253	20.0	30	2,532	8.3	25	251	20.6
700	30	3,022	- 3.3	39	288	29.0	30	3,151	8.3	34	250	13.6	29	3,032	- 1.3	40	264	13.6	30	3,063	2.5	36	254	22.0	30	3,106	4.6		248	25.5
650	30	3,602	- 6.6	38	285	32.1	30	3,752	3.6	36	254	15.5	29	3,617	- 5.7	39	267	20.0	30	3,652	- 1.6	34	251	26.6	30	3,697	.5		245	28.4
600	30	4,227	-10.5	38	283	34.8	30	4,402	- 1.3	39	246	18.7	29	4,241	-10.2	42	265	25.3	30	4,291	- 6.1	31	250	30.3	30	4,343	- 3.8		241	34.2
550	30	4,889	-14.7	36	282	38.1	30	5,082	- 6.3	40	245	23.7	29	4,899	-14.7	39	264	30.1	30	4,958	-10.7		250	35.8	30	5,011	- 8.4		241	38.9
500	30	5,607	-19.3		283	42.9	30	5,829	-11.1	35	246	30.9	29	5,621	-19.4	35	258	34.6	30	5,693	-15.6		252	42.7	30	5,757	-13.7		243	41.6
450	30	6,376	-24.7		282	51.1	30	6,624	-16.9	38	250	31.9	29	6,390	-24.6		256	39.8	30	6,470	-21.5		248	48.8	30	6,540	-19.5		244	45.3
400	30	7,231	-30.5		289	56.3	30	7,503	-23.0	34	252	36.5	29	7,245	-30.6		252	44.1	30	7,338	-27.9		254	54.2	30	7,416	-25.7		243	48.4
350	30	8,168	-36.8		287	64.9	30	8,468	-30.2		251	41.6	29	8,180	-37.5		254	51.1	30	8,284	-34.5		255	62.4	30	8,370	-32.9		244	55.4
300	30	9,219	-43.7		286	75.4	30	9,545	-38.8		253	45.5	29	9,227	-44.8		253	60.8	30	9,344	-42.5		256	70.1	30	9,438	-40.9		242	63.7
250	30	10,424	-51.4		285	78.7	30	10,770	-48.9		252	52.7	29	10,427	-52.3		252	69.4	29	10,555	-50.8		257	74.8	30	10,654	-50.2		244	72.1
200	30	11,854	-56.1		290	75.2	30	12,199	-59.8		251	58.3	29	11,851	-57.2		252	67.6	29	11,983	-58.2		259	74.6	30	12,081	-59.2		244	79.3
175	30	12,701	-56.7		292	68.0	29	13,028	-61.2		249	61.4	29	12,693	-58.0		252	65.9	29	12,821	-59.4		261	72.3	30	12,913	-61.1		245	75.8
150	30	13,676	-57.3		290	61.2	29	13,980	-63.6		253	56.7	29	13,665	-57.7		252	65.5	29	13,786	-59.3		259	67.6	30	13,870	-61.6		245	70.7
125	30	14,826	-58.0		292	48.0	29	15,090	-67.0		252	47.2	29	14,813	-58.1		255	49.5	29	14,924	-60.7		261	52.3	30	14,995	-64.1		246	57.9
100	30	16,227	-59.5		294	38.3	28	16,424	-70.5		250	34.6	28	16,218	-59.8		252	39.1	29	16,307	-62.2		257	45.3	30	16,354	-66.4		249	37.5
80	30	17,618	-60.6		297	33.6	25	17,738	-71.9		251	17.1	28	17,615	-59.8		255	25.1	28	17,582	-62.7		259	27.8	29	17,696	-69.5		246	28.6
70	30	18,458	-59.7		294	29.5	25	18,537	-68.4		248	10.5	28	18,454	-60.1		258	13.6	28	18,516	-62.3		268	19.2	29	18,505	-67.5		245	20.4
60	30	19,417	-58.5		297	21.2	25	19,463	-64.6		218	4.3	28	19,413	-59.0		263	9.9	27	19,465	-58.7		269	12.2	29	19,435	-62.7		250	11.3
50	30	20,568	-57.1		296	20.6	25	20,589	-59.9		137	3.9	27	20,561	-57.0		263	6.4	25	20,613	-56.8		275	8.5	29	20,564	-60.3		110	1.0
40	29	21,985	-54.8		292	19.6	25	21,995	-56.1		73	7.0	27	21,981	-55.1		262	14.4	24	22,042	-54.3		274	9.7	29	21,971	-56.0		103	4.3
30	29	23,837	-52.5		291	17.9	25	23,841	-51.5		79	12.2	26	23,821	-53.2		273	18.8	24	23,895	-52.0		283	12.4	28	23,816	-52.6		77	4.9
25	29	25,019	-51.1		287	19.0	25	25,031	-49.0		76	15.7	25	25,003	-52.6		275	23.9	23	25,074	-50.7		286	14.8	27	24,996	-50.2		67	7.4
20	27	26,468	-49.4		280	24.9	23	26,497	-46.8		78	13.8	24	26,452	-50.6		272	30.9	22	26,537	-48.6		275	19.4	25	26,453	-48.2		47	3.3
15	23	28,354	-48.1		274	35.4	17	28,412	-42.7		80	8.4	20	28,353	-48.6		272	42.2	19	28,419	-46.8		281	29.1	23	28,356	-45.3		65	1.6
10	13	30,999	-45.0										16	31,065	-44.9		270	51.5	9	31,162	-42.7				12	31,114	-40.8			
7													8	33,549	-39.7															

Standard pressure surface (mb)	ELY, NEV. 804 MB						FAIRBANKS, ALASKA #4/ 996 MB						FLINT, MICH. 987 MB						FORT WORTH, TEXAS 992 MB						GLASGOW, MONT. 931 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,908	- 2.4	76	196	3.7	30	135	- 6.9	72	338	1.7	30	234	4.0	78	256	2.7	30	180	16.6	79	171	3.1	30	696	2.0	83	61	4.1
1000	30	144					30	97				.0	30	129					30	113					30	114				
950	30	562					30	498	- 4.4	55	337	1.2	30	552	5.2	59	279	6.6	30	555	17.1	68	196	11.9	30	532				
900	30	1,006					30	926	- 6.5	54	233	2.1	30	989	3.5	57	286	10.9	30	1,013	16.6	60	217	15.7	30	972	3.3	70	84	1.0
850	30	1,466					30	1,371	- 8.7	54	252	5.4	30	1,451	1.0	59	292	13.2	30	1,499	15.6	49	235	15.9	30	1,435	2.0	63	311	3.7
800	30	1,952			192	5.6	30	1,839	-10.6	54	232	5.1	30	1,936	- 1.6	58	293	17.1	30	2,012	13.7	36	249	16.3	30	1,922	- .2	62	311	4.3
750	30	2,468	- 1.4	54	197	5.8	30	2,331	-12.7	56	213	6.0	30	2,451	- 3.7	51	297	20.8	30	2,547	10.3	38	256	18.3	30	2,434	- 3.3	61	301	5.4
700	30	3,013	- 5.2	56	229	10.1	29	2,856	-15.1	53	218	6.8	30	2,991	- 6.3	45	289	23.5	30	3,123	6.4	37	259	19.0	30	2,978	- 6.9	60	290	7.4
650	30	3,588	- 9.0	55	243	14.4	29	3,408	-18.2	52	229	7.0	30	3,567	- 9.3	39	288	26.4	30	3,722	2.1	37	260	19.2	30	3,547	-10.5	59	278	8.7
600	30	4,206	-13.1	51	250	16.9	29	4,007	-21.8	51	237	8.5	30	4,182	-13.0	36	286	30.3	30	4,366	- 2.9	38	258	23.9	30	4,165	-14.1	49	275	10.3
550	30	4,865	-16.8	46	244	20.4	29	4,634	-25.4	47	234	9.1	30	4,839	-17.1		286	34.0	30	5,043	- 7.6	35	261	27.6	30	4,815	-18.2	40	277	12.2
500	30	5,572	-21.7	44	242	26.4	29	5,329	-29.8	44	230	10.1	30	5,549	-21.6		281	37.7	30	5,784	-12.7		262	34.6	30	5,525	-23.2		278	11.9
450	30	6,334	-27.2	42	243	30.9	29	6,066	-35.1	45	236	11.1	30	6,312	-26.9		285	41.8	30	6,573	-18.0		261	38.3	30	6,279	-28.8	38	276	15.0
400	30	7,179	-33.2	38	244	35.4	29	6,884	-40.9		236	12.6	30	7,156	-33.1		284	47.0	30	7,451	-24.0		260	43.1	30	7,119	-35.2	40	272	18.1
350	30	8,104	-39.8		240	37.7	29	7,781	-46.8		230	16.3	30	8,082	-39.9		281	49.9	30	8,412	-31.2		260	50.5	30	8,035	-42.4		266	21.2
300	30	9,145	-45.9		241	40.4	29	8,790	-52.0		246	15.7	30	9,120	-46.3		281	59.5	30	9,486	-39.5		260	55.4	30	9,057	-50.5		263	25.6
250	30	10,341	-52.0		242	37.7	29	9,964	-54.2		259	14.2	30	10,316	-51.5		283	68.0	30	10,708	-49.1		264	62.2	30	10,227	-56.3		263	28.0
200	30	11,772	-55.7		240	40.0	29	11,400	-52.0		252	13.4	30	11,753	-54.0		284	70.9	30	12,137	-58.9		263	67.6	30	11,639	-56.8		261	28.6
175	30	12,621	-55.7		239	39.6	29	12,268	-51.0		246	12.0	30	12,608	-54.2		288	64.3	30	12,972	-60.2		266	65.1	30	12,487	-55.4		257	30.3
150	29	13,605	-56.0		238	39.2	29	13,270	-51.4		240	11.9	30	13,596	-54.5		287	57.1	30	13,929	-61.8		265	62.4	30	13,471	-54.7		256	30.9
125	29	14,766	-56.0		238	37.1	29	14,452	-51.8		252	9.9	29	14,754	-55.5		289	46.0	30	15,050	-64.7		266	53.8	30	14,637	-54.8		256	28.4
100	29	16,181	-57.5		240	32.4	29	15,897	-52.2		258	8.9	29	16,173	-56.6		292	41.6	30	16,400	-67.4		266	42.6	30	16,061	-55.4		257	29.5
80	28	17,590	-57.3		238	30.7	28	17,338	-52.9		277	8.9	29	17,585	-57.7		290	30.9	30	17,742	-68.3		267	25.3	29	17,484	-56.0		261	24.3
70	28	18,444	-58.0		232	23.3	28	18,193	-53.3		286	10.3	29	18,434	-57.8		293	24.5	30	18,555	-66.3		271	14.8	29	18,330	-56.3		262	23.9
60	27	19,403	-57.9		236	21.6	28	19,188	-54.0		307	9.3	29	19,403	-57.2		293	22.5	30	19,489	-62.6		282	5.6	29	19,309	-56.9		261	25.1
50	25	20,548	-56.6		232	16.9	28	20,354	-55.3		320	10.5	29	20,559	-56.2		292	20.0	30	20,626	-58.6		174	1.0	25	20,473	-57.1		269	25.1
40	24	21,971	-55.7		243	13.8	27	21,770	-56.8		331	11.5	28	21,977	-55.1		288	21.0	30	22,041	-55.1		58	2.1	24	21,887	-57.2		278	29.7
30	22	24,618	-53.4		250	18.1	27	23,589	-57.6		347	14.8	26	23,824	-53.1		281	27.8	30	23,891	-52.0		55	5.8	23	23,713	-56.9		277	33.4
25	21	27,179	-52.8		263	22.9	23	26,736	-58.3		355	16.9	23	25,007	-51.9		281	31.1	28	25,080	-49.6		55	7.0	21	24,884	-56.3		280	36.3
20	19	26,451	-51.2		267	26.2	22	26,132	-59.0		2	19.0	24	26,456	-50.6		279	35.0	24	26,553	-47.1		59	7.4	18	26,342	-54.6		276	39.2
15	9	28,322	-48.8				19	27,945	-58.6		2	21.0	17	28,324	-49.6		273	40.2	18	28,482	-44.6		65	4.1	6	28,095	-54.9			
10							14	30,507	-57.9										15	31,234	-41.5		343	5.4						
7																			9	33,692	-40.0									
5																			6	35,999	-37.4									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	GRAND JUNCTION, COLO. 849 MB						GREAT FALLS, MONT. 884 MB						GREEN BAY, WIS. 989 MB						GREENSBORO, N. C. 984 MB						GUAM, MARIANA IS. 998 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,474	6.1	42	127	2.5	30	1,123	1.7	72	237	5.6	30	210	3.0	84	299	1.6	30	273	9.9	73	262	1.7	29	111	24.7	90	88	6.0
1000	30	108					30	118					30	117					30	140					29	91				
950	30	535					30	537					30	533	4.4	63	290	4.9	30	569	12.2	54	280	7.8	29	543	23.2	82	89	14.6
900	30	990					30	982					30	974	2.9	60	289	7.6	30	1,022	10.2	50	294	13.4	29	1,014	20.5	79	94	11.8
850	30	1,463			129	5.1	30	1,443	2.4	53	244	9.7	30	1,436	.9	62	299	10.7	30	1,495	7.7	49	293	15.3	29	1,507	17.8	76	94	10.1
800	30	1,961	5.9	35	188	7.0	30	1,931	- .7	60	267	8.0	30	1,921	- 1.5	60	302	12.0	30	1,993	5.1	47	297	18.7	29	2,024	14.9	78	94	8.9
750	30	2,485	2.0	40	217	10.5	30	2,438	- 4.1	63	275	8.7	30	2,430	- 3.9	52	303	14.4	30	2,518	2.4	47	289	19.0	29	2,569	12.5	68	89	8.2
700	30	3,038	- 2.5	46	228	14.8	30	2,984	- 7.4	64	269	6.8	30	2,975	- 6.6	46	294	18.7	30	3,073	- .7	46	284	24.1	29	3,146	9.4	61	85	6.6
650	30	3,618	- 7.2	51	237	18.1	30	3,553	-10.[illegible]	62	265	7.8	30	3,549	- 9.7	44	293	23.5	30	3,660	- 3.8	47	280	30.3	29	3,760	5.9	57	74	4.9
600	30	4,240	-11.7	55	243	21.2	30	4,170	-14.4	55	256	6.8	30	4,165	-13.4	40	294	31.3	30	4,291	- 7.7	46	284	35.9	29	4,410	2.4	52	34	1.6
550	30	4,899	-16.4	55	240	25.8	30	4,822	-18.5	46	245	9.1	30	4,819	-17.6	38	298	34.2	30	4,959	-11.9	47	285	41.6	29	5,107	- 1.4	43	305	2.1
500	30	5,612	-20.8	47	245	35.4	30	5,530	-23.4	40	248	10.7	30	5,529	-22.4	38	293	35.2	30	5,688	-16.0	44	286	47.0	29	5,863	- 5.7	35	316	3.5
450	30	6,381	-25.7	42	248	41.2	30	[illegible]287	-29.1	40	235	12.8	30	6,287	-27.8	38	289	36.1	30	6,469	-21.4	42	289	47.2	29	6,682	-10.5		303	5.4
400	30	7,227	-31.7		253	47.2	30	7,124	-35.[illegible]		240	14.4	30	7,130	-34.0		284	41.0	30	7,334	-27.4	43	288	54.2	29	7,580	-16.3		292	8.9
350	30	8,158	-38.4		253	51.1	30	8,038	-42.9		237	19.2	30	8,052	-40.6		284	46.2	30	8,281	-34.3	41	287	59.5	29	8,573	-22.3		275	13.0
300	30	9,201	-45.4		258	49.7	30	[illegible]9,060	-50.2		248	24.7	30	9,088	-46.7		284	52.3	30	9,341	-42.0		290	66.8	29	9,688	-30.5		269	17.5
250	30	10,398	-52.1		263	54.0	30	10,232	-55.8		247	24.3	30	10,282	-52.0		284	62.6	30	10,552	-50.7		291	74.8	29	10,955	-41.1		252	20.8
200	29	11,827	-56.5		258	52.3	30	11,647	-56.7		243	25.8	30	11,719	-53.7		286	63.1	30	11,980	-58.1		295	77.5	29	12,430	-53.6		242	25.5
175	29	12,673	-56.5		259	46.8	30	12,495	-55.3		245	24.3	30	12,576	-53.9		287	57.1	30	12,819	-58.6		293	69.0	28	13,274	-60.6		240	24.1
150	28	13,656	-56.5		251	44.1	30	13,479	-54.2		242	26.2	30	13,565	-54.1		285	50.5	30	13,787	-58.6		289	63.5	28	14,216	-68.1		252	20.8
125	26	14,807	-58.4		250	38.9	30	14,648	-54.1		241	23.9	29	14,733	-55.0		287	43.7	30	14,925	-61.0		287	54.4	27	15,289	-75.8		259	16.3
100	25	16,204	-59.7		249	34.8	28	16,072	-55.3		244	24.5	29	16,154	-56.7		288	38.1	30	16,307	-62.4		290	40.4	25	16,555	-81.3		276	9.5
80	24	17,593	-60.1		247	26.6	28	17,494	-55.4		247	23.9	29	17,565	-57.5		291	30.9	30	17,681	-63.3		297	28.0	25	17,810	-79.1		21	1.6
70	24	18,436	-59.9		250	19.4	27	18,345	-55.6		248	24.3	29	18,409	-57.6		292	27.0	30	18,513	-62.5		292	20.0	23	18,581	-74.0		73	6.0
60	24	19,391	-58.6		260	10.3	27	19,328	-56.6		251	23.1	29	19,382	-57.7		289	23.3	30	19,458	-60.5		297	15.7	22	19,493	-68.1		96	11.7
50	24	20,539	-57.9		266	7.2	27	20,483	-56.9		255	25.1	28	20,530	-57.2		288	21.6	30	20,602	-57.6		321	11.3	22	20,599	-64.6		91	20.0
40	24	21,953	-55.5		259	12.0	27	21,897	-57.0		257	25.1	28	21,943	-56.2		286	23.5	29	22,015	-54.8		327	6.2	22	21,978	-59.5		92	29.7
30	23	23,790	-53.2		269	15.2	25	23,716	-56.8		264	31.7	28	23,778	-54.8		281	29.3	29	23,869	-51.8		318	8.4	20	23,795	-54.2		88	37.5
25	22	24,965	-52.6		268	21.0	24	24,877	-56.1		265	33.6	28	24,945	-54.2		276	35.2	29	25,056	-50.0		325	8.0	19	24,972	-50.9		99	41.4
20	18	26,413	-51.2		265	21.6	22	26,311	-55.3		265	40.2	28	26,379	-53.0		274	42.6	27	26,517	-48.4		295	12.4	18	26,438	-46.9		88	41.0
15	17	28,293	-49.0		266	34.2	21	28,162	-54.[illegible]		268	47.2	27	28,246	-50.7		273	51.3	24	28,429	-46.1		274	17.9	12	28,359	-43.0		83	36.7
10	16	30,992	-45.4		267	49.5	20	30,794	-49.8		267	56.0	8	30,860	-47.3				12	31,132	-42.9									
7	13	33,351	-44.0				18	33,194	-45.2		269	63.9																		
5	12	35,623	-41.2				16	35,459	-40.7																					

Standard pressure surface (mb.)	HILO, HAWAII 1015 MB						HUNTINGTON, W. VA. 987 MB						INTERNAT. FALLS, MINN. *2/ 970 MB						JACKSON, MISS. 1005 MB						JACKSONVILLE, FLA. 1017 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	11	20.7	86	220	4.9	30	246	10.8	62	223	2.7	30	360	.0	67	32	1.6	30	94	15.7	88	160	2.1	30	5	16.2	88	246	1.9
1000	30	140	21.4	81	178	5.2	30	137					30	116					30	136	16.2	80	159	3.5	30	149	17.4	78	238	2.9
950	30	586	18.6	82	136	7.8	30	563	10.9	48	259	4.1	30	528	2.1	63	59	2.7	29	568	16.4	71	216	9.7	30	586	16.4	68	236	5.2
900	30	1,051	15.6	84	120	10.1	30	1,014	8.0	53	269	9.9	30	967	1.5	65	238	1.4	29	1,031	14.5	67	231	12.4	30	1,047	14.3	62	243	5.8
850	30	1,535	12.6	86	121	8.4	30	1,483	4.8	56	283	14.4	30	1,425	- .5	65	295	4.3	29	1,514	13.1	59	241	13.0	30	1,529	12.6	46	269	6.8
800	30	2,042	10.1	79	122	7.6	30	1,976	2.7	48	284	20.0	30	1,907	- 3.2	64	298	7.2	29	2,022	11.0	55	252	15.7	30	2,036	10.3	42	282	11.1
750	30	2,578	7.7	70	123	5.2	30	2,497	.5	42	283	22.7	30	2,411	- 6.0	64	296	8.9	29	2,558	8.6	49	263	18.3	30	2,568	7.8	37	284	15.7
700	30	3,145	4.9	57	137	6.2	30	3,047	- 2.3	42	282	26.2	30	2,953	- 8.3	55	293	10.1	29	3,126	5.3	46	270	19.4	30	3,137	4.9	32	290	18.5
650	30	3,747	1.9	49	162	5.6	30	3,628	- 5.5	44	283	29.7	29	3,517	-11.3	49	293	13.6	29	3,722	1.4	38	275	21.0	30	3,733	1.5	33	293	21.6
600	30	4,390	- 1.0	43	215	4.3	30	4,256	- 9.2	46	281	34.2	29	4,136	-15.0	47	294	15.0	29	4,367	- 2.4	38	274	23.9	30	4,379	- 2.8	34	294	26.0
550	30	5,076	- 4.8	44	236	5.2	30	4,917	-13.2	43	281	38.9	29	4,781	-18.9	46	290	18.8	29	5,044	- 7.0	44	272	29.1	30	5,053	- 7.1	37	295	36.9
500	30	5,825	- 9.2	42	255	10.3	30	5,645	-17.8		283	44.7	29	5,493	-23.7	44	289	20.0	29	5,789	-12.2	43	274	32.6	30	5,801	-12.1	37	292	34.4
450	30	6,630	-14.5	43	255	14.8	30	6,416	-23.2		284	47.6	29	6,247	-29.2	40	289	21.8	29	6,581	-17.3		273	37.1	30	6,594	-17.1	35	292	40.0
400	30	7,517	-20.5	39	261	17.1	30	7,278	-29.3		286	52.1	29	7,087	-35.6	36	290	23.3	29	7,461	-23.2		275	38.5	30	7,475	-23.1		292	44.9
350	30	8,492	-27.5	39	259	21.8	29	8,225	-35.7		286	57.7	29	8,002	-42.5		291	27.6	29	8,425	-30.5		276	41.0	30	8,439	-30.1		292	47.2
300	30	9,581	-36.1		269	28.0	28	9,278	-42.9		286	62.0	29	9,028	-49.2		285	29.7	29	9,502	-38.9		274	43.7	30	9,516	-38.6		292	52.8
250	30	10,821	-45.9		271	40.2	28	10,487	-51.0		289	68.8	29	10,209	-54.1		276	34.4	29	10,728	-48.7		278	52.7	30	10,742	-48.5		293	56.7
200	30	12,268	-57.2		272	55.2	28	11,916	-57.2		289	71.3	29	11,636	-54.5		276	39.1	29	12,161	-58.7		279	52.8	30	12,176	-58.4		295	61.2
175	29	13,101	-62.5		276	57.3	28	12,760	-57.0		291	67.2	28	12,493	-54.2		274	39.1	29	12,994	-60.9		284	51.9	30	13,011	-60.0		291	62.6
150	29	14,041	-67.3		278	57.7	28	13,733	-58.2		288	57.1	28	13,484	-53.1		275	38.5	29	13,953	-61.9		280	52.3	30	13,971	-61.9		291	58.7
125	29	15,128	-71.5		279	44.7	27	14,873	-58.7		288	48.6	28	14,657	-54.2		277	35.0	29	15,073	-65.4		281	45.3	29	15,095	-65.7		290	49.4
100	28	16,433	-74.8		277	30.1	27	16,267	-61.0		291	37.9	28	16,084	-55.1		275	30.9	29	16,422	-68.3		284	34.6	29	16,440	-68.7		291	35.4
80	27	17,734	-72.3		282	14.6	27	17,653	-61.2		294	30.7	28	17,506	-56.2		278	29.7	28	17,756	-67.9		293	19.6	29	17,775	-68.1		297	21.0
70	27	18,524	-69.2		291	8.0	27	18,486	-60.3		295	26.2	28	18,348	-56.8		278	28.4	28	18,568	-66.5		294	13.4	29	18,585	-66.1		307	13.2
60	26	19,455	-65.3		324	1.9	27	19,446	-59.0		297	20.8	28	19,328	-57.3		284	27.0	28	19,500	-62.9		306	7.6	29	19,520	-63.1		332	7.0
50	26	20,574	-61.2		93	8.0	27	20,595	-57.1		303	19.0	28	20,481	-57.1		284	29.1	28	20,635	-58.9		352	5.2	28	20,651	-59.2		63	4.7
40	26	21,966	-58.7		92	13.8	27	22,015	-54.6		303	17.1	27	21,892	-57.1		280	28.4	28	22,047	-55.2		50	6.0	28	22,063	-54.8		63	5.8
30	26	23,790	-54.2		88	17.9	26	23,874	-51.6		297	14.6	27	23,710	-56.9		278	33.0	28	23,893	-52.5		44	6.4	28	23,919	-50.8		84	8.9
25	26	24,965	-51.5		89	19.0	24	25,073	-50.2		283	14.4	26	24,860	-56.3		279	35.6	27	25,076	-49.9		48	8.2	27	25,110	-48.6		80	10.9
20	24	26,429	-48.6		87	18.8	23	26,528	-49.0		284	19.2	24	26,285	-55.5		280	41.0	24	26,544	-46.9		32	4.1	26	26,584	-45.5		90	9.1
15	13	28,318	-45.3		81	23.5	17	28,438	-47.0		283	25.3	21	28,108	-53.6		276	44.9	22	28,464	-44.4		330	3.3	25	28,517	-41.5		113	3.7
10													19	30,757	-49.0		276	57.9	5	31,187	-42.7				23	31,298	-37.7		285	6.0
7													15	33,119	-43.6		277	61.8							15	33,764	-34.6		278	13.4
5													6	35,430	-36.8										6	36,102	-32.2			

Standard pressure surface (mb.)	JOHNSTON IS., PACIFIC AREA 1014 MB						KING SALMON, ALASKA 1010 MB						KOTZEBUE, ALASKA 1012 MB						LAKE CHARLES, LA. 1015 MB						LANDER, WYO. 824 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	3	25.4	84	89	10.3	30	15	- 5.5	83	219	1.2	30	5	-11.2	84	116	.6	30	5	17.9	92	163	2.9	30	1,696	.5	69	250	2.7
1000	30	121	24.3	83	90	11.5	30	93			286	1.7	30	96	- 9.5	78	300	1.6	30	129	19.2	83	162	6.2	30	113				
950	30	568	20.5	83	92	11.9	30	498	- 4.[illegible]	62	238	2.7	30	492	- 9.0	72	159	2.3	30	569	18.0	71	191	12.8	30	533				
900	30	1,035	17.4	81	97	10.5	30	924	- 5.8	61	262	4.7	30	910	- 9.8	67	201	4.9	30	1,033	16.8	56	203	14.8	30	976				
850	30	1,522	14.8	76	103	8.4	30	1,370	- 7.6	61	270	5.2	30	[illegible]1,351	-10.7	66	217	5.6	30	1,519	15.1	48	217	14.2	30	1,445				
800	30	2,033	12.3	70	116	5.2	30	1,841	- 9.8	58	260	7.4	30	1,816	-12.3	64	226	6.2	30	2,031	13.3	38	227	15.0	30	1,936	1.5	53	267	2.3
750	30	2,574	9.4	62	119	3.1	30	2,339	-11.7	52	271	8.5	30	2,304	-14.7	57	225	6.8	30	2,570	10.9	29	246	15.3	30	2,450	- 1.4	51	286	4.7
700	30	3,142	6.4	55	257	.8	30	2,864	-14.2	49	276	8.2	30	2,827	-17.2	54	218	7.6	30	3,143	7.5	28	264	15.2	30	2,999	- 5.0	51	276	8.2
650	30	3,737	2.8	54	250	3.3	30	3,421	-17.5	45	291	8.0	30	3,376	-20.4	55	219	9.3	30	3,750	3.7	29	265	16.5	30	3,570	- 8.8	52	290	12.8
600	30	4,392	- .7	51	264	8.0	30	4,019	-20.8	42	286	9.5	30	3,968	-23.9	56	212	10.3	30	4,394	- .9	35	269	20.2	30	4,194	-12.7	51	259	17.3
550	30	5,078	- 4.5	44	276	9.9	30	4,655	-24.6		272	9.9	30	4,593	-28.0	54	212	11.3	30	5,080	- 5.6	37	271	23.7	30	4,848	-17.2	50	248	22.3
500	30	5,828	- 8.7	35	276	13.4	30	5,345	-29.2		273	14.2	30	5,278	-32.5	54	213	12.8	30	5,825	-10.8	33	269	25.6	30	5,561	-22.0	47	252	23.9
450	29	6,633	-13.6	34	276	15.7	30	6,084	-34.4		268	17.7	30	6,009	-37.5		214	14.2	30	6,626	-16.3		269	29.7	30	6,319	-27.8	46	247	24.1
400	29	7,525	-19.9		273	22.2	30	6,904	-40.[illegible]		270	18.3	30	6,816	-43.0		215	13.4	30	7,504	-22.7	34	269	35.9	30	7,164	-34.4		243	28.2
350	29	8,502	-26.9		274	27.6	30	7,806	-44.8		274	22.3	30	7,705	-48.3		218	15.0	30	8,469	-29.8		269	41.2	30	8,084	-41.2		246	23.3
300	29	9,594	-35.3		276	36.5	30	8,828	-48.4		272	26.4	30	8,711	-51.6		224	17.7	30	9,549	-38.3		270	45.5	30	9,116	-48.0		252	43.7
250	29	10,839	-44.7		272	42.7	30	10,021	-51.[illegible]		275	23.5	30	[illegible]9,890	-52.6		233	17.5	30	10,777	-48.3		273	48.4	30	10,303	-52.9		253	49.4
200	28	12,293	-55.9		273	49.7	30	11,464	-52.7		272	23.5	30	11,335	-51.2		235	14.4	30	12,212	-58.4		270	58.7	30	11,729	-56.1		254	48.2
175	27	13,132	-61.8		276	49.4	30	12,328	-51.[illegible]		270	20.4	30	12,205	-50.3		235	12.8	30	13,045	-61.2		269	56.9	30	12,580	-55.5		251	49.0
150	27	14,073	-67.4		275	49.5	30	13,330	-51.0		270	19.2	30	13,212	-50.2		228	13.6	30	13,998	-63.0		269	53.4	30	13,563	-55.2		248	47.0
125	27	15,156	-72.9		272	37.9	30	14,515	-51.7		269	15.9	30	14,401	-50.1		232	8.5	30	15,110	-66.8		271	45.7	30	14,726	-55.6		252	43.9
100	24	16,447	-77.4		274	27.6	29	15,960	-52.1		272	15.3	30	15,857	-50.4		237	9.3	30	16,446	-70.5		271	34.2	30	16,144	-56.7		245	35.9
80	22	17,737	-73.9		276	10.5	29	17,403	-52.7		276	12.4	30	17,311	-51.[illegible]		246	8.4	30	17,766	-70.5		273	19.0	30	17,556	-57.4		243	34.0
70	22	18,523	-69.6		291	3.7	29	18,269	-52.9		277	11.3	30	18,178	-51.0		263	6.0	30	18,571	-67.9		283	10.3	29	18,403	-57.0		245	30.3
60	22	19,448	-66.4		86	8.7	28	19,260	-53.6		279	9.3	30	19,182	-51.8		275	6.0	30	19,496	-64.7		354	2.1	29	19,381	-56.5		252	20.4
50	22	20,564	-63.0		89	15.2	27	20,434	-54.3		304	8.2	29	20,359	-52.9		295	6.2	30	20,624	-59.7		86	6.2	27	20,547	-56.6		255	17.3
40	21	21,950	-59.5		92	22.9	27	21,862	-55.[illegible]		318	8.2	29	21,795	-55.2		327	8.7	29	22,036	-55.6		78	8.2	27	21,959	-56.8		259	18.8
30	21	23,772	-54.8		91	26.6	25	23,689	-56.4		312	9.7	29	23,634	-55.4		336	9.7	28	23,882	-52.0		62	11.1	23	23,777	-55.5		265	25.1
25	21	24,950	-51.0		88	29.9	24	24,844	-56.7		323	12.2	28	24,796	-56.0		340	11.9	28	25,071	-49.4		68	13.2	20	24,944	-54.5		267	29.0
20	19	26,415	-47.9		87	32.8	24	26,255	-57.2		340	13.0	26	26,216	-56.5		352	11.9	26	26,533	-46.7		72	11.9	18	26,387	-53.4		267	31.7
15	18	28,329	-44.3		84	33.0	14	28,125	-55.7				22	[illegible]28,041	-56.5				22	28,454	-43.1		43	7.4	13	28,291	-50.4		272	31.7
10	6	31,014	-41.0										16	30,631	-54.0				10	31,207	-39.0				5	31,062	-46.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

LAS VEGAS, NEV. 937 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	660	10.0	39	225	10.7
1000	30	108				
950	30	535				
900	30	992	11.2	35	239	9.9
850	30	1,467	8.2	38	250	9.5
800	30	1,965	5.0	39	243	9.5
750	30	2,487	1.7	39	239	12.2
700	30	3,042	- 1.9	40	239	14.6
650	30	3,620	- 5.8	41	246	18.1
600	30	4,250	- 9.9	39	245	22.2
550	30	4,908	-14.3	36	247	26.6
500	30	5,633	-19.2		249	31.3
450	30	6,401	-24.2	34	251	40.4
400	30	7,260	-29.8		248	48.8
350	30	8,199	-36.6		256	49.5
300	30	9,251	-44.2		249	58.5
250	30	10,453	-51.6		248	63.7
200	30	11,882	-56.9		249	64.3
175	30	12,727	-57.1		251	63.0
150	28	13,705	-57.4		249	57.9
125	25	14,863	-59.2		246	52.3
100	22	16,260	-59.9		244	41.4
80	19	17,660	-60.0		241	30.7
70	17	18,495	-59.7		241	26.8
60	16	19,457	-59.4		237	20.2
50	13	20,600	-57.9		245	15.3
40	12	22,006	-54.8		242	9.1
30	11	23,857	-52.8		250	8.4
25	11	25,039	-51.1		253	10.9
20	10	26,492	-49.1			

LIHUE, HAWAII 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	36	22.0	84	52	7.2
1000	30	149	21.6	82	67	8.7
950	30	590	18.7	82	84	12.2
900	30	1,056	15.6	83	93	10.1
850	30	1,540	12.6	84	95	7.4
800	30	2,047	10.0	77	106	5.4
750	30	2,580	7.1	71	135	5.2
700	30	3,147	4.9	59	141	5.2
650	30	3,744	2.0	53	181	4.3
600	30	4,391	- 1.5	50	226	5.6
550	30	5,072	- 5.2	42	240	6.2
500	30	5,823	- 9.7	38	251	8.4
450	30	6,622	-15.0		250	10.3
400	30	7,510	-21.2	39	261	14.0
350	30	8,481	-28.5	38	261	18.7
300	30	9,566	-36.9		263	25.6
250	30	10,800	-46.9		269	35.4
200	30	12,239	-58.0		268	50.5
175	30	13,070	-63.1		269	55.8
150	30	14,010	-66.9		274	51.5
125	30	15,101	-70.7		272	41.0
100	29	16,411	-73.5		272	27.4
80	27	17,726	-71.1		273	14.0
70	27	18,519	-68.7		284	6.2
60	26	19,452	-64.4		269	2.1
50	24	20,577	-60.8		62	3.3
40	23	21,975	-58.0		89	11.3
30	23	23,807	-53.4		88	14.0
25	21	24,980	-51.5		84	16.5
20	21	26,440	-48.0		86	17.3
15	19	28,356	-44.6		92	21.2
10	18	31,097	-40.7		96	20.0
7	15	33,550	-36.6		94	20.2
5	11	35,877	-33.4			

LITTLE ROCK, ARK. 1006 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	14.1	77	130	.8
1000	30	130	14.3	71	98	1.0
950	30	561	14.0	62	193	6.2
900	30	1,020	12.6	61	226	9.9
850	30	1,500	12.0	46	247	13.8
800	30	2,006	9.7	48	258	17.7
750	30	2,537	7.0	45	267	18.8
700	30	3,104	4.0	40	269	21.6
650	30	3,698	.4	38	269	25.8
600	30	4,341	- 4.1	41	272	29.7
550	30	5,017	- 8.5	40	270	32.1
500	30	5,755	-13.4	39	271	34.0
450	30	6,541	-18.9	38	269	38.9
400	30	7,418	-24.9	38	269	47.6
350	30	8,375	-31.9	37	272	53.6
300	30	9,446	-40.1		271	61.4
250	30	10,665	-49.9		274	66.5
200	30	12,091	-59.3		272	68.0
175	30	12,925	-59.9		269	68.8
150	29	13,887	-60.8		272	56.7
125	28	15,013	-63.4		273	51.3
100	28	16,376	-65.7		273	41.6
80	28	17,728	-66.3		273	26.8
70	28	18,548	-64.3		281	20.0
60	28	19,491	-61.8		282	14.4
50	27	20,629	-57.9		283	8.5
40	27	22,046	-55.5		287	4.5
30	25	23,889	-52.9		277	3.9
25	24	25,070	-50.4		302	5.6
20	22	26,534	-48.4		293	7.4
15	19	28,442	-45.9			

MCGRATH, ALASKA 1000 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	103	- 6.6	69	254	2.1
1000	30	97			270	2.5
950	30	500	- 5.7	58	308	1.7
900	30	923	- 7.5	59	181	2.5
850	30	1,368	- 8.6	60	207	3.9
800	30	1,836	-10.3	61	321	1.4
750	30	2,329	-12.4	60	301	1.4
700	30	2,857	-15.0	59	288	3.9
650	30	3,409	-18.2	58	298	3.9
600	30	4,008	-21.5	52	310	4.5
550	30	4,639	-25.5	54	319	3.9
500	30	5,330	-30.2	51	310	1.6
450	30	6,064	-35.6	45	259	1.9
400	30	6,882	-41.3		199	4.5
350	30	7,778	-46.7		221	5.8
300	30	8,791	-50.4		242	6.0
250	30	9,977	-51.7		277	9.3
200	30	11,425	-51.1		276	11.5
175	29	12,296	-50.6		263	12.2
150	28	13,300	-50.7		267	12.4
125	28	14,489	-50.9		252	11.1
100	27	15,946	-50.8		268	9.9
80	27	17,395	-51.6		269	8.9
70	27	18,256	-52.1		266	8.2
60	26	19,257	-52.9		288	7.6
50	26	20,431	-53.7		296	8.9
40	25	21,863	-54.8		312	11.1
30	25	23,695	-56.6		329	13.2
25	25	24,850	-57.0		334	14.4
20	23	26,262	-57.0		355	16.1
15	16	28,088	-57.2		7	23.7
10	9	30,594	-57.9			

MAJURO, MARSHALL IS. 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	27.2	84	82	7.8
1000	30	93	26.6	84	79	8.9
950	30	539	23.7	82	77	12.6
900	30	1,018	20.8	79	85	13.2
850	30	1,512	18.0	75	89	12.2
800	30	2,030	15.3	74	92	10.5
750	30	2,572	12.9	65	86	10.1
700	30	3,155	9.8	59	91	8.5
650	30	3,766	6.1	58	101	7.6
600	30	4,420	2.4	61	109	5.8
550	30	5,114	- 1.4	54	117	3.7
500	30	5,875	- 5.7	49	151	1.4
450	30	6,691	-10.4	43	182	1.6
400	30	7,595	-15.8		282	4.1
350	30	8,589	-22.4		302	5.8
300	30	9,701	-31.0		303	8.4
250	30	10,967	-41.4		288	9.9
200	30	12,442	-53.7		289	9.3
175	30	13,287	-60.6		281	11.1
150	30	14,229	-68.1		291	15.2
125	30	15,304	-75.5		286	16.1
100	30	16,577	-80.7		272	11.3
80	30	17,833	-79.3		280	8.5
70	30	18,602	-73.6		277	2.7
60	30	19,509	-70.2		93	14.6
50	30	20,604	-66.1		88	32.8
40	30	21,978	-60.1		88	49.2
30	30	23,799	-54.6		87	55.8
25	27	24,975	-51.4		86	56.2
20	26	26,442	-46.5		89	56.0
15	24	28,374	-41.9		92	37.7
10	10	31,143	-38.7		80	25.5
7	9	33,607	-36.1			
5	5	35,958	-34.3			

MEDFORD, OREG. 968 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	401	4.3	88	179	1.4
1000	30	133				
950	30	550	4.9	77	228	1.6
900	30	993	3.3	73	199	3.3
850	30	1,455	.4	75	208	6.2
800	30	1,939	- 3.0	76	221	12.2
750	30	2,444	- 6.1	69	227	15.9
700	30	2,985	- 8.9	65	234	16.9
650	30	3,551	-12.2	59	238	18.5
600	30	4,163	-16.0	55	238	18.8
550	30	4,810	-20.7	51	236	19.8
500	30	5,511	-25.8	47	240	21.8
450	30	6,261	-31.5	45	245	23.7
400	30	7,090	-37.0		242	27.0
350	30	8,003	-42.9		248	29.7
300	30	9,030	-48.1		258	31.7
250	30	10,219	-52.8		271	29.1
200	30	11,648	-55.6		273	30.9
175	30	12,500	-54.4		271	29.3
150	29	13,487	-54.0		276	26.6
125	28	14,655	-54.6		265	23.3
100	28	16,080	-55.5		264	21.0
80	28	17,502	-55.7		252	18.8
70	28	18,355	-56.0		250	17.5
60	28	19,333	-55.9		247	16.9
50	28	20,491	-56.1		244	16.9
40	28	21,910	-55.8		249	21.0
30	28	23,747	-54.4		255	26.6
25	28	24,915	-54.0		259	33.0
20	27	26,356	-53.2		261	39.1
15	26	28,222	-51.0		265	50.5
10	24	30,872	-48.2		267	61.4
7	20	33,284	-45.0		269	71.7
5	19	35,545	-41.5		267	67.6

MERIDA, MEXICO 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	20.6	92	92	6.6
1000	30	136	21.7	85	99	12.0
950	30	579	20.5	75	117	16.1
900	30	1,048	19.0	56	118	12.8
850	30	1,538	17.0	44	93	5.8
800	30	2,053	15.1	26	99	2.5
750	30	2,591	12.5		98	3.7
700	30	3,172	9.2		84	4.3
650	30	3,775	6.4		56	5.8
600	30	4,435	2.6		31	6.4
550	30	5,122	- 1.7		22	7.6
500	30	5,886	- 6.7		15	8.7
450	30	6,692	-12.4		360	8.2
400	30	7,593	-18.9		337	7.0
350	29	8,575	-26.2		313	7.2
300	29	9,671	-34.8		305	11.3
250	29	10,918	-44.6		293	17.7
200	29	12,377	-55.0		280	21.4
175	29	13,221	-60.0		276	22.7
150	28	14,175	-64.9		271	18.5
125	28	15,273	-70.2		275	13.4
100	28	16,584	-75.1		306	10.5
80	28	17,868	-76.3		31	7.0
70	28	18,653	-71.9		68	11.1
60	28	19,570	-65.4		83	10.1
50	28	20,692	-60.8		91	10.3
40	25	22,089	-57.0		73	14.2
30	25	23,935	-51.0		75	19.4
25	24	25,127	-48.6		81	20.6
20	21	26,598	-45.8		92	21.6
15	10	28,549	-41.5			

MIAMI, FLA. 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	20.0	85	96	1.4
1000	30	147	20.3	77	93	4.1
950	30	589	17.8	73	105	5.6
900	30	1,051	15.5	63	112	4.9
850	30	1,535	13.8	49	94	3.5
800	30	2,046	12.6	32	359	1.9
750	30	2,581	10.4	26	329	4.9
700	30	3,157	7.4	22	313	5.8
650	30	3,757	3.6		310	8.5
600	30	4,409	- .3		330	10.3
550	30	5,089	- 4.8		319	15.0
500	30	5,845	- 9.5		309	18.1
450	30	6,642	-14.9		303	20.8
400	30	7,533	-21.5		298	22.3
350	30	8,503	-28.9		304	24.9
300	30	9,586	-37.6		303	27.4
250	30	10,817	-47.5		302	30.7
200	29	12,262	-56.8		303	37.7
175	29	13,101	-60.0		295	40.4
150	29	14,055	-63.8		289	36.5
125	29	15,160	-68.8		290	34.4
100	29	16,480	-73.1		295	23.1
80	29	17,788	-72.3		308	12.6
70	29	18,595	-68.5		339	6.0
60	28	19,515	-64.1		27	6.2
50	28	20,642	-60.1		64	8.2
40	28	22,046	-56.5		75	8.0
30	28	23,895	-51.5		81	11.7
25	28	25,087	-48.6		78	16.1
20	26	26,567	-44.7		92	17.7
15	24	28,511	-40.9		102	15.9
10	24	31,298	-36.4		100	9.9
7	17	33,795	-33.3		12	2.9
5	7	36,200	-30.4			

MIDLAND, TEXAS * 1/ 913 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	874	14.0	61	216	1.9
1000	30	94				
950	30	535				
900	30	996	17.0	50	207	3.7
850	30	1,484	16.9	38	240	9.7
800	30	1,999	14.6	34	247	13.4
750	30	2,538	11.1	32	251	15.5
700	30	3,112	6.8	31	249	18.8
650	30	3,712	2.1	35	245	24.9
600	30	4,356	- 2.5	35	243	28.4
550	30	5,035	- 7.3	34	248	34.4
500	30	5,777	-12.4	33	248	37.1
450	30	6,565	-17.9	30	251	39.4
400	30	7,442	-24.4	36	250	45.5
350	30	8,402	-31.4	38	250	53.8
300	30	9,475	-39.7	37	249	62.8
250	30	10,697	-49.2		251	69.6
200	29	12,128	-59.1		249	72.9
175	29	12,961	-60.7		249	67.8
150	29	13,918	-62.1		250	66.6
125	29	15,037	-64.7		253	56.3
100	29	16,390	-67.0		254	45.7
80	29	17,730	-68.8		253	26.4
70	29	18,546	-67.2		249	15.2
60	28	19,475	-62.3		251	5.2
50	27	20,609	-58.7		224	.6
40	27	22,021	-55.8		71	5.1
30	27	23,868	-52.3		66	8.2
25	27	25,054	-49.9		73	10.5
20	27	26,521	-47.2		75	8.0
15	26	28,436	-44.0		58	4.5
10	23	31,195	-40.2		321	6.4
7	18	33,631	-36.9		297	14.4
5	8	35,975	-32.1			
	5	37,636	-28.3			

MONTGOMERY, ALA. 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	61	14.4	86	146	.6
1000	30	145	16.1	77	154	1.4
950	30	582	15.8	68	246	6.2
900	30	1,040	14.1	62	272	9.3
850	30	1,521	12.2	52	272	12.0
800	30	2,028	10.1	46	270	15.9
750	30	2,563	7.7	42	277	18.5
700	30	3,128	4.7	36	279	21.6
650	30	3,728	1.1	37	281	25.5
600	30	4,368	- 3.0	38	285	28.4
550	30	5,046	- 7.4	40	287	32.8
500	30	5,788	-12.1	38	284	38.1
450	30	6,589	-17.3	35	284	42.0
400	30	7,460	-23.2		284	45.1
350	30	8,424	-30.6		284	48.4
300	30	9,500	-39.3		285	52.7
250	30	10,721	-49.0		287	56.9
200	29	12,158	-58.5		287	65.7
175	29	12,992	-60.5		286	64.3
150	29	13,952	-61.3		285	61.8
125	29	15,074	-65.1		284	49.7
100	29	16,423	-67.9		284	38.5
80	29	17,766	-67.6		292	21.6
70	29	18,580	-66.0		296	14.6
60	29	19,513	-63.1		301	9.7
50	29	20,645	-58.9		29	5.1
40	29	22,061	-54.9		43	3.7
30	28	23,912	-51.9		37	6.0
25	28	25,100	-49.7		61	7.0
20	26	26,574	-47.4		32	4.5
15	16	28,465	-43.9			

NANTUCKET, MASS. 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	14	5.4	77	306	5.6
1000	30	93			288	5.8
950	30	510	5.0	62	296	12.8
900	30	952	2.6	60	300	15.3
850	30	1,413	.0	57	302	18.5
800	30	1,897	- 2.4	55	302	21.8
750	30	2,403	- 5.1	53	300	23.1
700	30	2,946	- 8.1	51	297	24.7
650	30	3,514	-11.2	45	297	28.2
600	30	4,129	-14.8	42	297	33.6
550	30	4,776	-18.9	40	295	36.1
500	30	5,486	-23.4	36	297	38.7
450	30	6,244	-28.5	37	296	43.5
400	30	7,084	-33.8	36	292	49.2
350	30	8,008	-40.0		290	50.7
300	30	9,047	-45.8		291	57.3
250	30	10,248	-50.6		292	60.6
200	30	11,692	-52.7		294	57.1
175	30	12,554	-52.4		292	52.7
150	30	13,550	-52.6		292	47.6
125	29	14,727	-54.2		289	40.6
100	29	16,150	-55.9		289	34.6
80	29	17,567	-56.5		287	25.6
70	29	18,416	-56.2		292	20.8
60	29	19,397	-55.4		292	18.5
50	29	20,561	-54.7		285	16.9
40	28	21,993	-52.8		286	16.7
30	28	23,855	-51.2		276	19.8
25	28	25,043	-50.3		270	22.2
20	27	26,511	-48.6		264	27.8
15	27	28,413	-46.4		259	33.0
10	26	31,134	-42.5		260	46.2
7	26	33,582	-36.2		263	50.1
5	17	35,951	-30.0			

NASHVILLE, TENN. 995 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	177	12.2	75	206	1.9
1000	30	137			16	1.0
950	30	565	12.5	58	260	6.0
900	30	1,020	10.7	51	273	11.1
850	30	1,496	8.8	47	280	15.5
800	30	1,995	6.7	44	283	19.6
750	30	2,522	4.2	40	284	22.3
700	30	3,082	1.3	38	282	27.4
650	30	3,673	- 2.1	40	281	32.1
600	30	4,306	- 5.8	41	284	38.5
550	30	4,979	-10.2	42	284	40.4
500	30	5,711	-15.0	40	281	46.4
450	30	6,495	-20.3		282	49.5
400	30	7,363	-26.1		279	54.4
350	30	8,315	-33.0		277	61.4
300	30	9,383	-41.0		279	67.6
250	30	10,598	-50.4		276	75.0
200	30	12,024	-58.5		279	76.0
175	30	12,860	-59.8		279	69.9
150	30	13,824	-60.0		282	64.1
125	30	14,958	-61.9		284	48.8
100	30	16,331	-64.0		285	41.6
80	30	17,695	-64.2		288	30.1
70	30	18,527	-63.3		297	20.0
60	29	19,462	-61.0		297	11.7
50	29	20,602	-58.1		315	9.3
40	29	22,016	-55.2		318	10.5
30	29	23,865	-52.6		319	8.9
25	29	25,047	-50.4		321	9.3
20	27	26,513	-48.4		291	11.1
15	26	28,417	-46.5		283	18.1
10	23	31,124	-42.9		281	38.3
7	21	33,551	-39.9			
5	18	35,836	-36.1			

N. Y. INT. AP, IDLEWILD 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	7.4	58	309	5.8
1000	30	116	7.0	54	307	7.0
950	30	542	5.7	50	312	11.1
900	30	979	3.5	49	313	15.2
850	30	1,441	1.3	49	310	19.8
800	30	1,927	- 1.3	49	306	22.9
750	30	2,446	- 3.7	46	304	27.0
700	30	2,981	- 6.8	47	302	30.1
650	30	3,561	- 9.9	44	301	32.4
600	30	4,171	-13.4		302	37.3
550	30	4,828	-17.4		300	42.4
500	30	5,537	-22.1		299	47.2
450	30	6,305	-27.3		297	52.7
400	30	7,143	-32.6		296	56.5
350	30	8,071	-39.1		293	62.4
300	30	9,112	-45.9		293	64.9
250	30	10,308	-52.0		296	68.0
200	29	11,739	-53.5		298	58.9
175	29	12,598	-53.9		297	54.0
150	29	13,588	-53.6		297	50.7
125	29	14,757	-54.8		296	42.2
100	29	16,178	-56.8		297	37.1
80	29	17,587	-57.9		291	28.8
70	29	18,441	-57.4		292	24.3
60	29	19,405	-56.9		292	18.3
50	29	20,564	-55.5		289	18.1
40	29	21,990	-54.2		290	15.2
30	29	23,843	-52.1		289	19.0
25	26	25,024	-51.3		280	21.0
20	24	26,477	-50.1		274	24.5
15	13	28,371	-47.8			

NOME, ALASKA 1012 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	- 8.8	77	18	3.7
1000	30	97			356	2.1
950	30	501	- 7.5	63	242	1.7
900	30	917	- 8.9	66	252	4.5
850	30	1,358	-10.5	64	259	7.0
800	30	1,823	-12.1	62	253	6.6
750	30	2,312	-14.5	53	258	7.6
700	30	2,836	-17.3	53	261	8.9
650	30	3,381	-20.6	54	252	8.7
600	30	3,976	-24.1	52	245	9.3
550	30	4,602	-28.2	52	244	10.9
500	30	5,284	-32.4	50	249	12.2
450	30	6,017	-37.3		241	12.0
400	30	6,825	-42.6		237	14.2
350	30	7,717	-47.6		236	14.4
300	30	8,727	-50.5		245	15.5
250	30	9,912	-51.7		244	18.5
200	30	11,360	-51.2		245	17.3
175	30	12,230	-50.1		245	16.1
150	30	13,238	-49.9		252	12.8
125	28	14,436	-49.6		239	12.2
100	27	15,899	-49.8		246	12.4
80	26	17,360	-50.6		250	9.7
70	26	18,232	-50.6		258	8.0
60	25	19,226	-50.8		264	6.6
50	24	20,410	-51.8		283	6.6
40	24	21,850	-53.5		290	7.8
30	24	23,693	-55.0		328	9.3
25	24	24,858	-55.9		329	10.7
20	23	26,268	-56.4		340	9.7
15	19	28,090	-56.0		322	9.7

NORFOLK, VA. 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	11.7	65	278	3.7
1000	30	129	12.2	58	261	4.7
950	30	556	11.1	48	294	10.1
900	30	1,008	8.9	46	304	15.5
850	30	1,479	5.8	48	299	18.3
800	30	1,973	3.1	46	291	21.8
750	30	2,489	.5	44	290	25.1
700	30	3,045	- 2.7	45	289	28.2
650	30	3,624	- 6.3	43	289	30.9
600	30	4,250	- 9.8	41	288	34.2
550	30	4,913	-13.8	41	287	41.6
500	30	5,635	-18.1	41	285	47.6
450	29	6,409	-23.2		288	51.9
400	29	7,268	-29.3	44	287	55.8
350	29	8,208	-36.1	43	289	57.5
300	29	9,261	-43.4		290	67.8
250	29	10,466	-51.3		292	77.3
200	29	11,893	-56.7		294	78.1
175	29	12,739	-56.7		297	70.9
150	29	13,714	-57.4		293	59.8
125	29	14,864	-58.2		293	53.2
100	28	16,265	-60.6		292	40.8
80	27	17,653	-61.5		296	27.6
70	27	18,493	-60.4		301	23.9
60	26	19,452	-58.2		305	12.8
50	26	20,606	-56.3		321	7.8
40	25	22,033	-53.4		299	7.6
30	23	23,908	-50.1		332	3.7
25	23	25,102	-49.2		289	2.3
20	22	26,577	-47.7		253	7.2
15	18	28,496	-44.5		237	12.0

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1963

Standard pressure surface (mb.)	NORTH PLATTE, NEBR. 913 MB						OAKLAND, CALIF. *1 1017 MB						OKLAHOMA CITY, OKLA. 967 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	848	5.2	77	110	1.4	30	6	9.8	80	200	2.3	30	392	13.7	74	145	4.7
1000	30	97					30	142	9.6	77	218	3.5	30	108				
950	30	523					30	565	7.1	75	254	7.4	30	542	14.2	68	159	7.8
900	30	966	6.2	68	193	.8	30	1,010	5.0	70	265	10.3	30	1,000	14.7	58	206	15.5
850	30	1,435	6.2	55	256	4.3	30	1,474	2.3	66	260	11.1	30	1,483	13.4	46	234	16.1
800	30	1,932	5.0	50	257	8.0	30	1,962	- .4	57	258	11.1	30	1,991	11.2	36	246	18.3
750	30	2,454	2.2	46	264	11.8	30	2,475	- 3.3	50	256	13.6	30	2,524	8.2	30	250	21.8
700	30	3,010	- 1.6	47	266	19.4	30	3,019	- 6.0	42	262	16.3	30	3,094	4.7	29	253	26.2
650	30	3,592	- 5.6	47	269	24.5	30	3,592	- 9.2	42	269	20.6	30	3,688	.4	28	256	29.1
600	30	4,219	-10.0	45	266	29.5	30	4,212	-12.8	44	268	23.5	30	4,330	- 4.2		261	30.5
550	30	4,880	-14.8	42	260	33.0	30	4,867	-17.4	37	271	26.4	30	5,001	- 9.0		257	35.2
500	30	5,598	-19.8	37	259	34.0	30	5,578	-22.3	38	269	29.5	30	5,741	-14.2		257	38.3
450	30	6,368	-25.3		260	38.9	30	6,338	-27.5	37	269	33.2	30	6,523	-19.8		258	43.9
400	30	7,217	-31.3		260	47.6	30	7,182	-33.6	35	269	36.9	30	7,395	-26.1	31	260	49.7
350	30	8,150	-37.7		263	54.2	30	8,106	-40.1	36	278	41.6	30	8,348	-33.2		259	57.3
300	30	9,197	-44.9		265	61.8	30	9,144	-44.8		277	49.7	30	9,413	-41.1		259	66.3
250	30	10,396	-52.2		267	62.4	29	10,340	-52.5		272	51.9	30	10,627	-50.5		259	78.3
200	29	11,822	-57.8		270	60.8	29	11,766	-56.6		268	48.4	30	12,053	-58.5		262	79.3
175	29	12,664	-57.8		272	60.0	29	12,611	-57.2		268	46.2	29	12,890	-60.7		261	75.8
150	29	13,637	-57.3		274	52.5	29	13,588	-56.7		261	39.6	29	13,847	-61.3		263	71.7
125	29	14,790	-57.6		273	44.9	29	14,743	-57.3		260	38.3	29	14,974	-63.0		263	60.2
100	29	16,195	-58.9		272	38.3	29	16,151	-57.8		254	31.5	29	16,341	-64.9		262	43.1
80	29	17,591	-60.0		270	29.3	28	17,557	-58.0		249	26.0	29	17,698	-65.8		262	26.8
70	29	18,432	-59.8		281	21.6	26	18,402	-57.0		244	22.9	29	18,519	-63.9		263	16.1
60	29	19,393	-59.2		290	15.9	26	19,375	-56.5		237	18.7	28	19,457	-60.9		266	9.7
50	29	20,540	-57.1		283	13.4	26	20,534	-56.0		230	16.1	28	20,597	-58.2		266	5.6
40	29	21,956	-55.6		282	17.5	25	21,961	-53.9		245	17.5	28	22,011	-55.2		253	3.1
30	29	23,799	-53.9		271	23.1	25	23,811	-52.9		244	16.1	28	23,858	-52.5		339	3.9
25	28	24,966	-53.5		271	31.5	25	24,990	-51.6		249	19.6	27	25,045	-50.5		328	3.9
20	27	26,413	-52.0		273	38.7	25	26,444	-49.5		257	26.0	23	26,525	-48.2		346	3.7
15	26	28,290	-50.0		266	48.2	22	28,336	-47.4		260	34.4	10	28,442	-46.0			
10	24	30,965	-46.6		271	65.5	20	31,038	-46.0		270	43.1						
7	23	33,366	-42.9		270	74.8	17	33,418	-43.1		270	62.6						
5	23	35,640	-40.3				9	35,700	-38.9									

Standard pressure surface (mb.)	OLYMPIA, WASH. 1007 MB						OMAHA, NEBR. 965 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	98	5.4	89	193	3.1	30	403	7.2	69	112	2.7
1000	30	112			207	4.1	30	110				
950	30	532	4.9	79	201	6.4	30	533	7.6	63	143	2.9
900	30	972	2.5	76	195	8.7	30	980	7.6	54	231	6.8
850	30	1,432	- .4	76	195	8.5	30	1,450	6.1	53	268	11.7
800	30	1,914	- 3.3	78	197	8.7	30	1,945	4.0	48	259	14.8
750	30	2,420	- 6.5	66	203	9.7	30	2,467	1.5	44	270	18.3
700	30	2,959	- 9.6	65	203	9.9	30	3,021	- 1.7	43	268	21.6
650	30	3,523	-13.0	64	207	10.9	30	3,600	- 5.7	43	269	24.8
600	30	4,133	-16.7	62	211	11.5	30	4,229	-10.0	44	267	34.2
550	30	4,776	-20.9	57	197	11.7	30	4,890	-14.5	43	266	37.5
500	30	5,480	-25.7	54	193	11.9	30	5,611	-19.1	40	264	41.8
450	30	6,225	-31.5	54	194	12.4	30	6,382	-24.5	37	263	46.4
400	30	7,058	-37.9	51	209	16.1	30	7,235	-30.5		265	56.3
350	30	7,964	-45.0		198	17.7	30	8,171	-30.9		268	62.8
300	30	8,979	-51.4		200	19.6	30	9,220	-44.4		270	69.8
250	30	10,153	-54.8		228	20.2	30	10,421	-52.3		269	79.5
200	29	11,576	-55.2		241	18.1	29	11,848	-57.1		271	74.4
175	29	12,431	-54.1		242	16.3	29	12,692	-57.0		270	69.8
150	29	13,421	-53.6		246	15.9	29	13,669	-56.7		269	60.2
125	29	14,593	-53.5		249	16.1	29	14,821	-57.7		268	52.3
100	29	16,026	-54.5		250	13.4	29	16,225	-58.8		268	42.9
80	29	17,449	-55.5		246	14.0	28	17,623	-60.2		275	32.8
70	29	18,304	-55.5		246	13.6	28	18,465	-60.3		280	23.9
60	29	19,280	-56.3		243	13.2	28	19,425	-58.1		280	17.9
50	29	20,439	-56.9		246	15.5	26	20,572	-57.1		277	15.7
40	29	21,857	-56.9		254	17.1	25	21,990	-55.8		282	18.7
30	29	23,690	-56.8		261	21.6	24	23,827	-53.8		278	23.5
25	28	24,864	-55.9		263	25.5	23	25,009	-52.6		276	27.4
20	27	26,273	-55.2		264	31.9	21	26,454	-51.0		276	28.9
							14	28,314	-49.0		275	31.3

Standard pressure surface (mb.)	PEORIA, ILL. 992 MB						PITTSBURGH, PA. 973 MB						PONAPE, CAROLINE IS. 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	200	6.5	72	140	1.4	30	353	4.7	77	261	2.5	30	39	25.2	90	85	4.1
1000	30	128					30	428					30	81	25.6	87	86	4.9
950	30	553	8.6	58	224	3.9	30	549	6.7	59	265	8.2	30	528	23.6	84	90	10.4
900	30	1,001	7.0	57	262	6.4	30	992	5.0	58	284	16.1	30	1,006	20.8	82	92	12.2
850	30	1,469	4.7	58	277	9.9	30	1,457	2.2	59	288	20.8	30	1,500	18.5	77	95	9.5
800	30	1,962	2.9	54	283	15.3	30	1,944	- .7	56	287	22.0	30	2,020	16.3	73	101	6.6
750	30	2,483	.4	48	283	20.8	30	2,457	- 2.9	46	282	25.5	30	2,563	13.3	73	109	5.2
700	30	3,034	- 2.5	49	283	25.5	30	3,004	- 4.8	38	283	29.0	30	3,147	9.9	75	109	4.9
650	30	3,615	- 6.0	45	284	28.0	30	3,577	- 7.8		286	33.2	30	3,756	6.6	74	112	5.4
600	30	4,241	- 9.9	39	282	35.2	30	4,202	-11.7		286	36.7	30	4,416	2.7	76	110	5.1
550	30	4,903	-13.8	34	280	39.4	30	4,858	-15.6		286	42.4	30	5,110	- 1.1	76	88	3.7
500	30	5,625	-18.6	35	278	44.9	30	5,577	-20.4		285	47.4	29	5,871	- 5.5	71	76	1.4
450	30	6,396	-24.1		279	49.4	30	6,341	-25.8		286	48.8	29	6,686	-10.4	71	146	2.1
400	30	7,251	-30.1		278	56.5	30	7,193	-31.9		285	54.2	29	7,591	-15.7	55	163	1.7
350	30	8,189	-36.6		278	62.6	30	8,125	-37.9		288	62.8	29	8,585	-22.4	46	245	.8
300	30	9,240	-44.2		277	75.8	30	9,172	-44.7		287	74.0	29	9,699	-30.8	43	252	4.1
250	29	10,443	-52.0		277	82.2	30	10,374	-51.1		288	84.1	29	10,966	-41.1		227	3.9
200	29	11,867	-57.4		277	79.5	30	11,809	-54.9		291	78.9	29	12,442	-53.6		207	8.2
175	29	12,711	-56.8		282	71.5	30	12,662	-55.4		295	70.5	29	13,287	-60.5		216	8.0
150	29	13,688	-57.1		283	60.2	30	13,645	-55.3		295	56.0	28	14,231	-68.2		255	5.6
125	29	14,839	-58.3		282	50.3	30	14,804	-57.0		294	49.2	28	15,304	-75.7		255	2.1
100	29	16,237	-59.6		283	37.9	30	16,211	-58.9		293	42.9	27	16,474	-81.5		283	3.4
80	29	17,631	-60.6		289	29.5	30	17,612	-58.7		299	32.6	25	17,823	-80.6		293	2.9
70	29	18,471	-60.2		289	23.9	30	18,453	-58.3		300	22.2	23	18,582	-76.0		17	2.3
60	29	19,428	-58.5		288	19.6	30	19,422	-57.8		296	17.9	23	19,482	-71.6		82	13.0
50	28	20,575	-57.2		287	17.1	30	20,575	-56.7		297	18.7	22	20,569	-67.2		87	32.6
40	27	21,988	-55.9		290	19.8	29	21,997	-54.3		291	15.2	22	21,940	-60.4		89	50.3
30	26	23,820	-53.7		282	22.9	29	23,849	-52.4		289	20.8	22	23,757	-54.6		90	55.2
25	26	24,996	-52.5		280	26.6	29	25,031	-51.0		288	20.2	22	24,932	-51.1		87	55.2
20	26	26,443	-50.9		280	34.8	29	26,487	-49.9		281	27.2	20	26,391	-47.4		88	58.7
15	24	28,335	-49.0		276	42.2	28	28,373	-49.1		275	34.0	19	28,307	-43.8		91	46.5
10	23	31,028	-45.2		274	57.3	25	31,077	-44.5		270	47.8	14	31,067	-37.8		89	18.7
7	21	33,420	-41.4		277	68.0	23	33,498	-40.6		274	53.8	10	33,535	-34.7			
5	17	35,724	-35.8				20	35,776	-36.8				9	35,878	-32.2			

Standard pressure surface (mb.)	PORTLAND, ME. 1009 MB						RAPID CITY, S. DAK. 901 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	20	2.9	72	299	4.1	30	966	3.0	76	357	2.5
1000	30	89			308	4.1	30	108				
950	30	507	1.9	58	321	8.9	30	526				
900	30	940	.0	61	318	10.1	30	971			2	.6
850	30	1,396	- 2.5	63	316	14.2	30	1,437	3.5	61	301	4.5
800	30	1,875	- 4.6	63	313	19.4	30	1,927	1.6	59	298	8.9
750	30	2,382	- 7.3	63	310	21.0	30	2,440	- 1.2	56	288	10.9
700	30	2,917	-10.0	58	306	22.2	30	2,992	- 4.4	56	275	14.6
650	30	3,486	-12.9	51	305	22.9	30	3,565	- 8.2	55	273	17.9
600	30	4,092	-16.1	47	302	24.9	30	4,188	-12.4	55	260	19.6
550	30	4,742	-19.6	42	296	27.8	30	4,841	-16.9	53	266	23.3
500	30	5,445	-24.2	38	296	29.0	30	5,557	-21.6	47	266	26.8
450	30	6,201	-29.7	36	295	32.3	30	6,314	-27.3	45	263	28.8
400	30	7,037	-35.3		298	32.8	30	7,161	-33.6	46	263	30.9
350	30	7,955	-41.3		295	37.7	30	8,084	-41.0		262	33.2
300	30	8,989	-47.0		294	44.3	30	9,115	-48.0		261	42.9
250	29	10,185	-50.8		296	49.0	29	10,292	-53.4		261	53.4
200	29	11,633	-51.8		297	45.3	29	11,720	-55.0		258	53.2
175	29	12,500	-51.3		295	40.6	29	12,573	-54.9		255	50.9
150	29	13,501	-51.8		297	39.4	29	13,558	-55.0		255	48.0
125	29	14,680	-52.9		292	36.1	29	14,721	-55.3		254	45.3
100	29	16,115	-54.1		287	29.3	29	16,142	-56.1		256	37.1
80	29	17,542	-55.4		290	22.0	28	17,557	-57.2		255	28.4
70	29	18,395	-55.0		284	19.0	28	18,405	-57.8		261	23.5
60	29	19,379	-54.9		283	18.7	28	19,372	-58.1		266	20.8
50	29	20,551	-53.4		279	16.7	25	20,529	-56.9		272	21.6
40	28	21,992	-53.2		278	18.7	22	21,952	-56.0		272	22.2
30	26	23,853	-51.5		270	20.6	22	23,783	-55.3		276	27.6
25	24	25,056	-50.6		260	22.7	19	24,942	-55.0		269	33.4
20	21	26,512	-49.0		256	29.9	18	26,383	-53.2		273	39.1
15	12	28,422	-46.1				11	28,239	-52.2			

Standard pressure surface (mb.)	ST. CLOUD, MINN. 975 MB						ST. PAUL IS., ALASKA 1013 MB						SALEM, OREG. 1007 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	316	3.8	82	168	2.3	30	10	- 1.7	86	348	1.9	30	61	5.8	87	185	4.9
1000	30	107					30	110			313	1.2	30	119			189	5.1
950	30	526	5.2	71	185	3.3	30	515	- 4.8	79	308	2.1	30	534	5.0	73	210	8.4
900	30	967	3.7	61	230	6.2	30	940	- 6.4	74	278	6.0	30	978	2.2	74	211	9.9
850	30	1,430	1.5	57	261	8.2	30	1,386	- 7.8	65	268	6.6	30	1,438	- .6	75	212	12.2
800	30	1,916	- 1.2	57	270	9.1	30	1,856	- 9.6	58	262	8.4	30	1,920	- 3.6	72	219	14.2
750	30	2,426	- 3.4	55	272	11.3	30	2,352	-12.1	54	269	11.1	30	2,424	- 6.7	69	221	15.2
700	30	2,972	- 6.2	53	276	14.4	30	2,877	-14.7	47	268	11.7	30	2,964	- 9.6	65	217	15.7
650	30	3,542	- 9.5	48	279	17.5	30	3,435	-17.5	46	264	14.0	30	3,528	-12.7	60	220	15.7
600	30	4,163	-13.3	43	277	19.4	30	4,031	-20.7	47	261	16.3	30	4,139	-16.8	58	226	15.5
550	30	4,814	-17.7		280	24.7	30	4,671	-24.5	46	258	20.0	30	4,782	-21.2	56	227	16.9
500	30	5,527	-22.6		278	28.4	30	5,358	-28.7	43	257	19.8	30	5,485	-26.2	52	226	17.1
450	30	6,285	-28.2		277	29.5	30	6,102	-33.4		243	18.7	30	6,231	-31.9	49	223	17.7
400	30	7,127	-34.1		275	35.6	30	6,923	-38.8		245	22.9	30	7,061	-37.9		217	17.5
350	30	8,049	-40.8		275	41.6	30	7,828	-44.8		244	20.4	30	7,968	-44.0		212	20.4
300	30	9,082	-47.9		276	46.2	30	8,846	-50.0		250	25.1	30	8,990	-49.6		224	25.1
250	30	10,270	-53.0		275	53.0	29	10,037	-52.8		247	26.8	30	10,172	-53.7		241	27.8
200	29	11,707	-54.4		276	56.2	29	11,475	-52.7		253	24.7	30	11,600	-55.4		255	26.6
175	29	12,562	-54.4		276	52.8	29	12,338	-51.9		250	24.5	30	12,455	-54.3		257	23.3
150	29	13,550	-54.4		275	48.6	29	13,337	-51.7		247	20.4	30	13,445	-53.9		254	22.2
125	29	14,715	-55.2		275	44.3	29	14,520	-51.9		252	17.7	30	14,618	-54.0		255	20.8
100	29	16,137	-56.2		276	36.7	29	15,966	-51.9		250	17.5	30	16,048	-55.0		255	16.5
80	29	17,550	-57.8		280	31.1	29	17,409	-52.4		245	15.7	29	17,471	-55.6		249	17.3
70	29	18,396	-57.8		281	27.8	28	18,279	-52.6		250	13.2	29	18,321	-55.7		246	15.9
60	29	19,363	-58.1		283	25.1	28	19,265	-53.2		261	13.4	28	19,303	-56.0		245	16.9
50	29	20,512	-57.6		285	25.3	28	20,437	-53.8		260	10.7	27	20,461	-56.4		251	17.1
40	29	21,923	-57.3		281	28.0	28	21,867	-54.7		270	5.8	27	21,877	-56.6		251	21.2
30	29	23,746	-56.0		282	32.4	26	23,699	-55.7		291	9.7	25	23,710	-56.2		259	25.1
25	29	24,907	-55.7		280	35.8	26	24,859	-56.2		271	11.3	24	24,875	-55.3		259	28.6
20	28	26,338	-54.4		277	41.0	23	26,267	-57.0		307	12.2	23	26,291	-55.1		261	36.5
15	22	28,192	-52.5		278	48.6	17	28,092	-57.1		298	12.8	19	28,096	-53.8		266	47.0
10	7	30,979	-47.5				9	30,671	-55.4				5	30,799	-49.0			
7							5	32,839	-53.9									

Standard pressure surface (mb.)	SALT LAKE CITY, UTAH 869 MB						SAN ANTONIO, TEXAS 985 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	1,288	3.1	72	171	5.6	30	243	18.6	87	143	2.7
1000	30	133					30	110				
950	30	552					30	550	18.3	76	164	10.3
900	30	1,003					30	1,015	17.6	63	183	17.9
850	30	1,468	5.0	61	169	8.2	30	1,503	16.7	52	198	16.3
800	30	1,960	2.4	56	185	8.7	30	2,019	14.9	43	219	12.0
750	30	2,481	- 1.3	58	212	8.5	30	2,559	12.1	36	332	11.3
700	30	3,025	- 5.2	62	237	9.5	30	3,137	8.4	34	250	12.4
650	30	3,601	- 9.3	60	244	15.0	30	3,739	3.9	34	256	15.7
600	30	4,217	-13.6	60	245	19.6	30	4,389	- .9	35	263	19.2
550	30	4,871	-18.2	59	237	23.7	30	5,073	- 5.6	34	259	23.3
500	30	5,578	-22.9	50	237	26.4	30	5,820	-10.7	37	257	29.5
450	30	6,341	-27.9	42	244	28.6	30	6,616	-16.6	39	256	32.1
400	30	7,178	-34.0		241	31.9	30	7,498	-22.7	37	259	35.6
350	30	8,101	-40.5		244	40.2	30	8,464	-29.8		258	41.4
300	30	9,136	-46.9		245	46.2	30	9,544	-38.4		256	47.0
250	30	10,328	-52.6		243	45.9	30	10,771	-48.4		259	53.4
200	29	11,754	-56.2		245	44.1	30	12,203	-59.1		256	61.8
175	29	12,603	-55.6		244	43.3	30	13,035	-61.3		255	61.2
150	29	13,585	-55.8		242	39.2	29	13,986	-63.3		255	58.7
125	29	14,744	-56.4		240	39.8	29	15,097	-67.0		258	48.8
100	29	16,156	-57.3		240	33.6	29	16,430	-71.0		257	35.8
80	29	17,568	-57.6		237	26.6	29	17,746	-72.1		256	20.2
70	29	18,419	-58.0		243	23.3	29	18,554	-68.6		250	10.7
60	29	19,383	-57.5		240	19.6	29	19,470	-64.9		232	3.7
50	29	20,538	-57.4		236	13.2	29	20,596	-60.3		97	5.2
40	29	21,951	-56.5		248	14.6	29	22,002	-56.2		91	8.9
30	29	23,784	-54.7		257	22.7	28	23,844	-52.3		77	13.8
25	29	24,963	-52.9		260	22.7	28	25,031	-49.6		81	16.1
20	27	26,408	-52.4		260	27.4	27	26,499	-47.1		79	15.3
15	22	28,259	-51.4		255	45.5	19	28,414	-44.4			
	11	30,878	-49.3									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

APRIL 1963

SAN DIEGO, CALIF. — 1002 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	124	10.4	85	283	2.1
1000	30	140			307	1.7
950	30	567	10.4	69	296	8.4
900	30	1,018	8.9	56	291	8.0
850	30	1,489	6.7	49	274	9.3
800	30	1,985	4.7	37	273	12.2
750	30	2,507	2.4	33	265	15.0
700	30	3,065	- .1		261	20.4
650	30	3,651	- 3.0		260	25.6
600	30	4,286	- 6.5	29	259	32.1
550	30	4,953	-11.1	30	258	34.0
500	30	5,687	-15.7	29	257	39.2
450	30	6,469	-20.7		254	45.5
400	30	7,336	-27.3		254	49.2
350	30	8,283	-34.6		252	53.4
300	30	9,343	-42.5		257	51.9
250	30	10,552	-51.0		254	55.8
200	30	11,978	-58.8		251	60.8
175	30	12,812	-60.0		252	63.3
150	30	13,775	-59.8		250	60.4
125	30	14,912	-61.1		249	52.1
100	30	16,296	-61.0		248	39.8
80	29	17,682	-60.9		241	27.6
70	29	18,518	-61.1		238	18.7
60	27	19,468	-59.6		236	11.7
50	26	20,612	-57.5		240	5.6
40	25	22,033	-54.5		167	1.9
30	23	23,881	-51.2		138	2.9
25	18	25,054	-49.0		167	2.7
20	11	26,499	-46.6		256	9.1
15	6	28,432	-42.7			
10						
7						
5						

SAN JUAN, P. R. — 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	23.4	84	87	3.5
1000	30	131	23.4	81	97	8.0
950	30	573	20.6	80	103	9.7
900	30	1,044	17.5	80	101	7.0
850	30	1,531	14.4	79	99	6.2
800	30	2,042	11.9	69	98	4.7
750	30	2,581	9.7	54	71	2.7
700	30	3,152	7.5	40	68	1.7
650	30	3,755	4.7		288	1.9
600	30	4,408	1.1		275	4.3
550	30	5,094	- 2.9		276	6.4
500	30	5,851	- 7.6		276	9.9
450	30	6,657	-12.9		276	14.0
400	30	7,551	-19.2		272	18.5
350	30	8,531	-26.0		266	25.5
300	30	9,628	-34.4		266	30.3
250	30	10,878	-43.9		263	39.2
200	30	12,339	-55.0		261	47.8
175	30	13,180	-60.8		261	46.2
150	29	14,126	-66.6		265	42.7
125	29	15,213	-72.2		274	32.1
100	28	16,512	-76.0		282	18.8
80	28	17,797	-75.6		291	6.4
70	28	18,588	-72.4		3	1.4
60	28	19,494	-66.0		73	5.1
50	27	20,613	-61.1		79	11.5
40	26	22,010	-57.9		85	19.2
30	25	23,841	-53.4		89	24.1
25	24	25,025	-49.8		91	26.8
20	23	26,496	-46.7		96	28.6
15	23	28,417	-43.3		91	26.8
10	20	31,175	-38.4		82	25.3
7	17	33,650	-34.8		77	22.5
5	8	35,953	-32.4			

SANTA MONICA, CALIF. — 1012 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	11.2	79	7	2.9
1000	30	137	11.5	75	357	2.1
950	30	562	10.3	65	316	3.1
900	30	1,014	8.3	58	292	4.9
850	30	1,484	5.9	48	270	7.4
800	30	1,979	3.5	38	268	10.1
750	30	2,497	1.0	31	271	14.6
700	30	3,052	- 1.9	31	268	19.0
650	30	3,632	- 5.1		267	22.9
600	30	4,263	- 8.7		262	29.0
550	30	4,924	-12.4	32	262	34.2
500	30	5,655	-17.3		257	36.9
450	30	6,424	-23.0		258	38.1
400	30	7,290	-28.9		260	43.3
350	30	8,232	-35.7		257	48.8
300	30	9,287	-43.3		261	50.5
250	30	10,492	-51.6		255	55.2
200	30	11,917	-57.9		257	54.8
175	30	12,755	-58.9		257	54.4
150	30	13,722	-58.8		256	50.3
125	30	14,862	-60.3		256	44.9
100	30	16,247	-61.6		252	36.9
80	30	17,633	-60.9		248	31.1
70	30	18,467	-60.1		243	28.0
60	30	19,428	-59.5		240	21.4
50	29	20,571	-57.6		247	13.0
40	29	21,988	-55.0		243	1.7
30	29	23,837	-52.1		203	3.1
25	28	25,026	-50.4		236	5.6
20	28	26,489	-48.1		246	9.3
15	26	28,390	-45.5		252	17.9
10	13	31,141	-43.3			
7						
5						

SAULT STE. MARIE, MICH. — 987 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	- .2	84	345	2.7
1000	30	118				
950	30	531	1.4	64	14	2.9
900	30	967	.6	59	300	6.2
850	30	1,424	- 1.9	58	301	11.3
800	30	1,904	- 4.3	58	302	13.0
750	30	2,412	- 6.4	52	304	15.0
700	30	2,948	- 9.1	47	304	18.7
650	30	3,516	-12.1	41	301	20.0
600	30	4,127	-15.5		297	24.3
550	30	4,777	-19.4		293	27.4
500	30	5,481	-23.9		288	29.1
450	30	6,237	-29.0		291	29.7
400	30	7,076	-34.9		292	33.8
350	30	7,995	-41.5		296	34.4
300	30	9,026	-48.3		293	35.0
250	30	10,213	-52.9		289	40.2
200	30	11,649	-53.7		291	48.0
175	30	12,508	-53.5		291	46.8
150	30	13,500	-53.1		289	42.9
125	30	14,674	-53.7		290	40.6
100	30	16,104	-55.2		293	37.5
80	30	17,524	-56.[illegible]		293	33.0
70	30	18,376	-56.9		292	29.9
60	30	19,346	-56.8		292	27.4
50	30	20,501	-56.8		290	25.8
40	29	21,920	-56.2		287	29.3
30	29	23,752	-55.3		281	34.6
25	29	24,915	-55.1		278	35.9
20	27	26,355	-53.8		276	41.8
15	26	28,204	-51.6		272	47.6
10	25	30,872	-47.4		271	58.7
7	22	33,269	-42.3		269	63.5
5	20	35,558	-36.3			

SHEMYA, ALASKA — 1011 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	1.4	87	260	5.4
1000	30	127			262	4.7
950	30	533	- 2.3	83	256	7.8
900	30	965	- 4.9	82	257	8.9
850	30	1,413	- 7.1	76	256	8.0
800	30	1,884	- 8.8	66	255	9.9
750	30	2,384	-10.8	56	259	12.4
700	30	2,911	-13.2	53	255	16.7
650	30	3,467	-16.1	50	256	17.9
600	30	4,072	-19.6	47	253	19.2
550	30	4,710	-23.3	41	252	21.8
500	30	5,407	-27.3	42	256	26.8
450	30	6,153	-32.1	39	256	25.8
400	30	6,982	-37.3		256	33.6
350	30	7,893	-43.1		260	35.0
300	30	8,917	-49.2		263	36.7
250	30	10,099	-54.0		261	29.3
200	30	11,530	-53.9		252	29.1
175	29	12,384	-52.6		251	27.0
150	29	13,381	-52.6		243	25.3
125	29	14,557	-52.6		242	24.1
100	29	15,995	-53.3		238	21.2
80	28	17,428	-53.3		231	16.5
70	28	18,296	-53.3		225	16.5
60	28	19,281	-52.9		221	15.5
50	28	20,456	-52.9		222	11.5
40	27	21,900	-53.2		217	8.2
30	27	23,750	-53.6		210	3.5
25	25	24,927	-53.9		211	3.3
20	24	26,355	-54.4		341	3.7
15	15	28,232	-54.0		17	9.5
10	9	30,853	-52.2			
7						
5						

SHREVEPORT, LA. *3/ — 1006 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	16.9	83	154	3.5
1000	30	129	17.1	75	160	4.1
950	30	571	16.7	67	200	11.5
900	30	1,029	15.6	55	216	15.3
850	30	1,513	14.3	48	230	16.7
800	30	2,023	12.0	40	248	17.7
750	30	2,561	9.3	37	257	18.1
700	30	3,129	5.6	40	265	20.0
650	30	3,726	1.4	40	270	23.9
600	30	4,370	- 3.0	39	266	24.1
550	30	5,046	- 7.5	37	265	27.4
500	30	5,789	-12.4	35	264	32.4
450	30	6,578	-17.8		264	37.3
400	30	7,456	-24.0	32	266	42.0
350	30	8,417	-31.1	31	265	48.2
300	30	9,492	-39.4		267	53.2
250	30	10,715	-48.9		270	58.7
200	30	12,147	-58.8		270	64.1
175	30	12,981	-60.4		270	63.3
150	30	13,940	-61.8		272	61.2
125	30	15,060	-65.0		269	53.0
100	29	16,407	-68.6		269	42.4
80	29	17,742	-68.5		274	26.8
70	29	18,556	-66.4		278	14.8
60	29	19,487	-62.8		320	5.6
50	29	20,621	-59.0		17	1.9
40	27	22,024	-55.6		53	3.9
30	26	23,869	-52.7		60	8.2
25	26	25,052	-50.2		60	8.5
20	24	26,511	-47.2		60	6.6
15	23	28,419	-44.5		17	5.2
10	20	31,171	-40.2		306	12.8
7	15	33,647	-37.6		291	19.2
5	9	35,920	-35.1			

SPOKANE, WASH. — 928 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	722	3.0	83	126	2.5
1000	30	112				
950	30	533				
900	30	971	4.4	74	158	4.7
850	30	1,436	2.6	66	182	5.2
800	30	1,923	- .8	68	197	4.7
750	30	2,433	- 4.6	67	211	6.0
700	30	2,975	- 8.2	64	214	8.7
650	30	3,544	-11.8	56	217	10.7
600	30	4,156	-15.7	53	224	11.5
550	30	4,801	-20.0	54	216	11.1
500	30	5,507	-25.2	55	217	11.7
450	30	6,256	-30.5	53	219	13.2
400	30	7,090	-37.0	48	217	14.0
350	30	8,000	-44.2		223	16.3
300	30	9,017	-51.1		233	16.1
250	30	10,188	-55.6		235	22.0
200	30	11,606	-55.9		243	22.0
175	29	12,453	-53.8		242	20.4
150	29	13,446	-53.2		243	17.7
125	29	14,620	-53.5		248	17.7
100	29	16,054	-54.2		244	16.9
80	29	17,482	-54.8		249	17.1
70	29	18,337	-55.4		248	18.3
60	29	19,317	-56.2		252	20.4
50	29	20,475	-56.6		258	20.4
40	29	21,889	-57.1		261	21.6
30	27	23,717	-56.7		264	26.0
25	25	24,885	-55.6		265	30.1
20	21	26,337	-54.7		266	34.8
15	13	28,156	-53.1		268	41.8
10						
7						
5						

SWAN ISLAND, W. I. — 1012 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	25.3	77	87	7.2
1000	30	117	24.6	78	82	8.9
950	30	563	21.4	77	95	11.9
900	30	1,034	18.4	72	102	10.7
850	30	1,523	15.6	63	99	9.1
800	30	2,035	13.1	48	95	6.8
750	30	2,578	10.9	35	85	5.1
700	30	3,149	8.5		69	5.4
650	30	3,753	5.7		56	5.6
600	30	4,409	2.6		56	6.8
550	30	5,101	- 1.8		59	7.0
500	30	5,859	- 6.5		22	5.1
450	30	6,666	-11.9		359	7.8
400	30	7,567	-18.3		340	10.3
350	30	8,550	-25.2		311	15.3
300	30	9,650	-33.8		295	21.4
250	30	10,903	-43.4		285	27.8
200	30	12,367	-54.7		272	29.3
175	30	13,210	-60.9		265	31.3
150	30	14,155	-66.5		272	25.3
125	30	15,243	-72.3		288	16.7
100	30	16,537	-77.4		319	8.7
80	29	17,816	-77.9		46	9.9
70	29	18,595	-73.5		74	11.3
60	29	19,504	-66.7		89	12.2
50	29	20,621	-61.7		90	15.0
40	29	22,016	-57.5		85	20.6
30	28	23,856	-52.5		94	27.0
25	27	25,038	-49.5		93	28.8
20	25	26,515	-45.9		96	33.4
15	17	28,432	-44.0		91	29.5
10						
7						
5						

TAMPA, FLA. — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	17.9	86	53	2.1
1000	30	152	18.2	81	87	2.5
950	30	586	16.7	75	155	2.9
900	30	1,052	14.7	64	210	1.9
850	30	1,535	13.4	49	255	3.3
800	30	2,044	11.9	36	273	3.9
750	30	2,579	9.4	28	284	6.8
700	30	3,151	6.4	25	287	10.1
650	30	3,750	3.1		293	13.6
600	30	4,400	- 1.1		297	17.3
550	30	5,078	- 5.6		297	18.7
500	30	5,829	-10.7		298	22.5
450	30	6,625	-15.9		295	26.2
400	30	7,510	-22.2		293	30.3
350	30	8,476	-29.5		291	31.9
300	30	9,556	-38.2		292	33.0
250	30	10,782	-48.3		295	38.5
200	29	12,222	-58.2		297	44.9
175	29	13,057	-60.6		292	42.6
150	29	14,011	-63.1		287	42.2
125	29	15,116	-67.9		288	36.3
100	29	16,443	-71.3		291	29.1
80	27	17,756	-70.3		302	17.1
70	27	18,563	-67.0		323	9.3
60	27	19,492	-63.6		360	6.2
50	25	20,627	-59.9		58	7.8
40	24	22,042	-55.8		55	8.9
30	22	23,896	-51.1		70	16.1
25	17	25,088	-48.8		65	18.5
20	14	26,559	-44.2		71	15.3
15						
10						
7						
5						

TATOOSH IS., WASH — 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	7.6	85	116	6.0
1000	30	104			116	6.8
950	30	521	4.7	80	139	6.0
900	30	963	1.9	81	174	7.8
850	30	1,422	- .9	80	177	9.3
800	30	1,904	- 3.8	74	180	9.9
750	30	2,409	- 6.6	70	186	10.1
700	30	2,947	- 9.6	68	187	9.7
650	30	3,513	-13.0	61	187	12.4
600	30	4,122	-17.0	57	182	11.5
550	30	4,763	-21.4	50	181	12.2
500	30	5,464	-26.4	49	188	13.8
450	30	6,204	-32.2	49	192	14.8
400	30	7,038	-38.3	53	197	15.9
350	30	7,942	-45.4		195	15.0
300	30	8,955	-51.6		204	16.1
250	30	10,126	-55.2		224	16.7
200	30	11,549	-54.8		245	13.4
175	29	12,408	-53.7		249	14.2
150	29	13,400	-53.3		254	11.9
125	29	14,572	-53.9		262	12.2
100	29	16,002	-54.6		259	13.0
80	29	17,426	-55.5		259	13.2
70	29	18,273	-56.1		265	12.8
60	29	19,254	-56.4		263	13.[illegible]
50	28	20,414	-56.[illegible]		271	13.6
40	28	21,826	-57.4		269	16.9
30	26	23,637	-57.6		267	22.5
25	24	24,785	-57.5		272	25.6
20	22	26,194	-56.5		271	31.9
15	18	28,052	-54.1		270	38.5
10	16	30,697	-49.0		272	44.1
7	11	33,002	-44.3			
5						

TOPEKA, KANS. — 981 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	269	9.5	75	143	2.9
1000	30	110				
950	30	537	10.9	56	187	6.6
900	30	989	10.2	51	222	8.9
850	30	1,463	9.0	41	243	13.6
800	30	1,963	6.5	41	249	15.0
750	30	2,487	3.7	34	263	16.9
700	30	3,046	.2	35	263	23.1
650	30	3,631	- 3.9	37	265	28.4
600	30	4,263	- 8.0	43	265	33.6
550	30	4,929	-12.6	47	264	37.9
500	30	5,655	-17.4	41	264	48.8
450	30	6,430	-22.6	37	270	50.9
400	30	7,291	-28.9	34	273	55.4
350	30	8,234	-35.6		269	61.4
300	30	9,290	-43.7		270	68.6
250	30	10,493	-52.2		271	77.3
200	30	11,914	-58.7		270	80.2
175	30	12,753	-58.7		271	78.7
150	30	13,723	-58.4		273	66.3
125	30	14,865	-60.3		274	50.1
100	30	16,255	-61.0		276	38.7
80	30	17,632	-62.9		276	27.2
70	30	18,466	-61.4		287	19.8
60	30	19,418	-59.7		285	13.6
50	30	20,563	-57.7		285	12.6
40	29	21,974	-55.7		294	11.5
30	27	23,818	-53.5		288	16.1
25	27	24,994	-52.6		282	21.2
20	27	26,440	-51.4		280	25.5
15	23	28,330	-48.6		278	31.1
10	11	31,134	-45.0			
7	10	33,550	-41.6			
5	7	35,828	-38.7			

TRUK, CAROLINE IS. — 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2	26.5	85	77	3.5
1000	30	84	26.3	85	77	5.4
950	30	530	24.0	83	87	10.7
900	30	1,011	21.1	83	88	8.2
850	30	1,505	18.5	81	89	7.6
800	30	2,025	15.7	79	85	6.8
750	30	2,571	12.9	77	86	5.4
700	30	3,150	9.8	75	98	3.3
650	30	3,762	6.5	71	117	1.7
600	30	4,418	2.8	69	120	1.7
550	29	5,112	- .8	61	128	1.6
500	29	5,876	- 5.1	57	289	.6
450	29	6,690	-10.0	52	17	.8
400	29	7,599	-15.3	45	306	2.5
350	29	8,595	-21.9	41		.0
300	28	9,709	-30.3		230	4.7
250	28	10,980	-40.5		196	9.1
200	28	12,460	-53.1		191	12.4
175	28	13,307	-60.2		173	13.8
150	28	14,252	-67.8		194	8.5
125	28	15,327	-75.5		211	1.7
100	28	16,598	-81.4			.0
80	26	17,855	-79.1		323	3.3
70	26	18,623	-74.5		62	1.4
60	25	19,527	-70.3		87	10.9
50	25	20,621	-66.1		92	27.0
40	24	21,995	-59.8		92	41.2
30	24	23,816	-54.3		95	46.4
25	24	24,994	-50.8		95	44.7
20	24	26,457	-47.5		95	51.3
15	23	28,382	-42.7		95	40.2
10	15	31,130	-37.4		93	14.8
7	12	33,588	-36.2			
5	6	35,933	-34.1			

TUCSON, ARIZ. — 924 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	789	11.0	31	172	3.9
1000	30	116				
950	30	551				
900	30	1,007	14.9	26	213	3.1
850	30	1,488	12.3	30	241	3.9
800	30	1,994	9.1	31	227	8.4
750	30	2,521	6.1	28	225	16.1
700	30	3,087	3.1	22	237	21.[illegible]
650	30	3,678	- .7		242	26.2
600	30	4,318	- 4.7		244	32.1
550	30	4,990	- 9.1		247	37.7
500	30	5,728	-14.1		246	42.9
450	30	6,513	-19.6		246	47.4
400	30	7,385	-26.2		245	50.7
350	30	8,338	-33.1		246	56.0
300	30	9,403	-41.4		247	58.3
250	30	10,616	-50.3		245	64.3
200	30	12,045	-57.9		244	64.3
175	30	12,882	-59.7		244	67.2
150	30	13,846	-59.9		243	61.4
125	30	14,979	-62.2		245	55.0
100	30	16,349	-64.4		248	43.7
80	30	17,709	-65.3		243	28.0
70	30	18,530	-64.7		241	19.2
60	30	19,470	-62.0		252	9.9
50	30	20,606	-58.6		260	2.1
40	30	22,020	-55.1		96	3.9
30	29	23,874	-51.6		93	6.8
25	28	25,063	-49.5		84	7.8
20	27	26,530	-47.2		82	6.4
15	27	28,448	-44.0		104	1.4
10	25	31,197	-40.4		283	10.5
7	21	33,654	-37.2		275	26.0
5	7	35,970	-32.5			

WAKE IS., PACIFIC AREA — 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	24.0	78	68	14.2
1000	30	131	22.9	78	68	18.1
950	30	577	19.5	79	73	18.1
900	30	1,041	16.2	81	77	15.5
850	30	1,526	13.4	79	84	11.5
800	30	2,036	11.5	64	91	8.0
750	30	2,572	9.3	50	85	4.7
700	30	3,144	6.7	42	344	1.4
650	30	3,745	3.7	38	298	4.9
600	30	4,396	.1		287	9.1
550	30	5,082	- 3.7		282	12.4
500	30	5,835	- 8.3		274	16.9
450	30	6,637	-13.5		277	21.0
400	30	7,531	-19.7		277	28.2
350	30	8,509	-26.4		273	34.8
300	30	9,605	-34.3		274	43.3
250	30	10,857	-43.2		276	57.1
200	30	12,323	-54.1		281	64.9
175	30	13,168	-60.1		282	62.2
150	30	14,115	-66.3		280	53.2
125	30	15,201	-72.8		280	44.3
100	30	16,495	-76.5		287	28.8
80	28	17,782	-75.0		300	11.3
70	28	18,564	-70.8		328	3.3
60	28	19,488	-65.3		89	5.2
50	28	20,607	-61.6		92	10.1
40	28	22,003	-57.8		94	14.6
30	27	23,832	-53.3		90	20.0
25	26	25,010	-50.5		89	21.4
20	26	26,476	-47.3		81	22.2
15	26	28,395	-43.7		80	28.6
10	25	31,143	-39.0		85	30.5
7	24	33,613	-35.9		90	27.6
5	17	35,947	-33.3		100	24.3

WASHINGTON, D. C. — 1005 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	84	5.9	75	276	2.7
1000	30	129			294	4.3
950	30	554	8.4	50	305	9.7
900	30	999	6.2	51	301	15.5
850	30	1,465	3.5	53	300	21.6
800	30	1,956	1.6	49	299	25.8
750	30	2,474	- 1.5	49	295	27.8
700	30	3,021	- 3.9	42	292	32.3
650	30	3,601	- 7.3		292	34.8
600	29	4,217	-11.0		292	37.5
550	29	4,879	-14.9		290	39.1
500	29	5,596	-19.5		288	43.9
450	29	6,365	-25.0		288	47.4
400	29	7,216	-30.8		288	54.4
350	29	8,152	-37.4		286	60.2
300	29	9,199	-44.6		287	70.3
250	29	10,399	-51.7		290	77.3
200	29	11,828	-55.8		290	73.8
175	29	12,678	-55.9		290	64.3
150	29	13,658	-56.2		290	56.3
125	29	14,814	-57.3		291	48.6
100	29	16,220	-58.6		290	36.9
80	29	17,615	-60.5		288	31.3
70	29	18,454	-59.7		288	25.1
60	28	19,411	-58.2		296	16.9
50	28	20,564	-56.5		299	13.0
40	28	21,984	-54.9		285	13.0
30	28	23,838	-51.5		287	17.5
25	26	25,015	-50.4		281	18.5
20	25	26,468	-49.3		272	26.8
15	18	28,336	-47.3		267	47.2
10	13	31,032	-43.4		265	59.8
7	11	33,438	-40.5		264	61.6
5	7	35,700	-36.3			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	WINNEMUCCA, NEV. 866 MB						WINSLOW, ARIZ. 850 MB						YAKUTAT, ALASKA 1010 MB						YUCCA FLAT, NEV. 879 MB						YUMA, ARIZ. 998 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,310	- .1	76	194	2.5	30	1,492	4.2	42	204	6.0	30	12	- .7	90	91	1.9	30	1,196	2.6	52	282	2.1	30	131	12.5	32	327	1.7
1000	30	140					30	143					30	94	1.4	80	113	3.9	30	130					30	110			13	2.3
950	30	558					30	569					30	503	- .2	67	116	6.4	30	551					30	542	15.9	30	291	9.7
900	30	1,001					30	1,018					30	937	- 2.8	64	119	5.6	30	997					30	1,002	13.5	28	283	10.7
850	30	1,461	2.9	54	204	4.7	30	1,491			196	5.1	30	1,387	- 5.5	64	133	6.0	30	1,467	7.0	41	254	3.3	30	1,480	10.7	26	260	10.1
800	30	1,950	.0	53	232	7.8	30	1,989	6.4	31	227	9.9	30	1,860	- 8.2	64	159	4.3	30	1,963	3.8	42	221	6.8	30	1,982	7.7	25	254	10.3
750	30	2,462	- 3.7	55	240	10.1	30	2,509	2.8	33	237	17.1	30	2,358	-11.0	66	180	4.9	30	2,477	.2	43	226	7.8	30	2,509	4.7	24	244	12.8
700	30	3,005	- 7.5	56	243	12.6	30	3,069	- .7	32	242	21.8	30	2,886	-14.3	60	186	5.4	30	3,034	- 3.1	42	233	12.6	30	3,068	1.3	23	245	16.7
650	30	3,575	-11.4	57	248	15.9	30	3,654	- 4.0	31	239	25.5	30	3,442	-17.5	64	188	7.6	30	3,605	- 7.2	44	241	15.3	30	3,658	- 1.7	18	253	23.3
600	30	4,188	-15.6	52	253	21.2	30	4,285	- 8.0	27	243	30.7	30	4,041	-21.0	60	198	8.7	30	4,234	-11.1	43	248	19.0	30	4,293	- 5.7	20	252	28.6
550	30	4,833	-19.9	48	246	22.3	30	4,950	-12.3		245	35.0	30	4,676	-24.6	53	211	6.8	30	4,892	-15.3	39	251	26.6	30	4,964	-10.1	23	253	33.4
500	30	5,539	-24.5	45	241	25.8	30	5,677	-17.4		247	38.3	30	5,368	-28.8	49	204	9.7	30	5,610	-20.3	38	249	30.7	30	5,697	-14.7	26	254	42.2
450	30	6,294	-29.5	43	241	26.4	30	6,450	-22.8		245	44.9	30	6,109	-33.7	47	204	10.7	30	6,373	-25.5		251	37.7	30	6,477	-20.3	29	252	46.6
400	30	7,131	-35.4		242	29.1	30	7,312	-28.7		247	50.9	30	6,933	-39.2		207	10.7	30	7,227	-31.1		252	43.1	30	7,349	-26.8	33	252	50.7
350	30	8,048	-41.7		248	27.4	30	8,254	-35.7		248	54.6	30	7,837	-44.5		207	9.5	30	8,161	-37.5		248	48.0	30	8,297	-34.3	33	252	56.9
300	30	9,078	-48.1		252	32.3	30	9,308	-43.3		246	60.2	30	8,856	-49.7		238	10.1	30	9,209	-44.9		253	51.9	30	9,356	-42.7		251	64.9
250	30	10,265	-52.7		249	40.8	30	10,513	-51.3		246	67.4	30	10,039	-52.9		258	7.8	30	10,408	-51.4		251	62.0	30	10,561	-51.6		248	69.4
200	30	11,695	-55.6		246	37.9	30	11,940	-57.4		245	66.6	30	11,475	-53.1		254	10.7	30	11,841	-55.7		251	54.6	28	11,977	-58.5		244	75.8
175	30	12,544	-55.9		244	37.9	29	12,781	-57.9		247	65.7	30	12,338	-52.0		266	10.1	29	12,693	-56.4		254	52.3	27	12,815	-58.8		245	75.8
150	30	13,528	-54.9		243	35.6	29	13,751	-59.0		246	56.9	30	13,335	-52.0		274	9.7	27	13,568	-56.7		256	50.3	26	13,784	-58.5		246	67.6
125	30	14,690	-55.7		243	33.4	29	14,888	-61.1		244	46.8	30	14,515	-52.9		272	9.5	27	14,821	-57.7		251	45.9	22	14,918	-61.3		242	85.8
100	30	16,110	-56.1		239	31.3	27	16,266	-62.7		245	37.7	30	15,953	-53.5		283	9.1	27	16,227	-58.6		246	39.1	20	16,296	-63.1		237	41.2
80	30	17,527	-56.3		237	25.6	27	17,642	-62.9		236	29.1	30	17,387	-54.2		294	9.7	27	17,626	-58.8		240	29.0	12	17,672	-63.4		234	28.6
70	30	18,377	-56.8		235	23.5	26	18,471	-61.9		242	20.0	30	18,244	-54.7		292	8.5	26	18,467	-58.7		239	23.3	12	18,498	-63.2		234	22.7
60	30	19,352	-56.6		237	22.5	26	19,421	-61.3		256	9.9	29	19,229	-55.3		318	9.1	26	19,432	-58.3		240	16.7	12	18,445	-61.1		241	15.2
50	26	20,503	-56.0		236	18.8	26	20,562	-57.9		248	7.4	29	20,389	-56.5		312	10.1	26	20,583	-56.3		256	12.2	9	20,569	-59.6			
40	26	21,922	-56.0		245	18.5	26	21,975	-54.9		244	7.8	29	21,800	-57.7		329	12.6	26	22,004	-55.1		244	13.4	8	21,976	-56.3			
30	21	23,761	-54.8		253	25.1	25	23,827	-52.2		251	6.2	29	23,610	-58.9		337	16.3	26	23,853	-52.5		251	14.2	8	23,826	-52.4			
25	20	24,923	-54.1		255	31.9	23	25,006	-50.6		269	5.2	29	24,753	-59.0		343	15.5	26	25,035	-50.7		252	19.2	8	25,011	-50.1			
20	15	26,394	-51.8		262	36.7	22	26,457	-49.0		257	12.6	28	26,158	-58.9		334	18.5	26	26,495	-48.8		256	25.6	8	26,480	-47.2			
15	7	28,260	-49.1				13	28,390	-45.8				27	27,968	-58.3		342	20.6	22	28,393	-46.2		264	35.4	8	28,395	-45.3			
10							6	31,145	-43.4				22	30,528	-56.5		333	22.3							7	31,116	-40.2			
7													10	32,832	-51.4															
5													5	35,007	-46.1															

Note: All observations scheduled at 1200, G C T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles (i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface and [illegible] observations at standard pressure surfaces [illegible]. Relative humidity data are not published for standard pressure surfaces [illegible] less than 16 observations are [illegible].

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning April 4, 1963
2/ beginning April 5, 1963.
3/ beginning April 23, 1963
4/ [illegible]

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. APRIL 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Apr.									
2	0.60	(0.97)	----	----	----	1.07	0.93	0.81	0.69
3	.92	.99	1.09	----	----	----	----	----	----
5	----	----	----	----	----	----	----	.93	.83
6	.89	1.00	(1.09)	1.28	----	----	----	----	(.61)
7	(.71)	(.95)	(1.07)	(1.21)	1.41	(1.16)	----	----	----
8	(.95)	(1.03)	(1.16)	(1.29)	(1.42)	----	----	----	----
9	(.74)	(.92)	(.93)	(1.06)	----	----	----	----	----
10	.80	.92	1.03	1.16	----	----	----	----	----
11	----	----	----	----	1.27	.95	.81	.84	D .53
12	D .65	D .75	D .90	1.08	1.24	1.09	.94	.81	.71
13	.67	D .76	D .87	1.06	----	----	----	----	----
16	.74	D .84	1.00	1.23	1.36	----	----	----	----
17	.81	.92	1.03	1.20	1.39	----	----	----	----
19	----	----	----	----	1.43	----	----	----	----
20	----	----	----	1.27	1.43	(1.17)	(.95)	(.90)	.82
21	.93	1.03	1.17	1.32	D 1.32	----	----	----	----
22	.89	1.02	1.14	1.30	----	----	----	----	----
23	.95	1.03	1.15	1.29	1.43	1.22	1.00	.89	.77
24	.89	1.00	1.11	1.27	1.43	(1.17)	1.05	.81	.75
25	(.82)	(.93)	(1.10)	----	----	----	----	----	----
27	.83	.94	1.09	1.26	1.47	1.24	1.09	.94	.89
28	.86	.95	1.08	1.22	----	----	1.04	----	----
29	.90	1.01	1.13	1.26	1.35	----	----	----	----
Averages	0.82	0.94	1.06	1.23	1.38	1.11	0.98	0.86	0.75

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Apr.									
5	----	----	----	----	1.52	----	----	----	----
6	1.12	1.21	1.31	1.44	1.54	----	----	----	----
7	1.12	1.22	1.32	1.44	----	----	----	----	----
8	1.15	1.23	1.32	----	----	----	----	----	----
11	1.03	1.20	1.28	1.39	----	----	----	----	----
20	1.13	1.20	1.30	1.42	----	----	----	----	----
22	----	----	----	1.41	----	----	----	----	----
23	1.12	1.21	1.30	1.43	1.58	1.42	1.30	1.22	1.15
24	----	----	1.32	1.46	----	1.41	1.29	1.18	1.10
25	1.17	1.25	1.34	1.44	----	----	----	----	----
26	1.14	1.23	1.33	1.44	----	----	----	----	----
27	1.10	----	----	----	----	----	----	----	----
29	1.18	1.27	1.36	1.46	----	----	----	----	----
Averages	1.13	1.22	1.32	1.43	1.55	1.42	1.30	1.20	1.13

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Apr.									
3	S 0.71	S 0.80	S 0.90	----	----	----	----	----	----
4	S .71	S .82	S .94	S 1.09	----	----	----	----	----
6	----	HS .69	HS .79	----	----	----	----	----	----
16	M .62	S .69	S .85	M .96	----	----	----	----	----
17	----	----	----	M .79	M 1.03	M 0.81	M 0.50	M 0.33	M 0.24
19	S .65	S .78	S .93	S 1.06	----	----	----	----	----
21	M .34	M .46	M .62	----	----	----	----	----	----
25	----	----	HM .67	----	HM 1.09	----	----	----	----
30	----	----	----	----	HM 1.24	S .92	S .51	S .44	S .29
Averages	0.61	0.77	0.81	0.99	1.12	0.87	0.51	0.39	0.27

MADISON, WIS.

	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Apr.									
3	----	----	----	----	S 1.39	----	----	----	----
4	0.94	1.04	1.14	1.32	1.47	1.31	1.16	1.02	0.96
5	----	----	----	----	S 1.30	----	----	----	----
6	----	----	M .78	M 1.06	----	----	----	----	----
9	----	----	----	1.24	----	----	----	----	----
14	M .75	M .90	S 1.03	S 1.21	S 1.37	S 1.02	----	----	----
19	----	----	----	----	M 1.29	----	----	----	----
20	S .70	S .83	S .95	----	----	----	----	----	----
30	----	----	----	----	1.38	S 1.20	S 1.03	S .91	S .81
Averages	0.80	0.92	0.98	1.21	1.37	1.18	1.10	0.97	0.89

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Apr.									
1	0.89	1.07	1.17	1.33	----	----	----	----	----
5	.95	1.06	1.18	1.30	1.51	1.33	1.18	1.07	0.96
6	.94	1.01	1.13	1.29	1.39	1.12	.87	.67	.50
8	.84	.96	1.07	1.22	----	1.28	1.07	.96	.87
9	.83	.91	1.04	1.18	1.40	1.21	1.04	.91	.78
12	.78	.93	1.01	1.21	1.44	1.28	1.11	.99	.87
13	.98	1.06	1.16	1.32	1.46	1.24	1.07	.96	.81
14	.89	1.00	1.12	1.24	1.46	1.25	1.07	.94	.86
20	----	----	----	----	----	1.16	.93	.79	.71
21	.76	.87	1.00	1.21	----	----	----	----	----
22	.87	.99	1.12	1.27	1.49	1.22	1.03	.87	.77
26	.83	.91	1.03	1.18	----	----	----	----	----
27	.77	.89	1.01	1.20	----	----	----	----	----
28	.77	.84	1.03	1.22	1.42	1.15	.98	.84	.74
29	.77	.88	1.01	1.21	----	----	----	----	----
Averages	0.86	0.96	1.08	1.24	1.45	1.22	1.04	0.90	0.79

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Apr.									
1	1.00	----	----	----	----	----	----	----	----
4	.80	0.90	1.10	----	----	----	----	----	----
5	.90	1.00	1.10	----	----	----	----	----	----
6	.90	1.00	1.10	1.30	----	----	----	----	----
8	.90	1.00	1.20	1.30	----	----	----	----	----
11		Inoperative							0.70
12					Inoperative				
13					Inoperative				
16	.90	1.00	1.10	----	----	----	----	0.90	.80
17	.90	1.00	1.10	----	----	----	----	----	----
18	.60	.70	.90	----	----	----	----	.90	.80
19	.90	1.00	----	----	----	----	----	----	----
20	.80	.90	1.10	1.20	----	----	----	1.00	.80
21	.90	1.00	1.10	----	----	----	----	1.00	.90
22	----	----	----	----	----	----	----	.90	.90
23	.90	1.00	1.10	----	----	----	----	----	----
24	----	----	----	----	----	----	----	.90	.80
27	.80	.90	----	----	----	----	----	----	.90
28	.90	1.00	1.20	----	----	1.30	1.10	1.00	.90
29	.90	1.00	1.10	----	----	----	----	----	----
30	----	----	----	----	----	----	----	.80	.70
Averages	0.90	1.00	1.10	1.30	----	1.30	1.10	0.90	0.80

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Apr.									
12	----	----	M 0.86	----	----	----	----	----	----

( ) Clouds present
S Slight haze - indeterminable
M Moderate haze - indeterminable
HS Slight haze
HM Moderate haze
D Dust
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63 of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

APRIL 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	590	550	613	602	395	654	632	652	630	580	666	681	586	504	588	692	654	678	710	---	698	583	734	739	501	451	759	691	735	594		626
AMES IOWA	246	200	320	578	525	512	218	434	570	203	434	259	586	560	314	568	577	158	527	541	592	50	208	337	576	194	175	60	323	684		384
ANNETTE ALASKA	115	66	31	148	420	495	516	523	511	485	506	400	389	101	452	479	283	322	540	589	572	481	241	569	552	550	114	66	217	308		368
APALACHICOLA FLORIDA	624	610	611	622	601	330	410	654	621	406	622	450	677	669	650	635	635	646	589	646	532	661	541	605	441	627	523	287	512	136		552
ASTORIA OREGON	613	622	188	306	87	517	441	238	235	494	514	239	476	179	323	304	198	146	498	127	593	563	455	113	530	547	679	735	746	540		408
ATLANTA GEORGIA	621	621	618	640	596	50	---	---	384	665	558	457	694	678	739	678	---	---	---	336	587	558	532	649	194	685	359	45	158	572		507
BARROW ALASKA	304	192	276	186	196	241	347	350	368	379	428	401	417	315	386	234	252	401	488	474	518	380	510	546	511	497	438	398	334	374		371
BETHEL ALASKA	461	---	461	475	232	237	273	495	486	481	437	551	507	542	544	576	585	420	519	433	333	416	488	365	552	608	508	634	684	684		482
BISMARCK N.DAK.	69	70	491	491	499	373	518	222	61	184	236	582	559	542*	332	414	512	92	582	512	367	169	526	548	378	650	62	384	300	650		379
BLUE HILL MASS.	587	489	160	211	627	601	346	629	615	313	326	628	646	653	419	513	362	378	340	496	581	684	88	221	319	443	445	681	655	85		451
BOISE IDAHO	303	500	524	493	122	125	261	438	339	438	464	248	590	211	161	581	656	297	254	441	438	527	572	664	522	275	215	684	626	566		418
BOSTON MASSACHUSETTS	577	496	158	249	638	604	331	578	613	340	355	621	637	639	374	514	338	322	374	458	593	683	179	221	323	402	502	686	639	101		452
BROWNSVILLE TEXAS	596	608	541	450	320	637	641	631	652	633	625	224	270	574	506	633	612	550	451	493	571	616	573	447	408	481	589	588	518	81		517
CANTON ISLAND P.I.	610	586	589	630*	560*	611*	580	628*	590*	610*	607	576*	---	595*	589*	585*	591	547	588	522	582	574	564*	587	596	586	517	547	600	612*		585
CAPE HATTERAS N.C.	369	545	574	484	638	186	169	613	160	640	571	641	647	663	611	663	228	418	645	415	666	574	433	666	481	555	609	568	559	139		504
CARIBOU MAINE	517	237	426	134	---	599	576	466	352*	---	237	532	462	474	374	368	566	74	558	44	525	260	236	160	436	668	573	661	649	210		406
CHARLESTON S.C.	---	572	600	609	---	72	231	620	596	603	365	289	643	---	664	677	631	642	642	392	598	588	620	717	---	532	589	325	155	273		509
COLUMBIA MISSOURI	---	---	---	---	---	---	---	---	---	---	---	---	592	634	343	558	501	341	612	649	616	512	659	---	426	393	127	227	410	507		---
DAVIS CALIFORNIA	574	492	455	529	103	85	371	468	502	501	473	561	298	340	514	488	488	584	500	262	452	538	708	638	201	574	661	700	718	705		483
DODGE CITY KANSAS	362	480	633	588	212	594	612	572	538	615	560	623	609	623	516	656	687	623	716	704	715	622	700	578	462	137	667	713	631	721		582
E. LANSING MICHIGAN	196	353	130	604	607	572	629	102	467	640	397	494	566	621	665	206	421	551	209	402	658	279	151	---	589	541	549	687	119	149		433
EL PASO TEXAS	516	690	693	617	653	704	690	710	518	679	689	706	665	695	716	636	702	762	778	777	776	402	719	713	669	185	779	803	778	491		664
ELY NEVADA	385	552	490	434	332	227	259	448	267	465	688	641	551	322	---	627	331	442	367	257	487	---	741	---	---	---	---	746	---	---		457
EPPLEY,NEWPORT R.I.	545	460	289	279	607	583	425	599	442	359	316	601	559	629	525	568	289	428	417	523	508	640	114	330	354	433	530	651	648	82		458
FLAMING GORGE UTAH	---	113	645	516	558	243	281	300	480	570	610	647	637	371	210	254	368	262	654	489	---	---	---	---	654	---	---	---	---	688		455
FORT WORTH TEXAS	530	368	189	166	86	398	607	636	617	602	374	635	658	651	605	178	463	290	658	694	621	596	505	299	400	348	137	89	711	730		461
FRESNO CALIFORNIA	568	481	571	560	364	240	174	525	399	441	610	614	413	354	535	654	607	647	396	239	570	686	669	693	287	320	631	671	630	687		508
GLASGOW MONTANA	97	114	543	435	481	357	525	387	546	146	188	557	514	484	223	65	45	---	476	333	517	370	482	480	553	638	378	145	87	392		364
GRAND JUNCTION COLO.	---	226	700	558	691	593	477	298	441	595	717	704	664	384	595	413	498	518	442	461	444	742	762	649	635	547	309	556	794	777		558
GREAT FALLS MONTANA	298	491	524	403	350	265	406	262	419	482	524	408	494	472	464	218	580	187	221	202	284	575	519	550	626	596	366	169	587	457		413
GREENSBORO N.C.	492	564	582	607	531	120	466	602	226	667	502	660	444	480	578	567	330	494	635	667	671	403	570	715	484	655	623	442	58	247		503
GRIFFIN EXP.STA.GA.	672	670	664	669	608	66	305	693	293	693	602	632	734	691	754	690	687	611	507	228	623	646	572	805	151	715	398	66	203	---		540
INDIANAPOLIS INDIANA	397	558	122	649	580	632	583	235	674	545	662	688	425	685	698	101	521	530	126	722	571	333	159	559	614	602	675	607	194	156		487
ITHACA NEW YORK	154	394	267	147	591	451	383	584	459	137	275	603	539	622	609	583	318	511	167	419	267	591	25	291	551	522	650	665	545	332		422
LAKE CHARLES LA.	534	527	483	---	---	---	---	---	495	552	515	513	648	614	596	636	492	401	170	216	500	566	---	---	599	447	244	399	557	553		489
LANDER WYOMING	454	175	610	339	540	402	467	544	466	487	539	590	600	407	280	608	290	573	632	385	397	650	755	718	678	516	161	214	619	690		493
LARAMIE WYOMING	494	275	574	408	516	348	276	254	405	563	396	587	573	349	468	617	512	637	652	421	383	448	565	591	527	477	420	231	391	624		466
LAS VEGAS NEVADA	650	622	635	578	630	346	557	538	579	675	673	665	531	260	677	701	452	681	707	618	730	730	736	731	637	534	736	716	716	724		626
LEMONT ILLINOIS	326	499	371	636	576	560	401	509	612	551	590	485	334	626	584	373	375	286	362	615	585	272	182	544	303	568	498	519	282	488		464
LITTLE ROCK ARKANSAS	530	526	153	531	121	143	539	535	---	270	234	583	555	495	445	170	531	331	339	646	512	398	535	---	148	288	67	363	---	482		388
LOS ANGELES CALIF.WB	604	540	592	548*	547	449	334	442	598	627	596	626	557	236	640	652	678	661	417	612	699	665	659*	675	429	618	685	684	662	660		580
LOS ANGELES CALIF.CO	590	572	608	569	567	589	454	368	616	652	610	664	636	102	599	669	543	620	262	609	745	709	692	722	237	408	705	726*	657*	697		573
MANHATTAN KANSAS	472	296	566	479	522	515	444	529	134	59	537	588	551	579	326	610	617	389	608	630	629	548	646	123	424	91	27	401	415	505		442
MATANUSKA ALASKA	395	438	417	406	378	420	388	72	154	486	482	277	284	222	236	418	541	546	536	139	86	265	285	515	218	325	406	568	355	440		357
MAUNA LOA OB.HAWAII	324	550	419	656	366	583	467	477	376	502	555	579	208	203	197	360	467	466	638	749	619	675	838	786	607	437	283	646	721	687		515
MEDFORD OREGON	455	268	419	---	130	372	422	390	---	418	317	---	246	279	308	323	320	196	308	432	468	669	650	397	455	98*	652*	662	673	388*		397
MIAMI FLORIDA	380	424	486	568	656	669	376	646	684	675	649	660	511	696	693	657	693	605	686	663	660	662	663	642	643	585	616	569	559	510		606
MIDLAND TEXAS	213	423	420	60	134	648	645	475	324	448	426	504	616	597	626	658	626	577	728	696	695	566	599	539	589	423	558	727	719	597		529
NASHVILLE TENNESSEE	538	566	545	638	199	70	590	470	525	602	410	609	501	630	610	354	490	391	160	655	623	575	487	618	339	635	157	63	86	162		443
NORTH OMAHA NEBRASKA	422	185	287	598	585	545	449	350	317	94	579	665	244	586	422	576	634	534	598	618	629	135	556	176	583	216	53	304	153	724		427
OAK RIDGE TENNESSEE	515	503	515	565	287	114	529	438	352	571	438	562	382	511	576	265	418	318	210	616	556	399	469	622	370	607	343	73	25	378		417
OKLAHOMA CITY OKLA.	569	155	445	435	118	540	591	546	546	526	209	615	604	584	574	493	469	450	681	654	610	536	661	71	177	67	190	341	682	684		461
PAGE ARIZONA	---	513	589	509	601	506	488	477	549	461	618	624	534	331	625	521	375	546	533	518	431	685	676	592	424	464	---	613	676	659		541
PHOENIX ARIZONA	636	652	530	635	669	656	617	680	461	466	706	676	665	578	713	717	480	684	682*	611	682	700	705	711	121	---	708	718	682	677		628

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

APRIL 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PORTLAND MAINE	562	504	59	345	594	587	399	435	569	233	283	611	630	623	345	563	385	213	363	418	567	537	173	332	384	440	372	648	681	73		431
PROSSER WASHINGTON	448	615	215	519	263	597	490	413	418	494	610	452	431	171	617	472	138	569	521	225	574	578	273	646	436	367	768	737	607	252		464
RAPID CITY S.DAK.	439	144	468	476	456	480	500	381	287	379	629	569	563	521	265	632	586	154	598	235	173	390	635	558	596	412	43	574	107	507		425
RIVERSIDE CALIFORNIA	571	641	675	634	583	648	450	483	559	693	683	663	627	226	601	663	430	542	312	464	707	737	729	724	511	247	675	738	714	715		588
SAINT CLOUD MINN.	110	283	196	602	504	474*	---	125	598	502	361	284	569	545	363	429	485	364	247	446	645	117	460	627	575	637	267	70	76	720		403
SALT LAKE CITY UTAH	123	295	623	477	505	131	197	449	351	551	604	610	637	208	260	362	208	399	483	285	182	593	774	681	782	445	181	286	774	779		441
SAN ANTONIO TEXAS	462	412	269	135	78	634	649	422	605	587	404	555	645	644	208	469	52	549	513	425	410	546	523	327	427	480	249	284	416	693		436
SANTA MARIA CALIF.	576	557	624	582	---	443	160	582	529	643	642	669	455	512	630	710	692	719	---	263	711	688	684	638	284	490	716	711	702	645		580
SAULT STE MARIE MICH	424	110	446	330	574	530	617	641	546	448	346	590	658	609	638	175	560	694	89	416	458	626	430	674	615	679	702	649	151	528		498
SEATTLE TACOMA WASH.	276	480	77	252	100	111	318	216	493	434	495	146	413	108	522	293	219	278	296	225	505	174	411	271	479	309	618	590	447	296		328
SHREVEPORT LOUISIANA	627	488	396	218	---	133	620	624	567	436	359	623	644	606	644	559	590	553	262	633	357	467	192	365	333	322	255	220	479	710		458
SPOKANE WASHINGTON	339	431	318	312	156	307	170	338	493	314	423	437	396	442	309	244	283	265	322	292	651	253	355	538	499	230	307	639	468	269		360
STATE COLLEGE PENN.	121	470	346	230	640	600	628	550	339	252	539	573	480	678	681	583	204	629	511	690	438	596	116	381	713	537	606	726	340	337		484
STERLING VIRGINA	137	495	474	612	498	550	491	552	205	681	671*	654	478	---	---	613	244	456	535	684	515	290	455	553	665	586	538	721	262	304		497
STILLWATER OKLAHOMA	573*	170	501*	466	137*	572	539	---	---	423	253	626*	581*	598	547*	539	429	356	---	---	629	592*	---	83*	255	152	159*	392	685	618		435
SWAN ISLAND W.I.	613	490*	699*	653	668	662	635	641	613	641	626	665	677	680	713	639	611	673	674	675	638	681	591	684	512*	576	596	679	678	674		642
TAMPA FLORIDA	556	561	547	551	633	622	492	617	668	581	659	564	647	708	701	695	679	683	676	625	680	674	678	459	642	598	577	483	621	578		615
TUCSON ARIZONA	621	645	439	640	663	647	535	646	587	606	679	640	650	669	665	698	672	705	715	721	711	576	719	722	83	509	739	748	738	437		627

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month

APRIL 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	245	-10	228	210	228	108	169	134	172	-3	215	287	288	223	137	212	292	-96	338	61	138	172	250	255	412	331	-103	-159	304	347		180

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

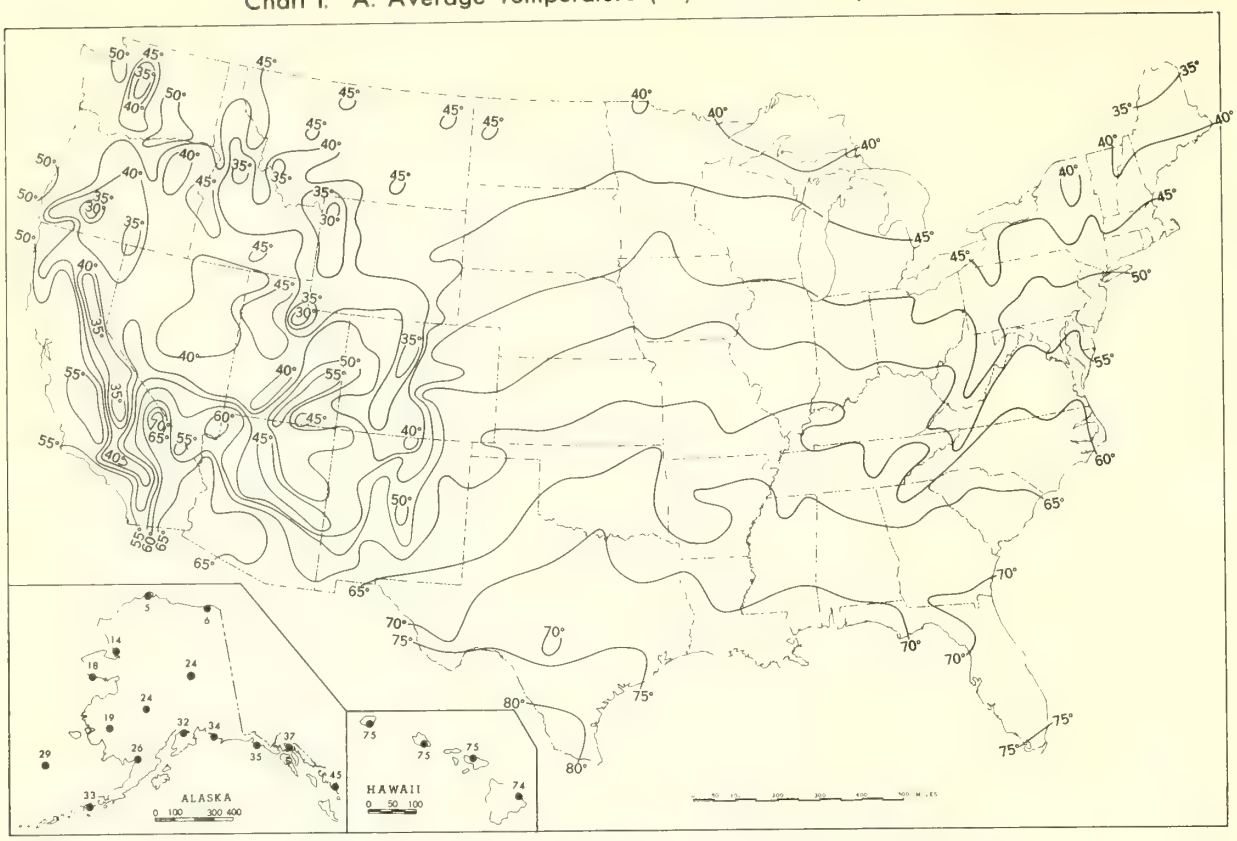
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $\lambda S Q Q Q$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

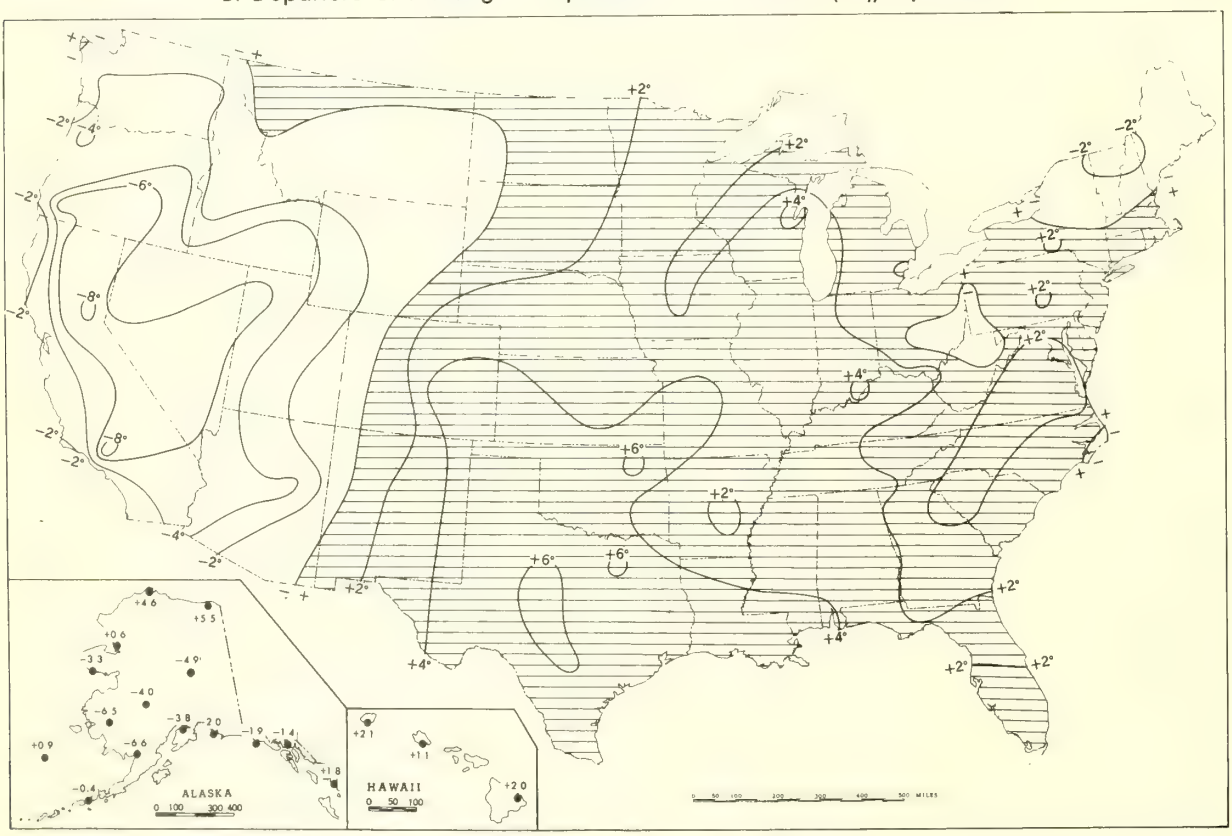
Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	07371	05337	00420	00396	00397	06367	00368	06377	05384	04418	06430	00374	00395	00370	00350	00361	04343	05408	00395	00402	04426	06463	00498	00429	00446	00423	04414	05405	04406	00367		398
Caribou, Maine	00410	04404	00298	05351	05358	00402	00455	00447	00446	00473	04458	00438	05465	00437	04453	04487	00381	05354	00305	05382	06382	07452	04458	07461	00467	00454	00472	00468	00423	05317		419
Green Bay, Wis.	04308	00268	00325	00392	00410	00413	05408	05432	00390	00390	00380	00416	00427	00435	00389	00358	00340	00327	00334	00380	00412	04402	05433	00446	05427	02448	00395	05362	00392	00440		389
Mauna Loa, Hawaii	-----	-----	-----	00266	-----	00276	00278	00278	00275	00277	00276	-----	-----	-----	-----	-----	-----	-----	00288	00286	-----	00306	00317	00325	00326	00314	00301	-----	00314	-----		294
Midland, Texas	05281	05286	-----	-----	-----	-----	-----	00285	00281	00290	05275	00293	00291	00276	05266	00278	05267	06286	00294	00282	00305	00297	00301	00309	00299	05316	00314	00312	00304	00302		292
Nashville, Tenn.	00272	00281	00314	00311	04327	-----	00387	00379	00356	00342	00344	00347	00385	00442	00414	00346	00355	04344	04350	00335	00345	-----	00339	00344	00364	00353	04338	-----	-----	04395		350
Sterling, Va.	06316	03284	00270	-----	-----	-----	00407	05432	06487	00420	00393	00375	-----	-----	00453	04382	06368	00342	03312	00327	00355	06358	04343	00359	00424	00422	00425	00391	06411	06374		377

The spectrophotometer measures the total amount of ozone in the atmosphere, i e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded $Q Q Q$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code λS designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, April 1963.



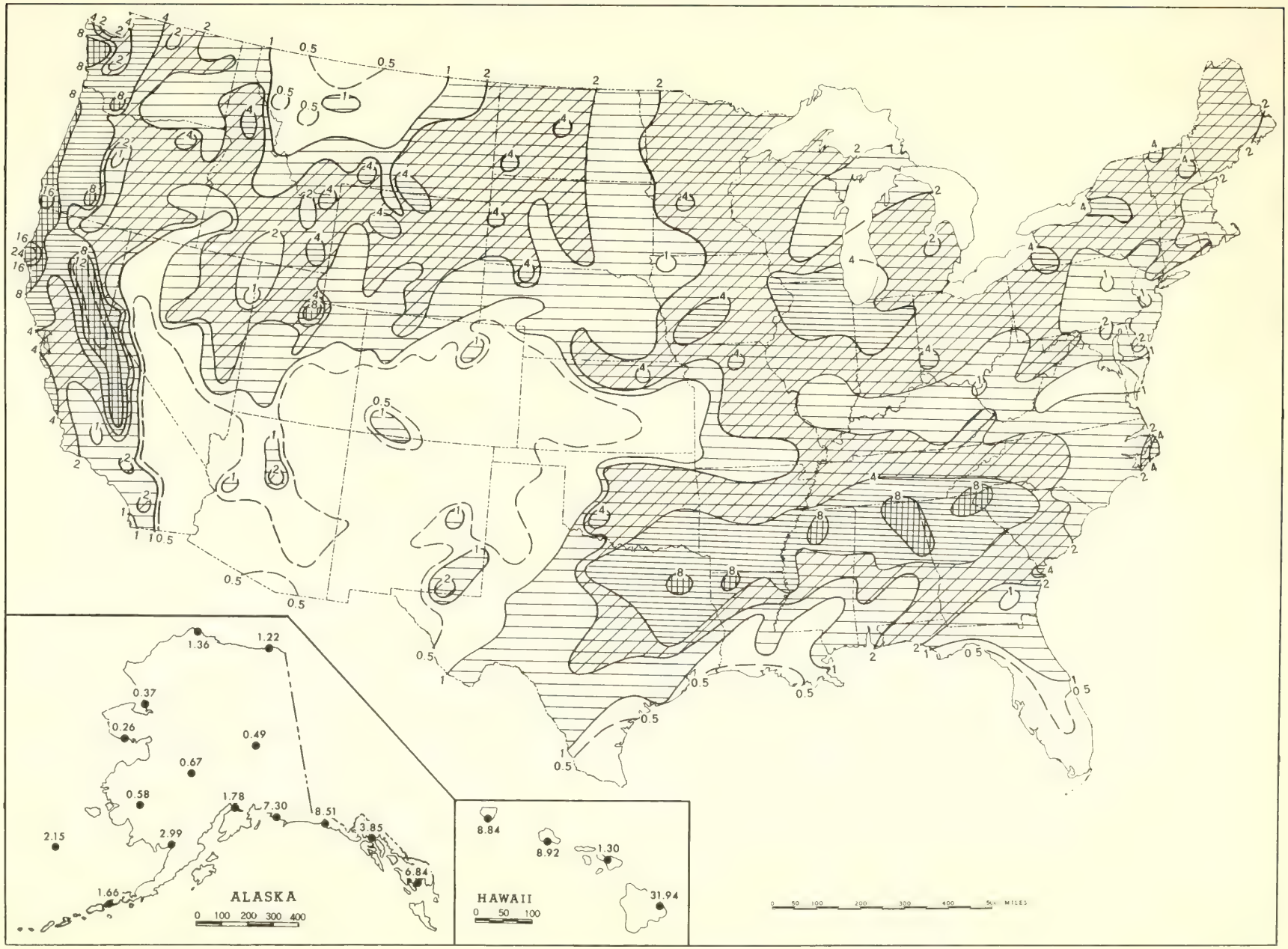
B. Departure of Average Temperature from Normal (°F.), April 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

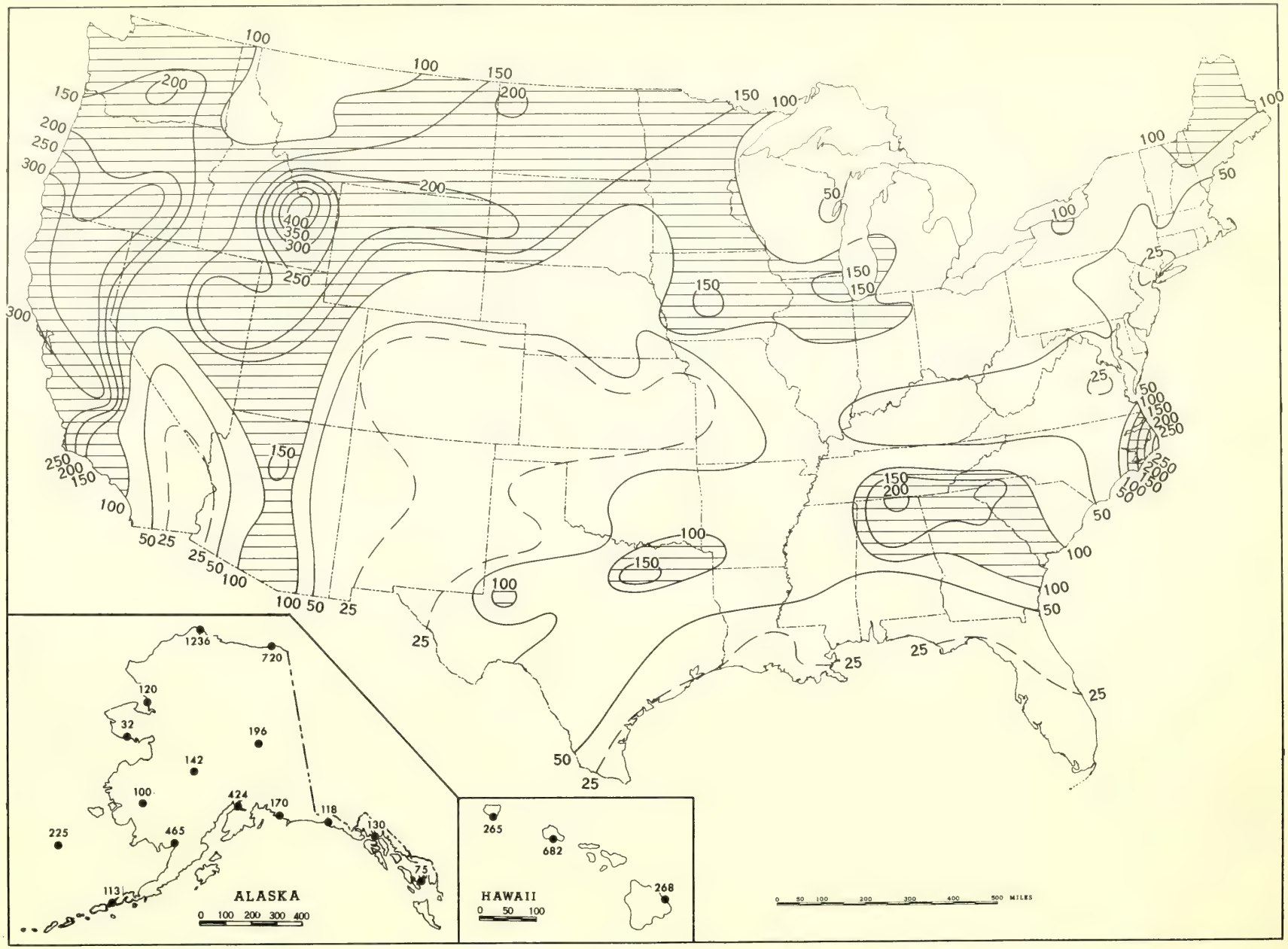
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), April 1963.



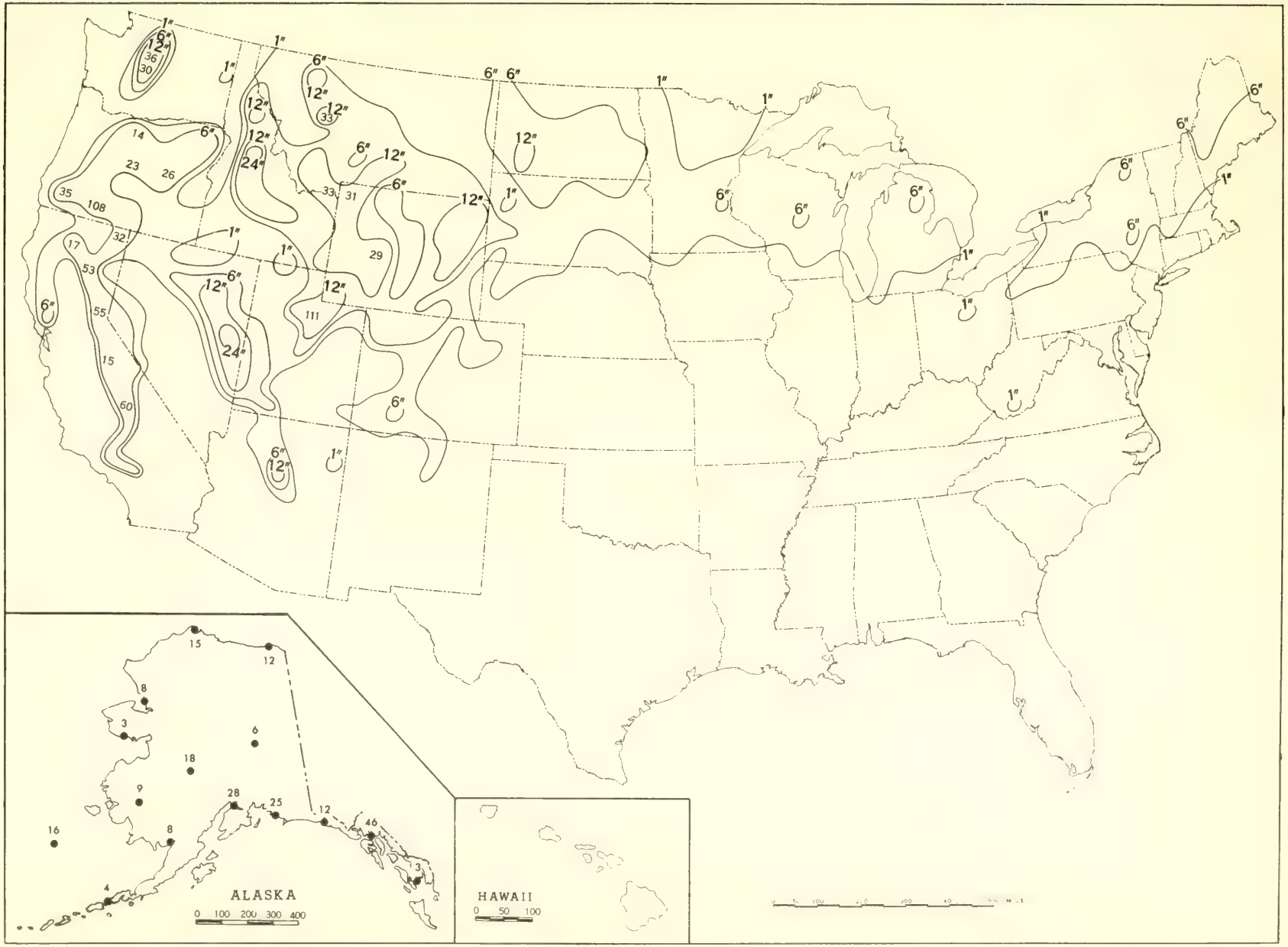
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, April 1963.



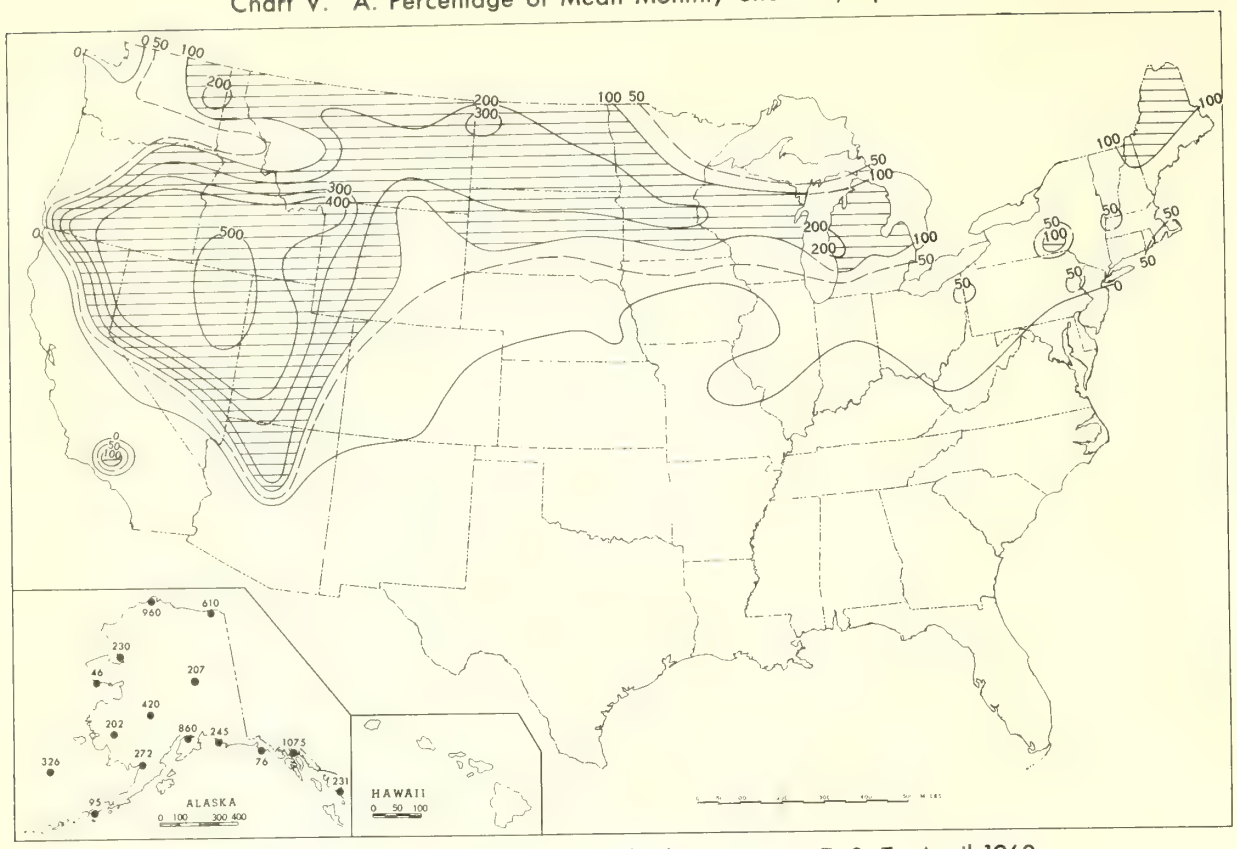
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), April 1963.

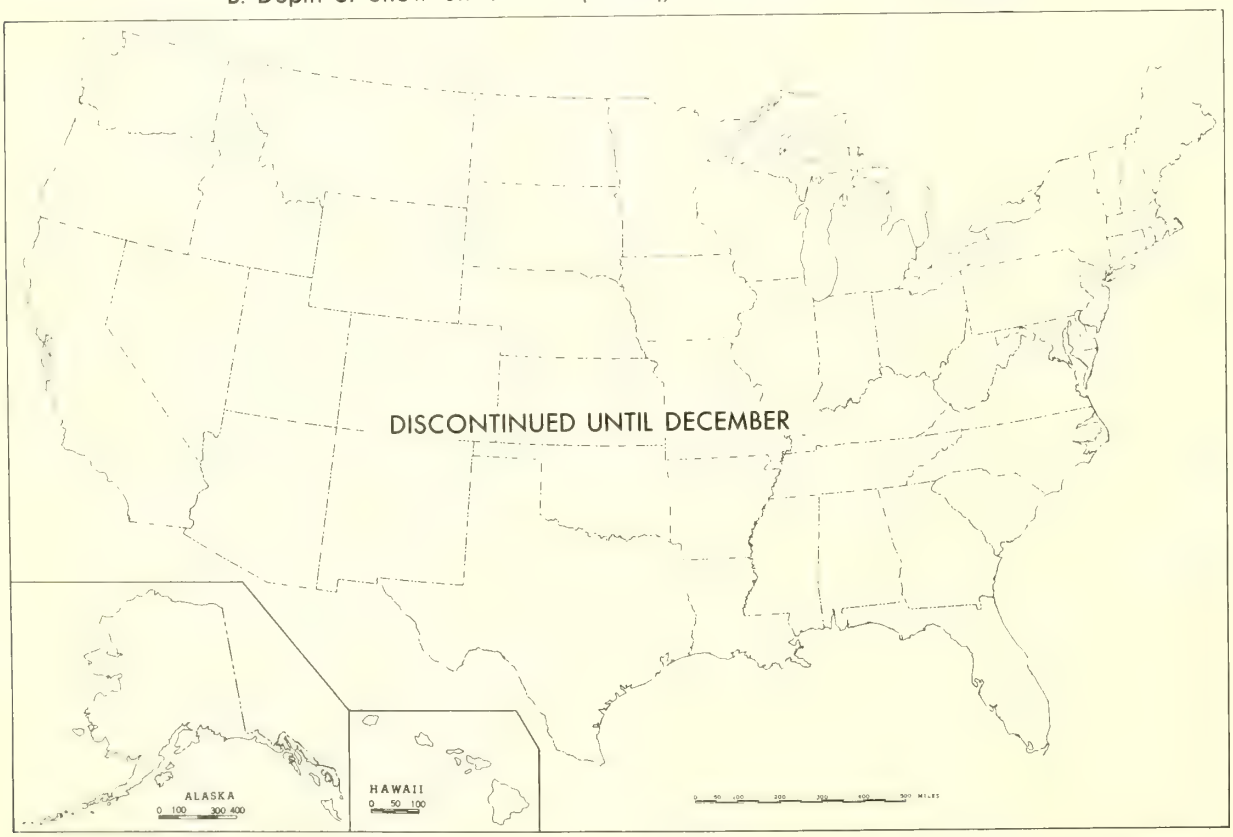


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, April 1963.

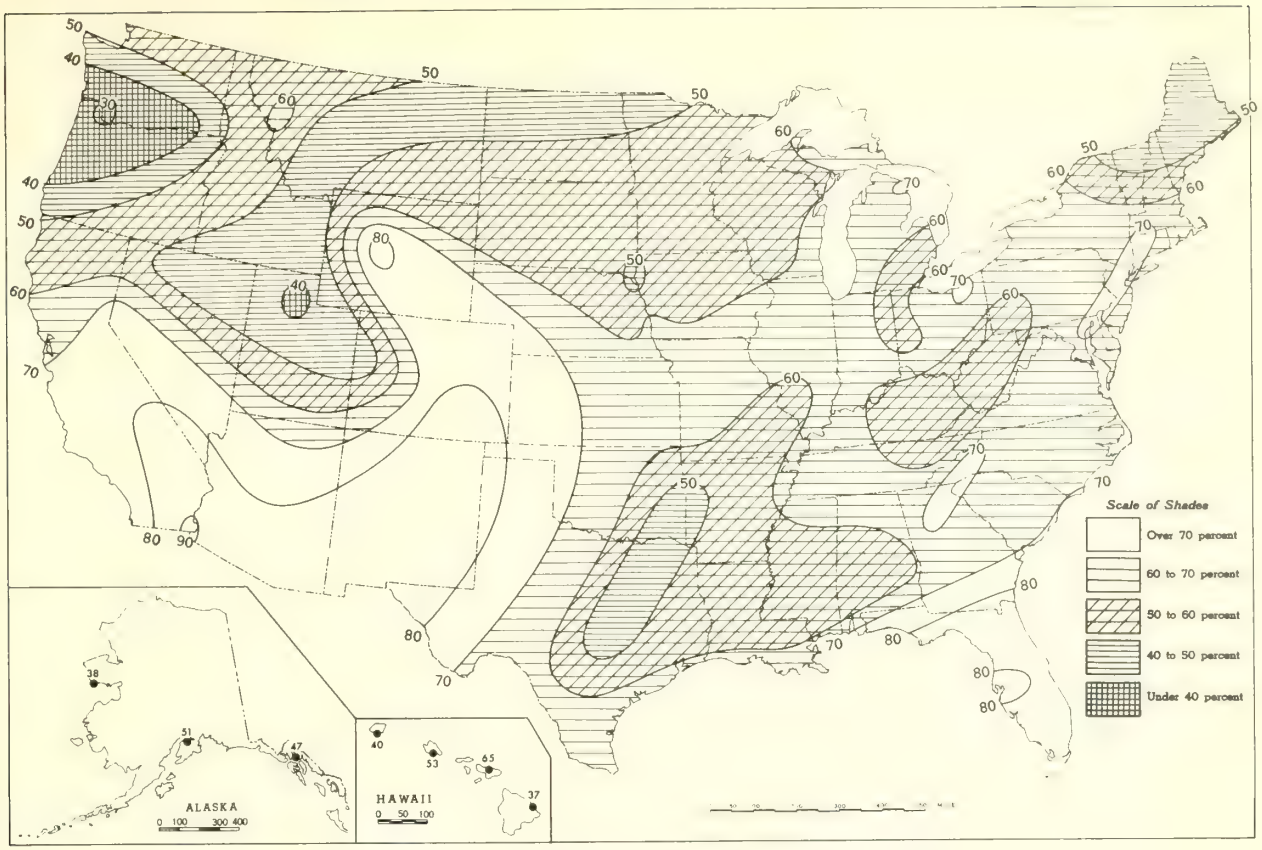


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., April 1963.

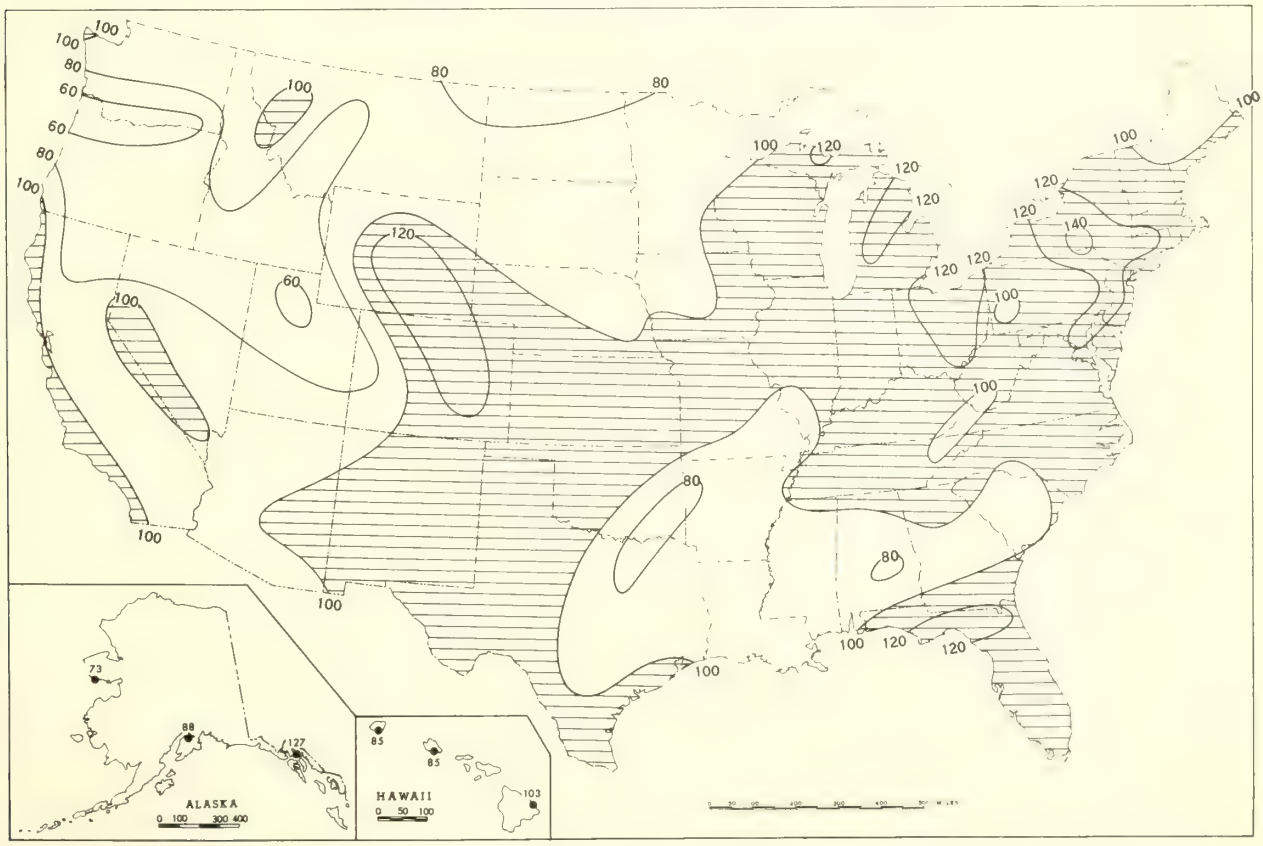


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, April 1963.

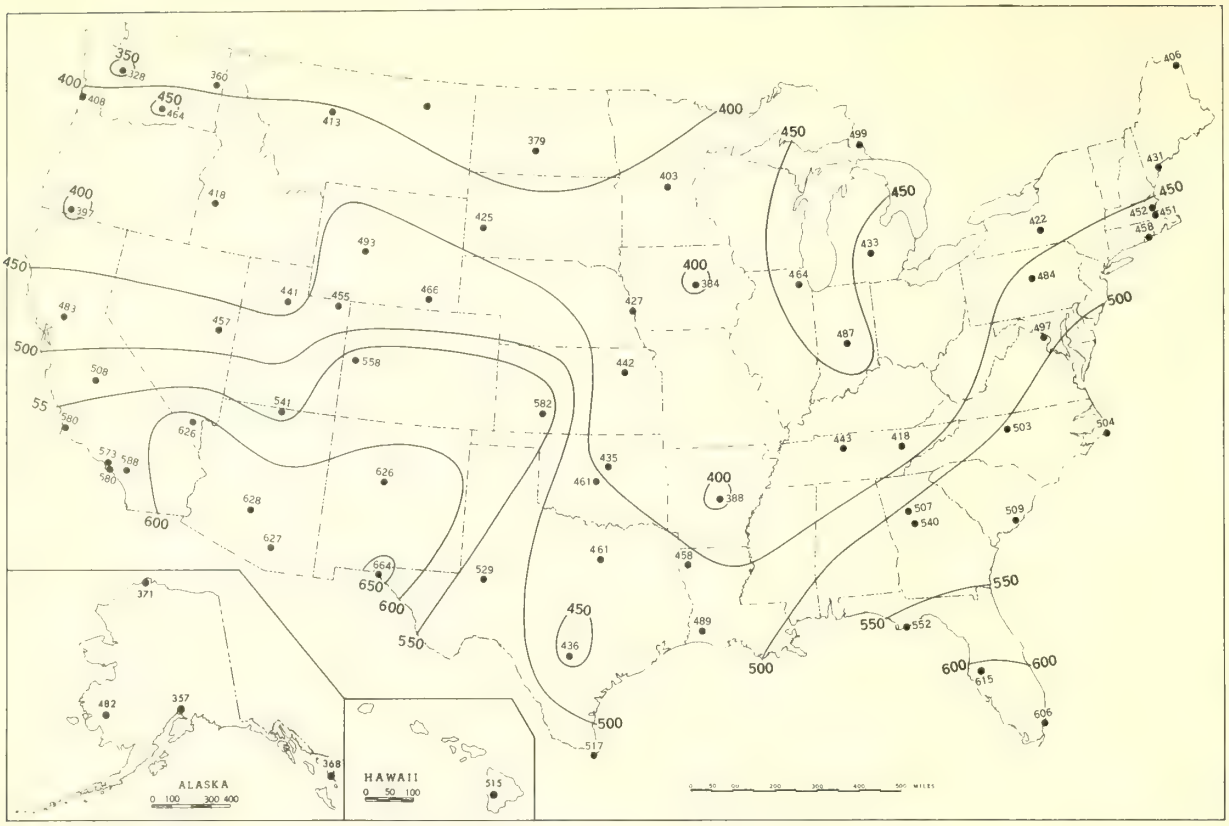


B. Percentage of Mean Monthly Sunshine, April 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, April 1963.

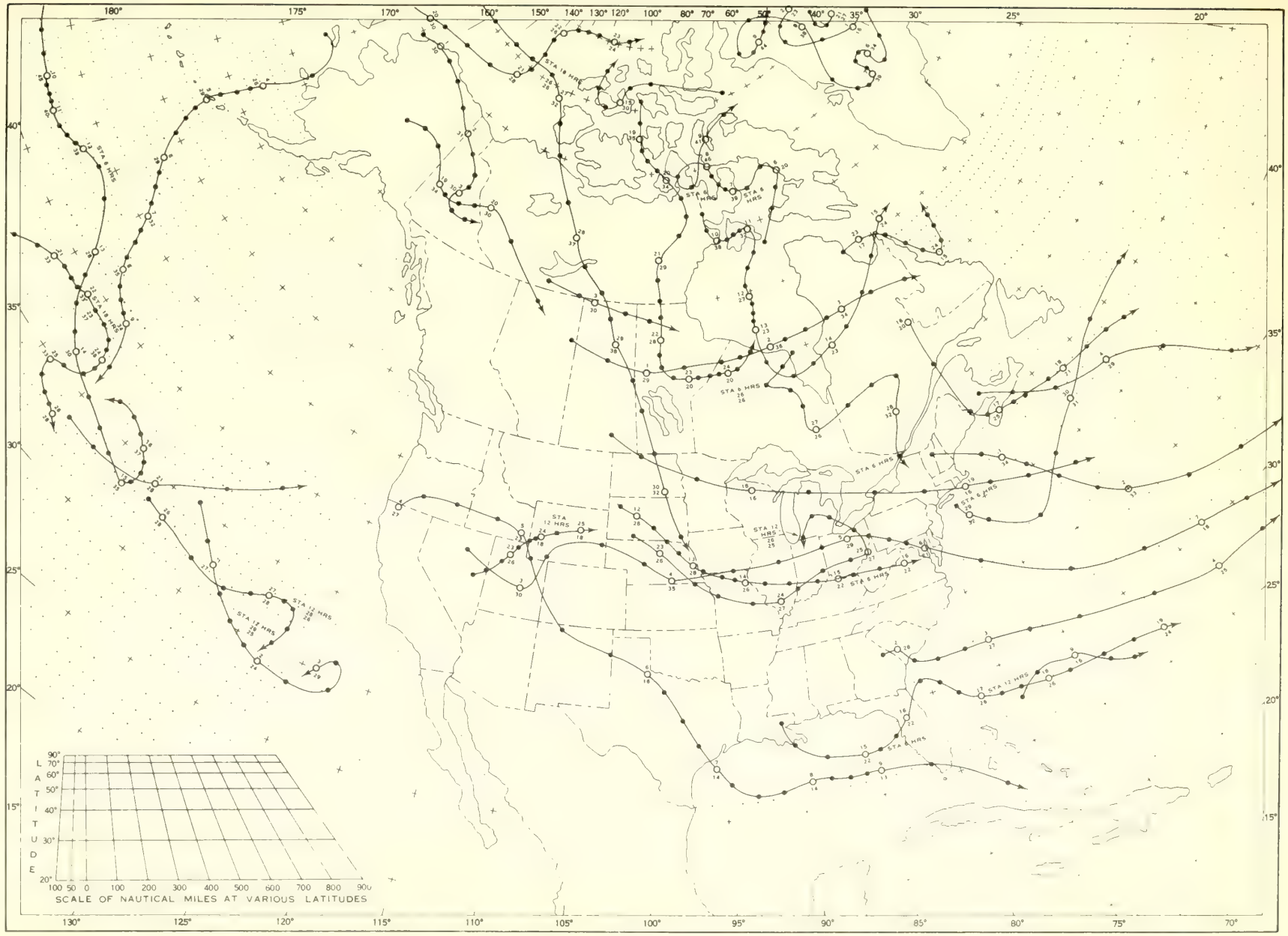


B. Percentage of Mean Daily Solar Radiation, April 1963.



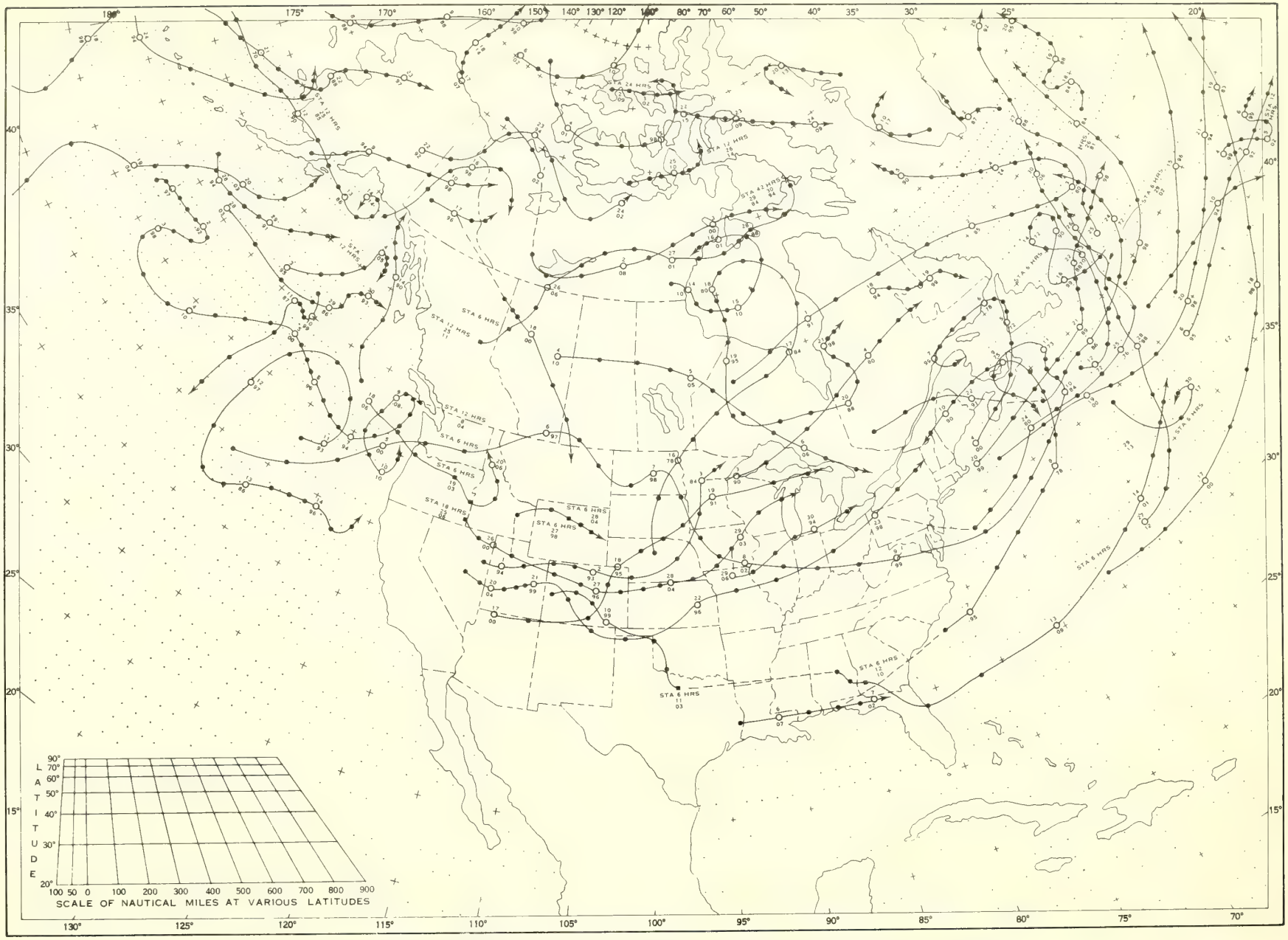
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, April 1963.



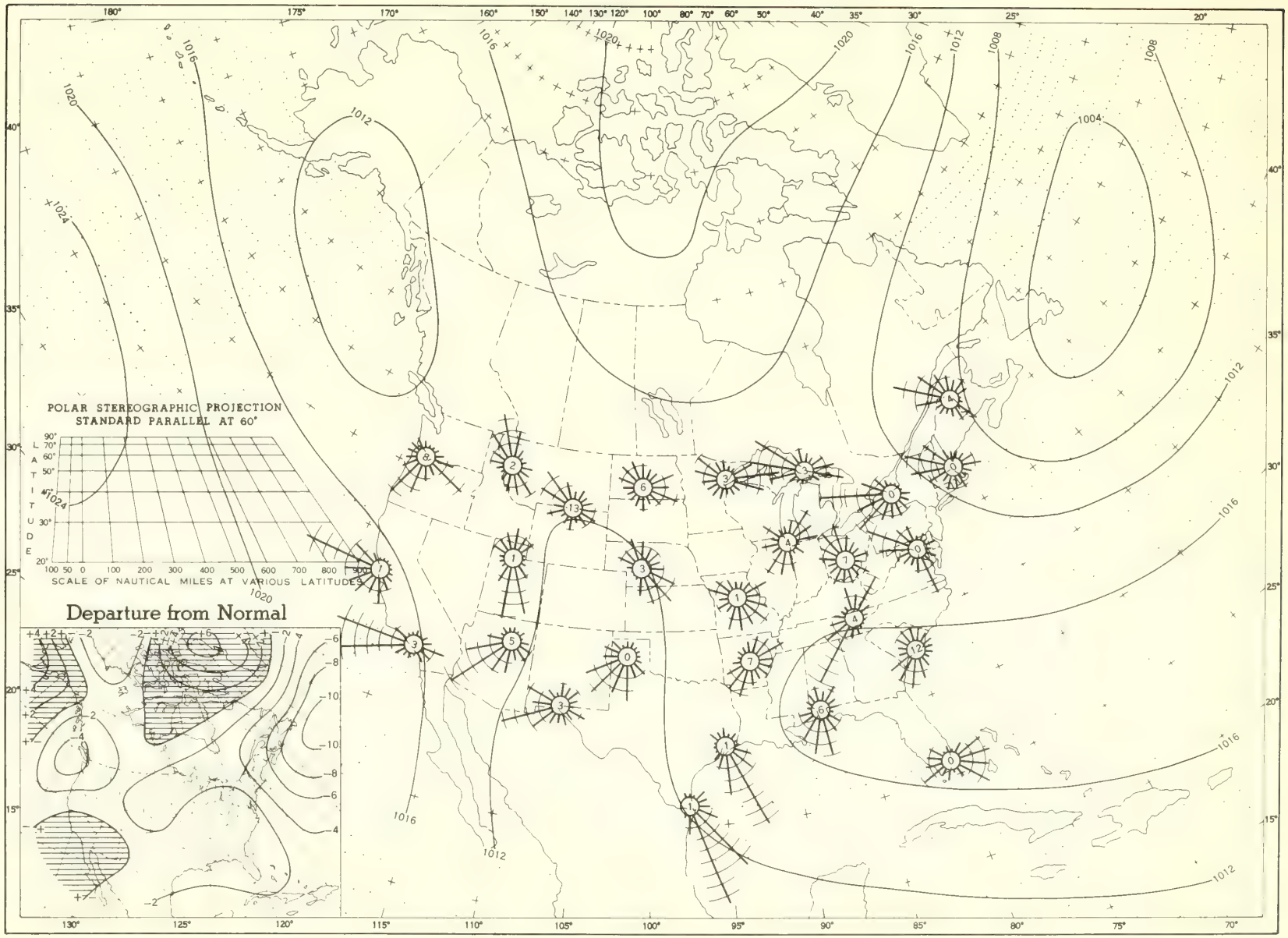
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, April 1963.



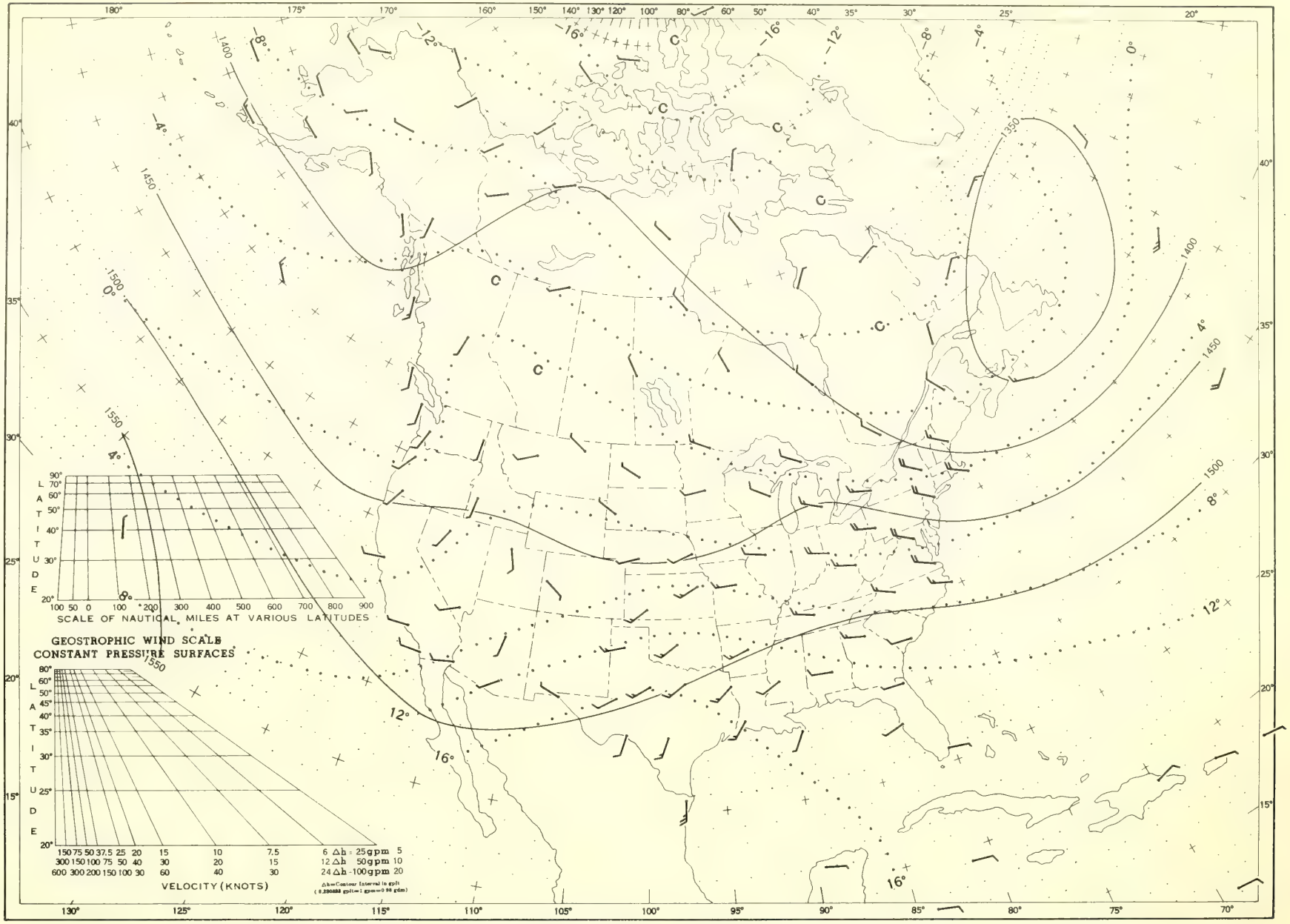
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, April 1963. Inset: Departure of Average Pressure (mb.) from Normal, April 1963.



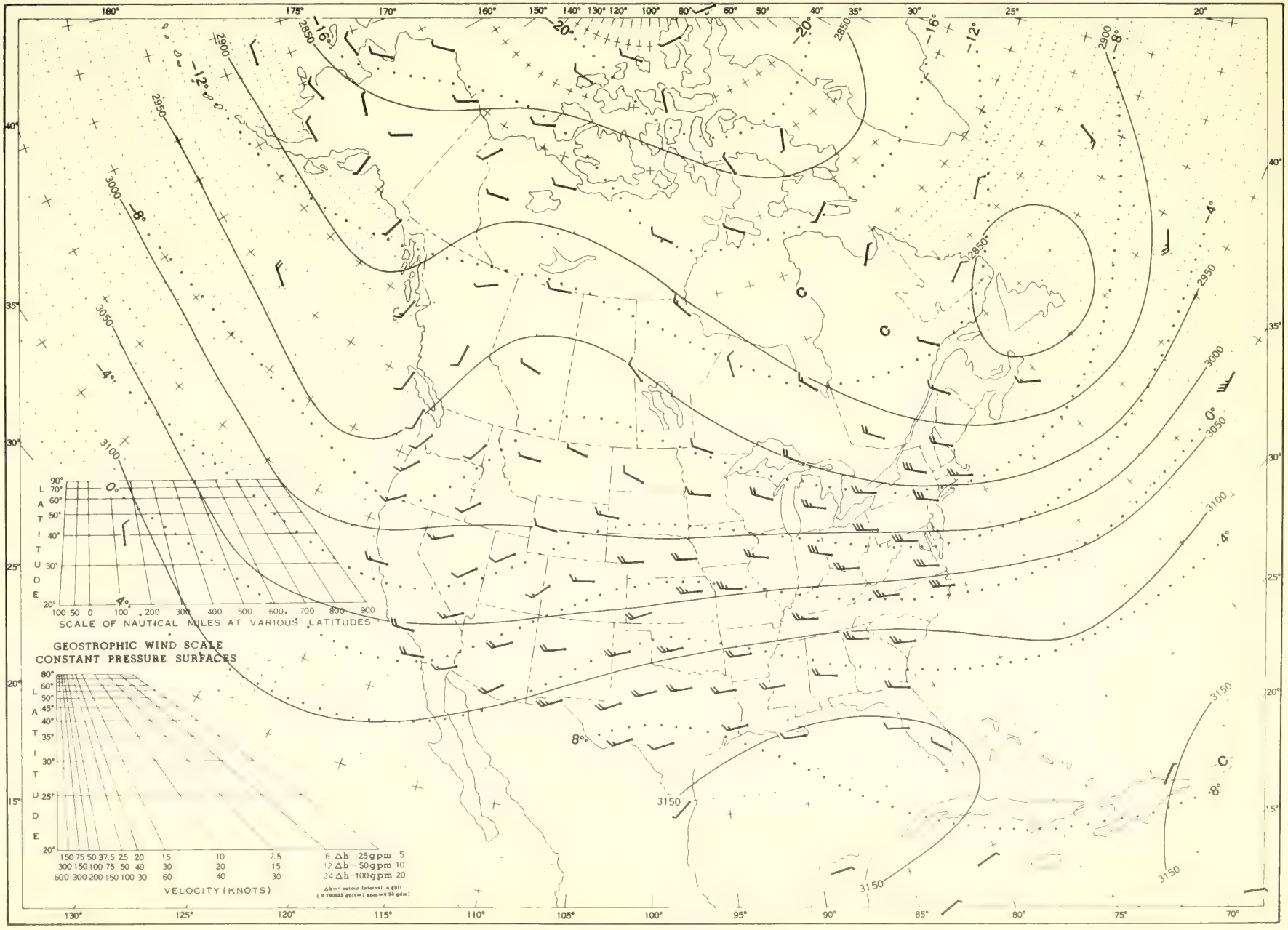
Average sea level pressures are obtained from the averages of the 7:00 a. m. and 7:00 p. m. E. S. T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.



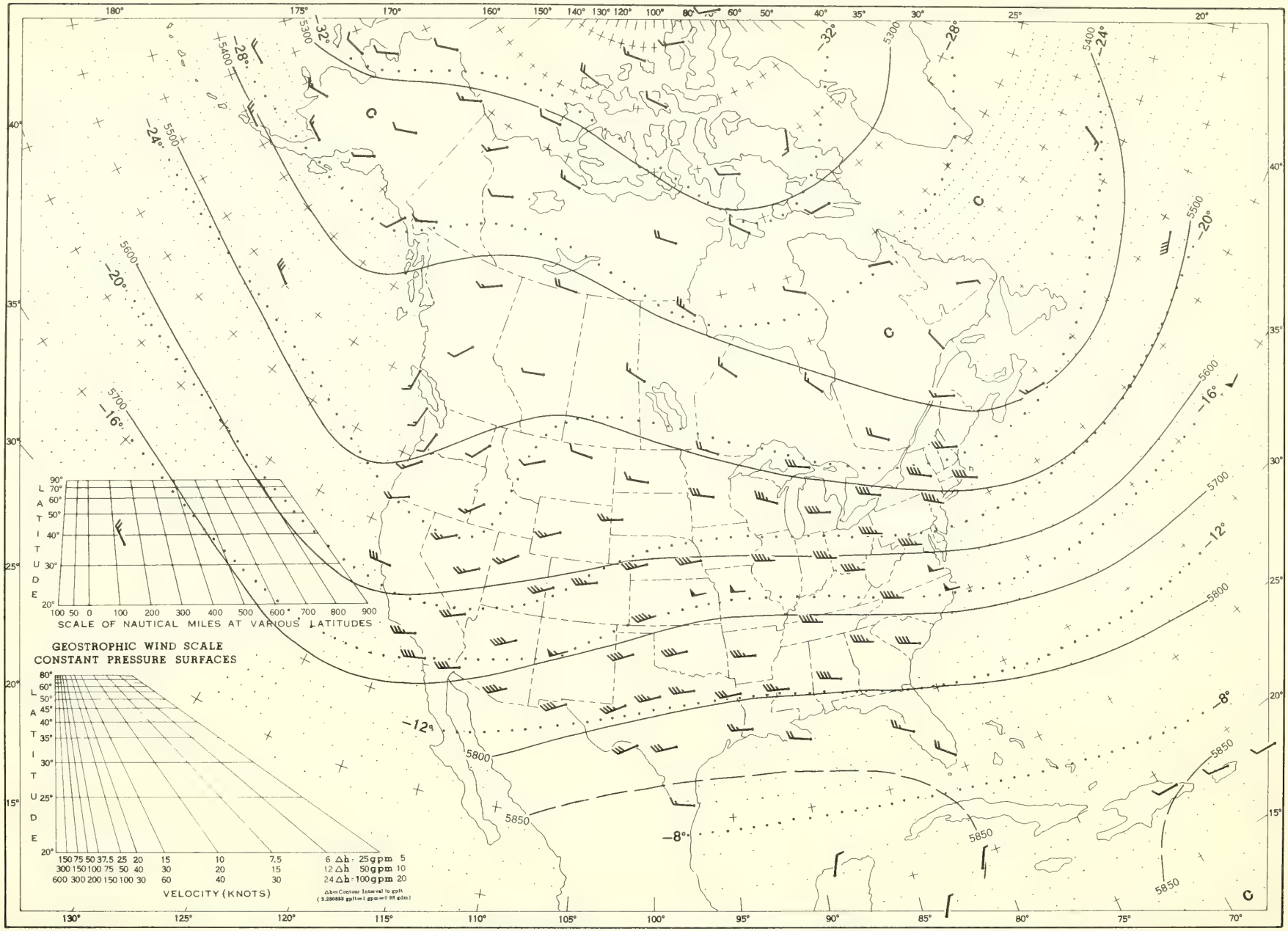
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.



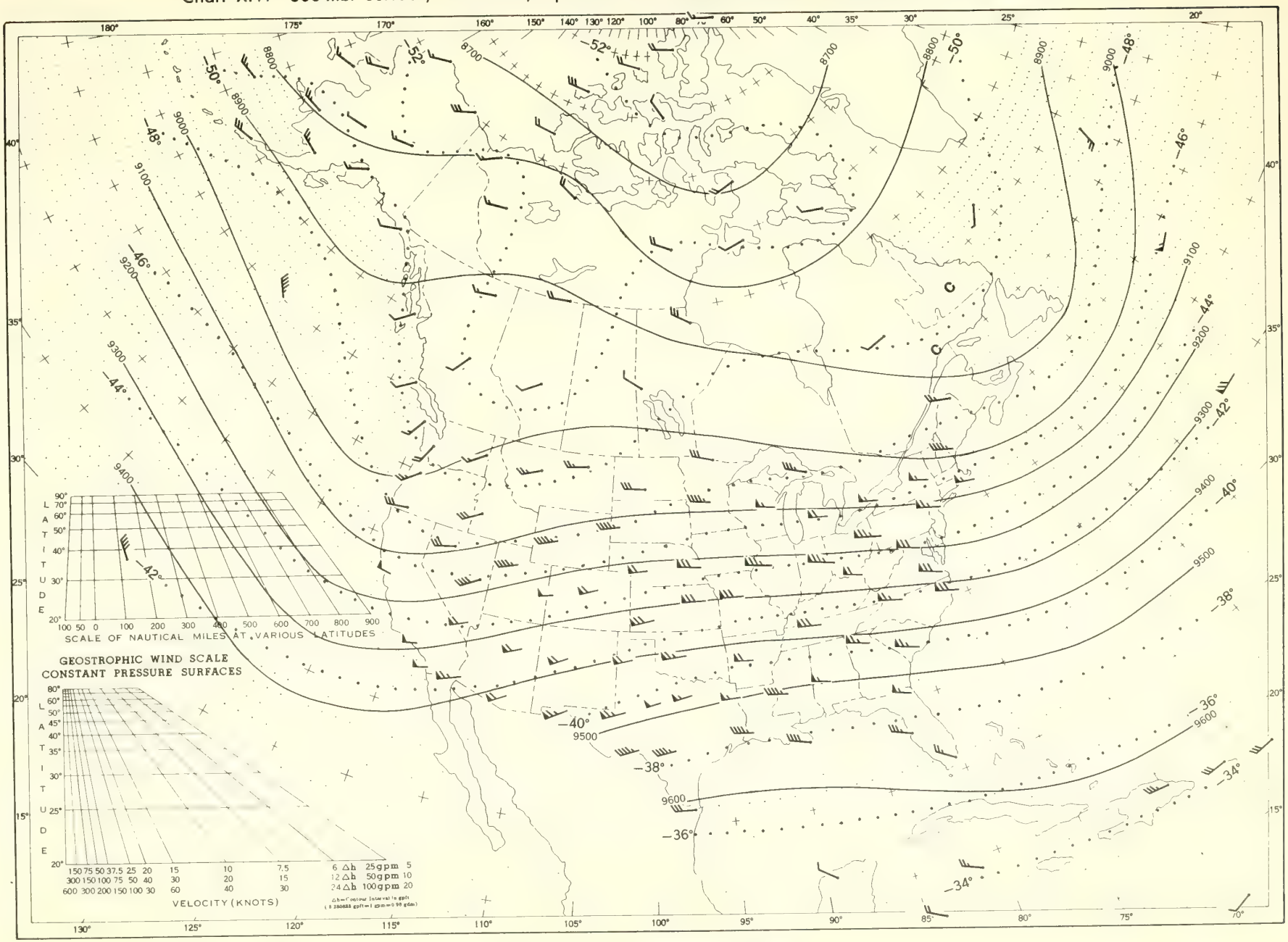
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.



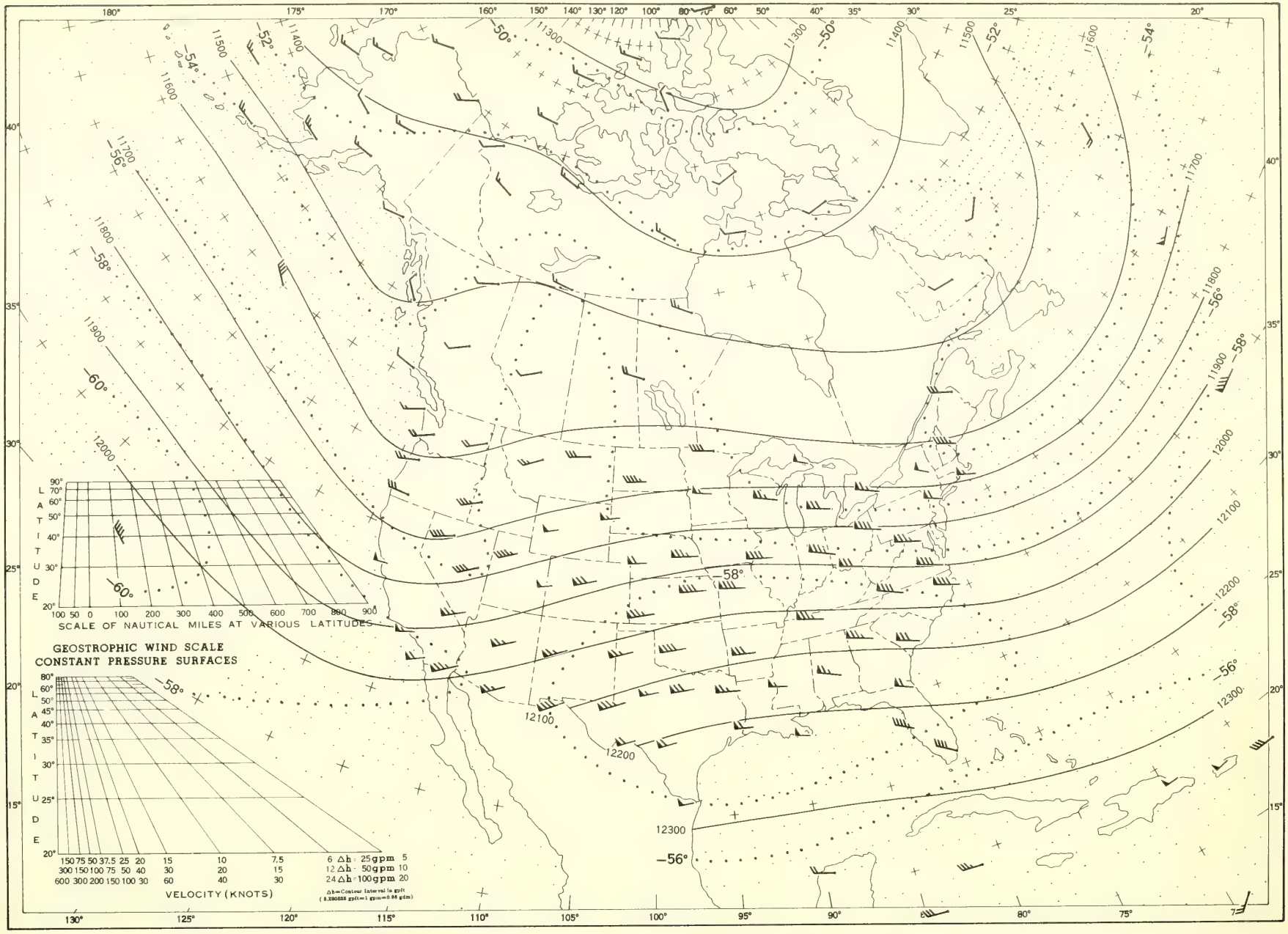
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.



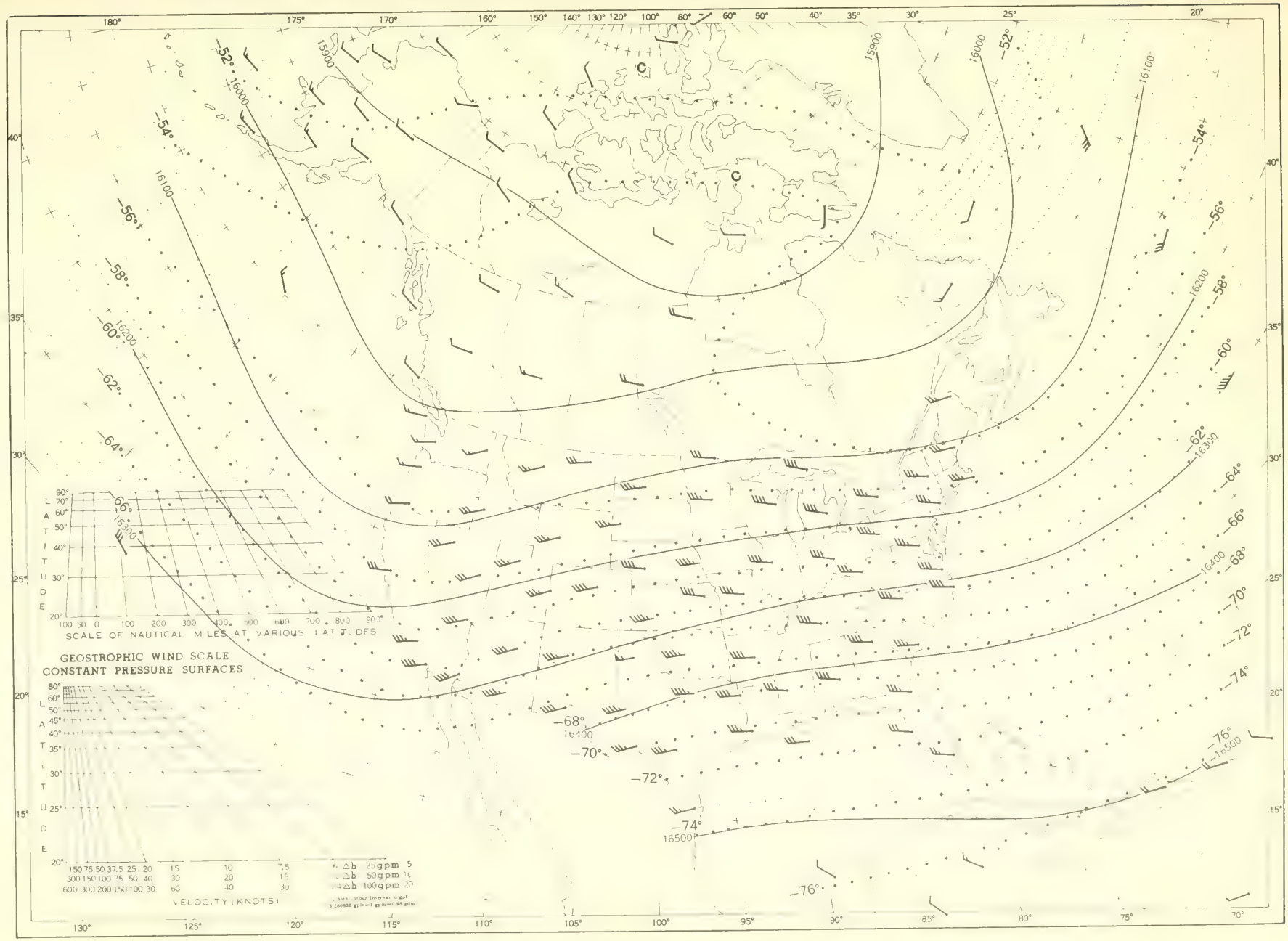
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.



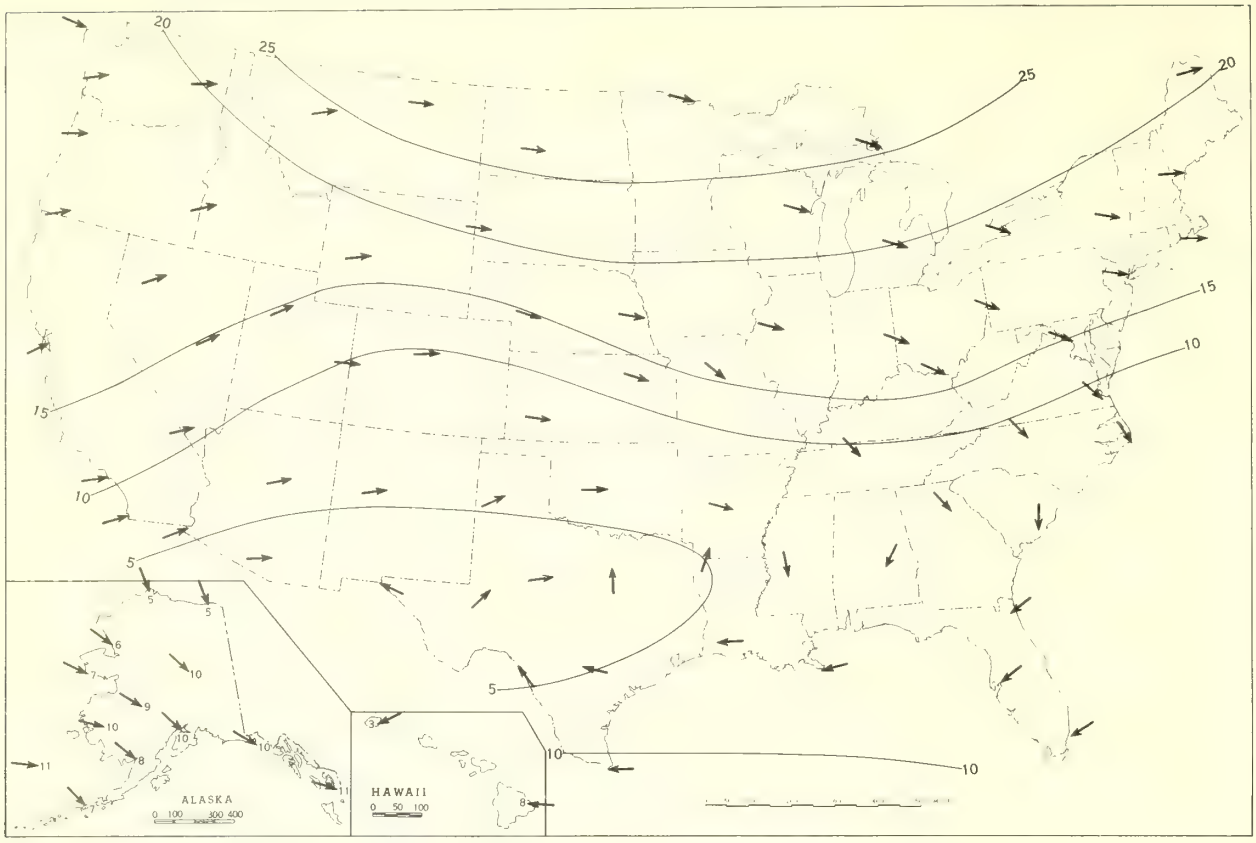
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, April 1963. Average Height and Temperature, and Resultant Winds.

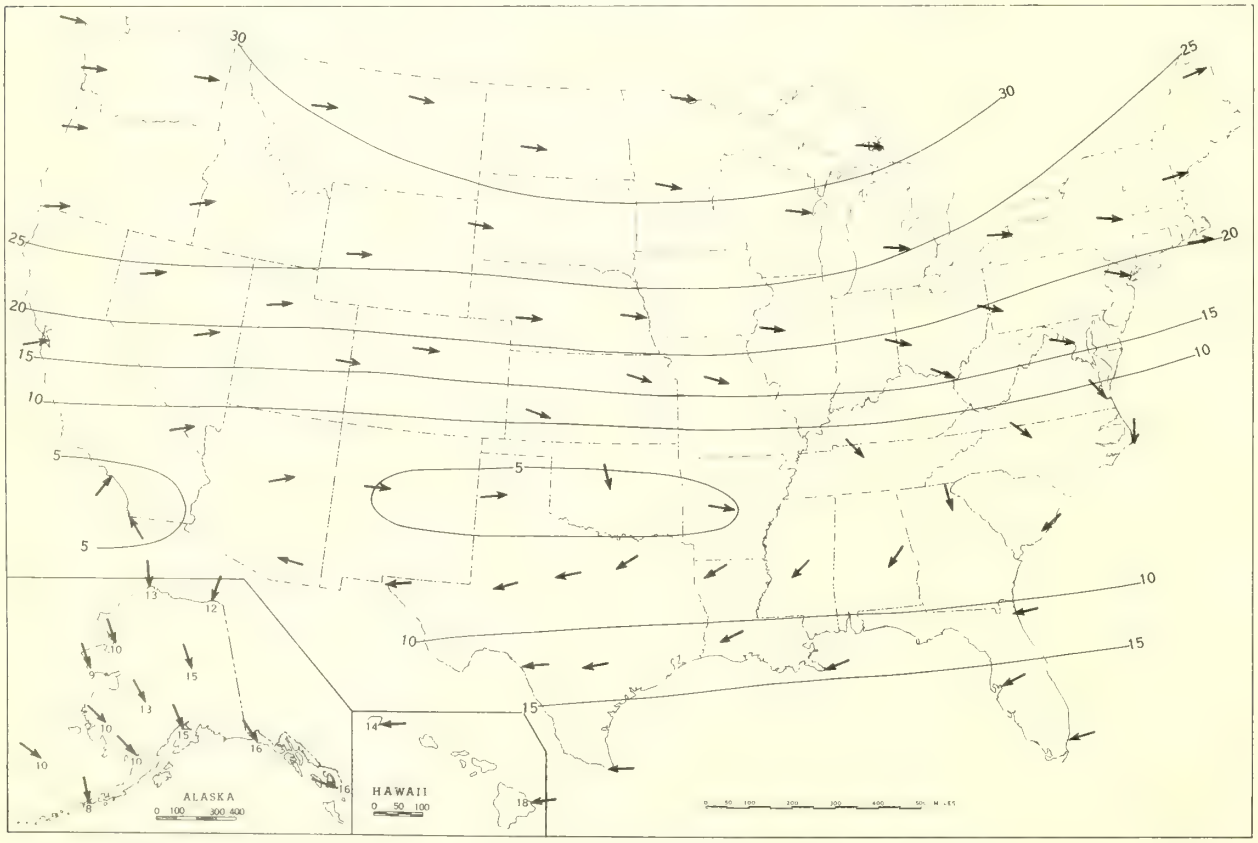


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, April 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, April 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM--WB--ASHEVILLE---7-24-63---1825

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
F. W. REICHELDERFER, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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MAY 1963
Volume 14 No. 5

ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 5 MAY 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

At the beginning of May, cold air was pushing southward over the eastern half of the Nation. It brought record-low temperatures to numerous locations from Kansas to Tennessee and northeastward. A few flakes of snow fell in Pennsylvania, Maryland, Washington, D. C., and northeastward through New England.

Meanwhile, gusty southerly winds brought summer temperatures, increasing cloudiness, and scattered thunderstorms to the Great Plains. Cool, wet weather prevailed in the Far Northwest.

Warm weather spread eastward from the Great Plains early in the second week of May and numerous stations over the central and eastern United States registered record-breaking high temperatures on the 8th or 9th. On May 9, the temperature at Washington National Airport reached 96°, the highest temperature ever recorded in May at that location.

Cool, rainy weather continued in the Far Northwest. Temperatures at Portland, Oreg., averaged below normal on each of the first 13 days of the month. Rain fell at Roseburg, Ore., on each of the first 11 days. Hot, dry weather continued in the Southwest. Temperatures at Tucson, Ariz., averaged above normal on each of the first 12 days of May, and the only rain in the entire month was a light sprinkle on the 15th. Although humid air prevailed over the southern Plains, wide areas over the southern Plains and the lower Mississippi Valley, as well as the southwestern deserts and southern Rockies, received no rain.

Shortly before midmonth, another batch of cool Canadian air began pouring over the border into the northern tier of States producing general cloudiness from Washington to Maine. This put the warm air in full retreat. Widespread thundershowers occurred in the North Central and Northeast. Snow fell in the northern Rockies and in northern New England. Seven inches fell at Farmington, Maine, and 4 inches at Corinna, Maine. A fall of 1.5 inches in the hills of northwestern Connecticut set a new record for the State for so late in the season.

The front continued southward setting off thunderstorms, some accompanied by hail, as it progressed. Hail, with some stones as large as baseballs, fell on May 10 a few miles east of Evansville, Ind. Hail of similar size fell in Marshall County, Kans. Heavy hail fell near Benkelman, Nebr., and hail in Spartanburg County, S. C., destroyed 1,000 acres of peaches and damaged 2,000 acres more.

As the front approached the Gulf, a mass of cold air centered over South Dakota and Nebraska tumbled the temperatures over the North Central and Northeast to set more new records on May 21, 22, and 23. Frosts occurred as far south as St. Louis, Mo. Frost damaged corn at Columbia, Mo., on the 22d, killed 20 to 30 percent of the field tomatoes in the Toledo, Ohio, area on the 23d, and damaged strawberries near Syracuse, N. Y., on the 24th. The high pressure area moved out to the Atlantic, and the Northeast recovered from the low temperatures shortly before the end of the month. Thunderstorms occurred in the Ohio and Mississippi Valleys, in the Deep South, and along the Atlantic coast. Scattered thunderstorms broke out in the Rockies. Other areas of thunderstorms were the Great Plains and the Pacific coast. The month ended with warm temperatures over much of the Nation.

Temperatures for May averaged below normal over most of the area northeast of a line from Spokane, Wash., to Jacksonville, Fla., and along the Pacific coast from the mouth of the Columbia River to San Diego. Elsewhere, temperatures averaged above normal. Temperature departures ranged from -4° in the extreme northwest corner of North Dakota, in the extreme northwest corner of Vermont, and the eastern edge of North Carolina, to +4° in central Nevada, in northern, western, and eastern Colorado, and in a small area south of Tucson, Ariz.

A few widely scattered areas received more than 6 inches of rain during May. Most of the Country east of 104° west longitude received more than 2 inches. Wide areas in Arizona, Utah, Colorado, New Mexico, and California received no rain or only light scattered showers.

The outstanding features of the month were the cold temperatures and snow over the Northeast on the 1st, the record-breaking high temperatures over the North Central and Northeast on the 8th and 9th, and the late frosts on the 22d to 24th.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	98	16+	Valley Head	30	2	Haleyville	9.42	Fort Morgan	0.42
Alaska	Annette WBAP	88	21	Kotzebue WBAP	5	3	Cordova	17.69	3 Stations	.00
Arizona	Montezuma	111	22	Fort Valley	16	12	Sanders 11ESE	.32	131 Stations	.00
Arkansas	2 Stations	95	20+	Gravette	27	1	2 Stations	8.36	Athens	.31
California	Death Valley	110	18	White Mountain 2	2	11	Gasquet Ranger Station	9.96	106 Stations	.00
Colorado	3 Stations	101	9+	Fraser	12	13	Fleming 1S	3.95	Arboles	.00
Connecticut	Hartford WBAP	91	9	Coventry	23	13	Ansonia	6.07	Torrington	1.49
Delaware	Milford 3WNW	96	4	2 Stations	32	24+	Selbyville	3.86	Wilmington Ncastle WBAP	1.23
Florida	2 Stations	99	17+	3 Stations	40	7+	Indian Lake Estates	13.61	Dry Tortugas	.42
Georgia	3 Stations	97	11+	Blairsville Exp Station	25	2	Tifton Exp Station	9.40	Columbus WBAP	1.17
Hawaii	do	88	31+	Mauna Loa Slope Obs.	28	25+	Puohokamoa 2 343	52.27	2 Stations	.39
Idaho	2 Stations	94	22+	Blackfoot 2SSW	18	2	Island Park Dam	5.52	Conda	.30
Illinois	do	94	10+	Marengo	25	1	Alton Dam 26	6.52	Chenoa	.78
Indiana	do	93	10	2 Stations	22	1	Newberry	6.19	Fowler	.83
Iowa	do	94	9+	Sanborn	22	22	Charles City	6.25	Rock Rapids	.42
Kansas	Ashland	104	10	Topeka WBAP	26	1	Horton	7.41	Hoxie	.59
Kentucky	Pikeville	93	9	4 Stations	24	2+	Manchester 4SE	8.10	Rochester Lock 3	1.38
Louisiana	Book	99	15	3 Stations	41	23+	Elizabeth 1NW	6.01	Pontchartrain Causeway	.19
Maine	Sanford 2NNW	85	9	Squa Pan Dam	20	6	Bar Harbor	6.96	Middle Dam	1.94
Maryland	Waldorf Police Brks.	98	11	Oakland 1SE	23	3	Prince Frederick	6.30	Potomac Filter Plant	.85
Massachusetts	Lowell	92	9	West Cummington	25	13	Edgartown	8.11	East Pepperell	1.87
Michigan	Monroe Sewage Plant	89	9	3 Stations	17	11+	Boyne Falls	7.41	Lanse 2S	1.27
Minnesota	2 Stations	92	8+	Cotton 7E	16	11	Hutchinson 1N	7.05	High Landing	1.15
Mississippi	7 Stations	96	25+	Hickory Flat 1WNW	34	2	Standard	9.60	Montrose	.04
Missouri	3 Stations	96	15+	2 Stations	25	1	Willow Springs	11.36	Memphis	2.30
Montana	Loma 1WNW	92	31+	Boyes	14	21	2 Stations	4.50	Missoula WBAP	.25
Nebraska	Franklin	96	8	Nenzel 20S	20	22	Nebraska City	6.00	Minden	.32
Nevada	Overton	106	10	Mt Rose Highway Sta	18	9	Vya	3.76	8 Stations	.00
New Hampshire	Windham	87	9	Grafton	22	24	Tamworth 2	4.08	Lebanon FAA Airport	1.97
New Jersey	Hammondton 2NNE	94	10	3 Stations	28	24+	Long Branch	4.63	Princeton Water Works	.69
New Mexico	Carlsbad FAA AP	102	11	2 Stations	17	13	Tatum 1SSW	4.63	28 Stations	.00
New York	Poughkeepsie	95	9	Franklinville	15	11+	Highmarket	6.05	Canaseraga	.56
North Carolina	4 Stations	98	11+	2 Stations	23	2	Wilmington WBAP	8.68	Canton 1SW	1.39
North Dakota	Valley City	92	7	Wishek	14	22	Richardton Abbey	7.16	Beach	.87
Ohio	2 Stations	94	10	Tom Jenkins Dam	22	2	Ripley Exp Farm	4.96	Cleveland WBAP	1.00
Oklahoma	Magnum Research Station	106	10	Grove 1E	29	1	Moravia 2NNE	6.34	Daisy 2ENE	.34
Oregon	Molalla 1NW	101	20	Crater Lake NP Hqs	16	12	Brookings	14.15	Crescent Lake	.23
Pennsylvania	Farrell Sharon	97	9	Coudersport 3NW	14	6	Long Pond 2W	6.86	New Station	.76
Puerto Rico	2 Stations	94	23+	3 Stations	59	8+	Maricao	25.13	Melania Dam	1.04
Rhode Island	Providence WBAP	88	9	Greenville	31	24+	Kingston	4.82	Greenville	3.29
South Carolina	2 Stations	99	12+	3 Stations	28	2	McCall	6.47	Sullivans Island	.77
South Dakota	do	96	25+	Custer	15	21	La Delle 7NE	6.31	McIntosh	.28
Tennessee	do	93	12+	Mountain City 2	22	2	Unicoi 2ESE	6.45	Neptune 3S	1.40
Texas	Castolon	106	11	Gruver	36	1	Farmersville	11.42	4 Stations	.00
Utah	St George PH	98	20+	Bryce Canyon FAA AP	18	12	Park Valley	2.55	11 Stations	.00
Vermont	Vernon	85	10	North Danville	20	12	Wardsboro	5.10	Montpelier FAA Airport	1.75
Virginia	Newport News Press Bldg	98	10	Peaks of Otter	19	1	Williamsburg 2N	7.20	Quantico 1S	.58
Washington	Packwood	97	29	Mount Spokane Summit	17	4	Washougal 8ENE	6.55	Stockdill Ranch	.12
West Virginia	2 Stations	95	10+	Birch River 6SSW	17	2	Pickens 1	6.04	Mathias	.65
Wisconsin	St Croix Falls	89	7	Necedah 2NNW	17	1	Eau Claire FAA AP	5.15	Bayfield 6N	.76
Wyoming	2 Stations	90	8+	Foxpark	15	20	Alta 1NNW	3.98	Wamsutter 1N	.05

\+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	°F.	°F.		F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	993.6	1018.8	82	60	70.5	- 0.2	91	16	38	2	1	0	59	69	3.72	- 0.30	2.06	6	7	0.0	0	8.4	E	33	W	28	8	10	13	6.3	67
HUNTSVILLE	605	995.6	1018.7	82	58	69.8	- 0.6	93	16	38	2+	3	0	57	66	3.09	- 0.30	2.07	8	5	0.0	0	8.1	SE	35*	NNE	22	9	12	10	5.9	
MOBILE	211	1015.6	1017.9	87	66	76.1	2.0	94	12	52	2	9	0	65	73	2.02	- 2.86	0.85	7	7	0.0	0	7.5	SW	51*	NW	7	6	19	6	5.6	
MONTGOMERY	195	1010.1	1018.3	86	63	74.3	1.9	93	16+	44	2	11	0	61	67	3.06	- 0.41	1.80	5	4	0.0	0	7.8	E	29	N	26+	9	12	10	5.7	61
ALASKA												8																				
ANCHORAGE	90	1008.6	1013.5	56	38	46.9	1.0	72	29	27	2	2	7	33	61	0.44	- 0.08	0.32	5	0	3.9	T	6.7	SSE	29*	SE	22	7	11	13	6.4	59
ANNETTE	110	1012.4	1016.4	58	43	50.6	1.9	88	21	34	2	3	0	41	73	3.67	- 3.40	0.63	14	0	T	T	7.1	SE	24*	SE	13	4	10	17	7.3	
BARROW	22	1016.6	1017.2	29	22	25.5	7.1	39	28+	13	5	0	31	23	89	0.32	- 0.20	0.11	11	0	3.6	25	11.9	E	35*	ENE	6	1	4	26	8.9	
BARTER ISLAND	39	1015.4	1017.4	32	22	27.0	6.3	45	20	13	6+	0	31	24	85	0.09	- 0.16	0.04	6	0	0.9	34	9.3	F	30*	WNW	25	1	4	26	8.9	
BETHEL	125	1010.8	1012.2	49	33	40.6	1.6	70	30	20	1	1	15	35	83	1.32	- 0.37	0.43	12	0	3.1	2	12.3	S	32*	SSW	6	2	8	21	8.2	
COLD BAY	94	1009.7	1013.5	46	36	40.8	1.3	58	29	26	11	0	7	36	83	1.32	- 0.97	0.51	14	0	0.9	T	16.1	SSE	43*	SSE	20	0	5	26	9.0	
CORDOVA	40	1012.7	1014.3	54	36	45.0	1.3	69	19	29	6+	0	8	39	80	6.66	1.60	1.42	15	0	0.8	T	6.6	ESE	22*	ESE	13	5	6	20	7.4	
FAIRBANKS	436	995.9	1013.0	61	38	49.4	2.3	84	22	27	6	8	5	31	51	0.11	- 0.60	0.09	3	0	T	5	6.8	SSW	22*	NNE	23	9	8	14	6.1	
JUNEAU	17	1015.7	1015.7	59	39	48.7	3.1	77	21	30	2	2	4	37	67	2.02	- 1.22	0.64	11	0	0.0	0	9.3	ESE	40*	ESE	29	7	5	19	7.1	51
KING SALMON	43	1011.1	1012.5	53	34	43.5	0.2	70	29	25	2	1	11	34	72	1.09	0.13	0.30	12	0	2.8	T	10.4	E	28*	E	17	4	3	24	7.9	
KOTZEBUE	10	1012.0	1012.4	41	28	34.3	3.4	64	25	5	3	0	18	28	80	0.83	0.50	0.56	7	0	3.1	19	14.4	ESE	37*	SSE	7+	9	7	15	6.4	
MC GRATH	334	999.9	1012.7	56	34	44.9	0.8	74	28+	19	4	5	14	31	61	0.36	- 0.52	0.17	7	1	T	5	6.9	N	25	SSW	7	5	7	19	7.0	
NOME	13	1010.2	1010.9	44	32	37.6	2.6	70	28	17	1	1	18	31	77	0.87	0.18	0.25	9	0	3.9	7	13.7	SE	32*	S	7+	8	7	16	6.6	31
ST. PAUL ISLAND	22	1010.2	1011.0	40	33	36.1	1.3	46	30	27	1	0	12	33	89	1.30	0.00	0.43	12	0	0.2	5	15.3	S	39*	WSW	6	0	3	28	9.2	
SHEMYA	122	1004.0	1015.5	42	37	39.5	1.5	44	21+	33	20	0	0	37	91	1.96	- 0.44	0.42	0	0	T	T	21.5	WSW	46*	S	26+	0	2	29	9.5	
YAKUTAT	28	1014.6	1015.6	54	38	46.0	1.4	79	21	29	5	2	4	39	79	11.65	3.67	2.47	17	0	0.0	0	7.5	E	38*	SE	29	6	4	21	7.3	
ARIZONA																																
FLAGSTAFF	6993	791.1	1014.4	71	34	52.7	1.8	79	18+	24	13+	0	14	20	30	0.05	- 0.46	0.05	1	0	0.0	0	7.9	SSW	29*	SSW	23	15	8	8	4.0	
PHOENIX	1117	971.7	1009.9	98	63	80.0	3.0	105	20+	52	13+	29	0	34	19	T	- 0.13	T	0	0	0.0	0	7.6	ESE	21*	SW	24+	18	7	6	3.2	85
PRESCOTT	5014	847.1	1012.5	80	47	63.7	2.4	88	6	32	12	0	1	22	23	0.01	- 0.23	0.01	1	0	0.0	0	10.8	SW	34	SW	9	18	8	5	3.4	88
TUCSON	2584	924.0	1010.3	93	61	77.3	4.3	100	20	53	12	26	0	23	14	T	- 0.13	T	0	0	0.0	0	9.0	SSE	31	SW	23	17	7	7	3.7	86
WINSLOW	4880	851.4	1012.8	86	47	66.5	1.2	92	18	31	12	6	1	21	20	T	- 0.32	T	0	0	0.0	0	10.7	SW	40*	SW	11	17	5	9	4.1	
YUMA	199	1005.2	1010.2	97	65	81.2	1.1	107	6	54	12	29	0	35	21	0.00	- 0.01	0.00	0	0	0.0	0	6.8	S	21	SE	21	17	11	3	2.9	91
ARKANSAS																																
FORT SMITH	449	1000.3	1017.2	83	60	71.3	1.4	94	11	39	1	7	0	61	71	3.88	- 1.38	1.80	8	6	0.0	0	6.9	ENE	40	NW	16	4	11	16	6.8	58
LITTLE ROCK	257	1004.7	1017.9	83	59	71.4	0.9	92	16	40	2	5	0	59	68	1.29	- 3.99	0.94	7	7	0.0	0	7.2	SW	50	SE	28	2	17	12	6.5	73
TEXARKANA	361	1003.8	1017.4	84	63	73.3	1.7	91	27	46	1	2	0	62	72	4.60	- 0.30	3.13	2	2	0.0	0	9.0	SSW								
CALIFORNIA																																
BAKERSFIELD	494	997.6	1015.0	81	57	69.2	- 1.2	95	17	45	12	5	0	49	52	0.26	0.04	0.25	2	1	0.0	0	8.3	NW	23*	NW	10	11	15	5	4.5	
BISHOP	4108	872.3		81	45	63.0	0.4	94	19	31	11	4	2			0.25	0.05	0.11	5	5	0.0	0						10	11	10	5.1	
BLUE CANYON	5280	839.7		58	44	51.3	- 0.4	80	19	29	9	0	5			4.39	1.29	1.56	10	7	14.8	11	7.2	SSW	31	SE	20	6	8	17	6.9	
BURBANK	699	989.9	1015.7	70	55	62.5	- 1.9	82	6	47	11	0	0	51	70	0.01	- 0.17	0.01	1	0	0.0	0	6.2	S	22*	NNW	11	6	12	13	6.0	
EUREKA U	43	1016.4		58	50	53.9	0.9	67	5	41	13	0	0			1.74	- 0.44	0.64	7	0	0.0	0	7.7	N#	31	S	4	1	5	25	8.6	41
FRESNO	326	1002.5	1014.4	81	54	67.6	0.1	97	17	44	12	4	0	50	58	0.39	0.09	0.17	3	1	0.0	0	8.3	NW	25	NW	10	14	8	9	4.8	86
LONG BEACH	34	1015.0	1016.4	73	57	64.6	1.2	81	6	49	13+	0	0	51	65	T	- 0.11	T	0	0	0.0	0	6.8	WNW	21*	W	11	6	12	13	6.5	
LOS ANGELES	97	1012.3	1015.9	69	57	62.9	0.8	75	8	50	12	0	0	54	75	0.02	- 0.11	0.01	2	0	0.0	0	8.2	W	28*	W	11	7	9	15	6.2	
LOS ANGELES U	312			71	57	64.1	- 0.7	81	6	53	12+	0	0			T	- 0.16	T	0	0	0.0	0	5.8	W#	26	W	11	6	14	11	6.2	52
MT SHASTA R	3544	892.0		68	44	55.7	1.9	88	20	31	12	0	1			1.94	- 0.05	0.46	11	7	T	T						7	12	12	6.0	
OAKLAND	3	1016.8	1017.2	66	53	59.2	- 0.5	86	17	45	12+	0	0	49	72	0.51	- 0.14	0.32	4	0	0.0	0	10.7	WNW	26*	WNW	31	6	11	14	6.7	
POINT ARGUELLO	367	1003.4		60	49	54.5	- 0.9	72	8	41	10	0	0			0.26	0.09	0.20	8	0	0.0	0	7.8		25*	NW	1	6	6	19	7.4	
RED BLUFF	341	1001.9	1014.6	78	55	66.5	- 1.8	98	19	43	12	5	0	50	59	1.30	0.17	0.61	5	2	0.0	0	8.9	SSE	33	SE		7	10	14	6.3	70
SACRAMENTO	17	1014.8	1015.8	74	50	62.1	- 3.9	90	17	41	9	1	0	53	77	0.69	0.10	0.39	3	1	0.0	0	6.6	SSW	26	W		10	8	13	5.8	77
SACRAMENTO U	23			74	52	62.9	- 2.8	92	17	44	12+	2	0			0.64	0.02	0.32	3		0.0	0										
SANDBERG R	4517	862.7		64	45	54.8	- 1.8	80	17	32	11	0	1			0.02	- 0.29	0.02	1	0	0.0	0	13.6	NNW	37*	N		16	5	10	4.4	
SAN DIEGO	13	1012.9	1016.0	69	58	63.6	0.1	75	7	51	12	0	0	53	71	0.09	- 0.06	0.05	3	1	0.0	0	8.0	WNW	19	NW	25+	6	14	11	6.2	55
SAN FRANCISCO	8	1017.0	1017.7	64	50	56.8	- 1.5	78	17	43	9	0	0	50	82	0.50	0.02	0.30	2	0	0.0	0	11.6	W	36	WSW	30+	7	9	15	6.6	
SAN FRANCISCO U	52			62	52	57.2	- 0.2	77	17	49	12+	0	0			0.45	- 0.18	0.38	4	0	0.0	0	9.5	SW#	27	W	30					57
SANTA CATALINA	1568	960.1		63	52	57.6		80	6	49	11	0	0			0.05		0.02	4	0	0.0	0						6	4	21	7.1	
SANTA MARIA	238	1008.8	1017.4	65	49	56.9	- 0.7	76	6	41	13+	0	0	51	83	0.43	0.21	0.24	3	0	0.0	0	8.6	WNW	29*	WNW	31+	8	6	17	6.6	
STOCKTON	28	1014.3	1015.9	77	51	64.3		94	17	38	9	2	0	50	65	0.46		0.24	3	2	0.0	0	8.3	W	29*	W	10	12	7	12	5.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
				Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
		Station Ø	Sea level																												
COLORADO	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.					M.p.h.		M.p.h.							%
ALAMOSA	7536	772.4		72	35	53.4	2.6	78	18	21	13	0	10			0.13	- 0.60	0.11	2	4	0.0	0						8	16	7	5.2	
COLORADO SPRINGS	6173	812.6	1014.6	75	46	60.2	5.7	87	7	35	22	0	0	32	43	0.77	- 1.36	0.23	11	9	0.0	0	10.2	NNE	38*	SW	11	5	16	10	6.2	
DENVER	5283	837.5	1012.4	77	45	60.9	4.2	87	30+	35	21+	0	0	32	41	0.68	- 2.02	0.26	7	4	0.0	0	10.6	S	39	NW	30	7	16	8	5.3	67
GRAND JUNCTION	4849	857.6	1010.4	81	52	66.3	4.1	88	7	39	12	0	0	21	20	0.01	- 0.59	0.01	1	3	0.0	0	7.5	SE	41	SW	11	13	10	8	4.6	75
PUEBLO	4639	855.9	1012.3	81	48	64.3	3.7	93	7	36	20	5	0	35	41	0.39	- 1.41	0.22	6	4	0.0	0	9.6	E	49	NE	16	10	13	8	5.4	69
CONNECTICUT																																
BRIDGEPORT	7	1017.9	1018.7	67	47	56.8	- 1.9	78	9+	38	25+	0	0	45	70	2.61	- 1.10	0.70	9	4	0.0	0	13.0	WSW	35*	ESE	10	11	9	11	5.2	
HARTFORD	169	1011.4	1017.3	72	44	58.1	- 0.7	91	9	33	13	1	0	44	65	2.28	- 1.13	0.68	12	3	0.0	0	8.3	S	30	W	8	8	10	13	6.2	65
NEW HAVEN	6	1017.4	1018.0	66	46	56.2	- 1.0	77	31+	37	13	0	0			2.80	- 0.91	0.68	11	6	0.0	0	7.9		34	SW	1	12	6	13	5.5	69
DELAWARE																																
WILMINGTON	78	1015.2	1018.4	72	48	60.3	- 2.4	92	9	36	24+	1	0	47	65	1.23	- 2.30	0.57	8	2	T	T	7.6	SW	28*	NW	20	10	9	12	5.6	
DIST.OF COLUMBIA																																
WASHINGTON U	72			76	55	65.4		97	9	39	1	3	0			1.27	- 2.64	0.60	5												
WASH NATL AP	14	1014.2	1018.8	75	55	64.9	- 0.9	96	9	41	3+	2	0	48	58	1.06	- 3.08	0.46	7	2	T	T	8.2	S	30	W	20	11	9	11	5.5	65
FLORIDA																																
APALACHICOLA U	13	1016.2		82	69	75.8	1.0	88	16	58	5+	0	0			2.23	- 0.65	1.17	7	7	0.0	0	7.1		27	E	2	9	18	4	4.7	73
DAYTONA BEACH	31	1017.2	1018.8	85	66	75.8	1.6	95	18+	58	5	7	0	64	70	6.82	3.97	2.27	13	12	0.0	0	9.3	ESE	25*	ESE	13	8	11	12	6.0	
FORT MYERS	13	1017.2		89	67	78.0	0.6	92	19+	58	6	21	0			7.58	3.73	1.98	10	13	0.0	0	6.0		35*	ESE	21	10	15	6	4.9	
JACKSONVILLE	24	1017.4	1018.7	87	66	76.3	0.5	95	17+	49	2	13	0	64	72	1.74	- 1.73	0.62	9	6	0.0	0	8.6	NE	35	NE	14	5	16	10	6.2	80
KEY WEST	5	1016.1	1017.3	85	75	79.6	0.6	88	29+	69	6	0	0	68	69	3.41	0.68	2.58	8	1	0.0	0	10.8	ESE	27	SE	30	10	14	7	4.9	82
LAKELAND U	214			87	67	77.0	0.1	93	16+	58	2	14	0			4.10	0.56	0.84	9	12	0.0	0	7.1					9	14	8	5.4	68
MIAMI BEACH	9			83	73	78.0	- 0.2	87	6	62	6	0	0			4.91	0.37	3.97	8		0.0	0	14.1		26	SE	3	10	15	6	5.0	69
MIAMI	7	1016.5	1017.7	84	70	77.0	- 0.6	87	27+	55	6	0	0	68	74	6.34	- 0.10	2.77	10	7	0.0	0	10.2	ESE	30*	ENE	29	8	12	11	5.8	
ORLANDO	106	1014.0	1018.4	89	67	77.9	1.8	96	21	58	2	21	0	65	71	3.56	- 0.01	1.42	9	8	0.0	0	9.4	SSE	23*	NNE	31+	8	13	10	5.7	
PENSACOLA U	13			83	69	76.0	1.4	88	30+	58	2+	0	0			1.02	- 3.41	0.79	4	5	0.0	0	8.3	SW	24	SE	2					81
TALLAHASSEE	58	1016.1	1018.7	86	65	75.5	0.6	94	12	46	5	7	0	64	74	5.49	1.39	1.68	10	12	0.0	0	8.9	E	37*	W	18	3	19	9	5.9	
TAMPA	19	1017.0	1018.5	87	66	76.5	- 0.3	92	31+	55	5	7	0	66	74	1.56	- 1.29	0.46	7	10	0.0	0	11.8	ENE	35*	E	27	10	13	8	5.1	81
WEST PALM BEACH	15	1017.3	1018.3	85	69	76.9	- 0.7	92	11	56	6	2	0	67	73	6.69	1.58	4.84	11	7	0.0	0	9.2	ESE	32*	NE	3	9	11	11	5.9	
GEORGIA																																
ATHENS	803	990.6	1019.4	81	58	69.3	- 0.8	92	11	38	2	2	0	58	70	5.83	2.22	2.24	10	7	0.0	0	7.2	ENE	22*	WSW	17	11	8	12	5.7	
ATLANTA	1005	977.1	1018.9	79	59	68.8	- 0.8	88	11	41	1	0	0	57	69	4.66	1.50	1.52	7	7	0.0	0	7.0	E	25*	NW	27	8	12	11	5.8	75
AUGUSTA	143	1011.6	1018.3	84	58	70.9	- 0.7	96	11	35	2	8	0	59	70	2.66	- 0.33	1.27	7	6	0.0	0	7.0	SE	35*	W	20	8	8	15	6.3	
COLUMBUS	385	1004.3		85	60	72.7	0.6	92	11	39	2	7	0			1.17	- 2.33	0.69	6	5	0.0	0	7.7		25*	WSW	28	10	11	10	5.7	
MACON	356	1005.1	1018.7	85	61	73.2	- 0.7	95	11	43	2	11	0	59	66	3.29	- 0.03	2.14	7	5	0.0	0	7.4	ENE	26	NW	28	9	12	10	5.6	67
ROME	637	996.0		81	55	67.7	- 1.0	90	9	33	2	1	0			4.12	0.32	2.15	9	5	0.0	0						10	14	7	5.2	
SAVANNAH	48	1016.6	1019.2	83	62	72.6	- 0.8	95	11	39	2	8	0	61	72	3.85	0.08	2.00	5	7	0.0	0	9.7	WSW	26	E	31+	8	9	14	6.2	73
THOMASVILLE U	283			87	65	75.9	0.5	92	28+	51	2	13	0			2.25	- 1.59	0.98	6	9	0.0	0						8	12	11	5.8	
HAWAII																																
HILO	31	1015.4	1017.1	81	66	73.3	0.3	85	27	61	25	0	0	66	79	12.60	3.27	3.47	28	0	0.0	0	8.6	WSW	28	ESE	14	1	8	22	8.5	29
HONOLULU	7	1016.9	1017.1	83	70	76.4	0.5	87	26	65	16	0	0	64	66	3.36	2.37	3.24	4	1	0.0	0	11.0	ENE	29	NE	7	5	8	18	7.3	65
KAHULUI	44	1014.0	1016.8	83	68	75.3		88	31	62	26+	0	0	65	73	2.66		1.82	9	1	0.0	0	22.0	NE	46*	NE	11	4	11	16	7.1	72
LIHUE	115	1013.0	1018.5	81	70	75.4	0.9	84	30+	63	14	0	0	65	74	1.57	- 1.02	0.26	20	1	0.0	0	13.4	NE	26	NE	8	0	7	24	8.1	48
IDAHO																																
BOISE	2838	918.2	1013.5	73	49	60.8	3.1	86	29+	39	16+	0	0	41	53	0.85	- 0.44	0.34	11	2	0.0	0	7.7	WNW	24	NW	11	11	7	13	5.8	64
IDAHO FALLS 42NW R	4790			68	39	53.4	0.7	79	28	20	2	0	3			5.04	4.16	1.78	10													
IDAHO FALLS 46W R	4933	847.6		68	41	54.4	1.8	80	29	31	13	0	1			2.30	1.20	0.60	11	3	0.0	0	8.5	SW	35A	SW	1					
LEWISTON	1413	963.2		73	47	60.0	1.6	88	21	38	4	0	0			0.46	- 1.09	0.21	8	0	T	T						11	6	14	5.5	
POCATELLO	4444	862.9	1014.9	69	44	56.3	1.2	79	22+	37	20	0	0	38	56	2.26	1.13	0.75	14	9	T	T	7.6	SW	43	SW	30	8	5	18	6.5	61
ILLINOIS																																
CAIRO U	314	1004.7		79	59	69.0	0.0	92	16	40	1	4	0			3.39	- 1.00	1.08	13	8	0.0	0	7.7	N#	28	W	13	10	9	12	5.8	63
CHICAGO .O HARE	658	992.8	1017.7	68	45	56.3		90	8	29	1	1	2	41	56	1.92		0.85	6	3	0.0	0	10.7	NNE	25*	W	18+	8	9	14	6.3	
CHICAGO MIDWAY	610	995.1	1017.9	69	48	58.7	- 1.4	91	8	32	1	1	1	43	58	2.17	- 1.56	0.94	8	4	0.0	0	10.2	SW	32	NW	10	8	11	12	6.0	57

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
ILLINOIS	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MOLINE	582	995.2	1017.5	72	48	60.0	- 1.2	92	9+	31	1	2	1	49	70	2.36	- 1.44	1.06	11	2	0.0	0	10.6	E	32	SE	11	7	9	15	6.5	69
PEORIA	652	996.0	1018.5	71	47	59.0	- 2.5	90	9	31	1	1	1	47	66	1.24	- 3.03	0.46	7	3	0.0	0	10.1	S	26	NW	21+	7	12	12	6.1	63
ROCKFORD	728	990.3	1017.7	69	47	57.6	- 1.5	89	8	32	23+	0	2	43	60	1.89	- 1.94	0.80	8	3	0.0	0	11.2	WNW	27*	WNW	18+	8	9	14	6.3	
SPRINGFIELD	588	994.3	1017.4	74	50	62.2	- 0.7	93	9	32	1	3	1	50	66	2.65	- 1.23	0.98	6	4	0.0	0	11.8	SSW	32	NW	19	11	8	12	5.5	67
INDIANA																																
EVANSVILLE	381	1002.4	1018.3	76	50	63.3	- 2.0	90	9	28	1	1	2	52	69	3.62	- 0.57	1.41	11	6	0.0	0	6.5	SW	30	N	16	10	9	12	5.6	73
FORT WAYNE	791	987.3	1018.5	70	46	57.7	- 2.0	86	9	27	1	0	2	46	65	2.28	- 1.45	0.78	7	4	T	T	10.4	WSW	37	SSW	8	8	12	11	5.6	70
INDIANAPOLIS	793	988.4	1018.4	71	49	59.7	- 1.7	86	9	29	1	0	1	49	69	2.10	- 1.89	0.72	9	3	0.0	0	7.8	WSW	27*	SW	8	10	8	13	5.8	68
SOUTH BEND	768	989.7	1017.9	68	45	56.6	- 2.1	87	9+	27	1	0	2	45	66	2.48	- 1.14	0.69	7	4	0.0	0	10.2	ESE	32*	SW	8	8	8	15	6.4	
IOWA																																
BURLINGTON	694	991.9	1017.6	72	50	61.0	- 0.8	92	9	33	1	2	0	49	67	3.28	- 0.75	1.69	9	5	0.0	0	10.7	WNW	34	SW	8	7	12	12	6.0	68
DES MOINES	948	985.8	1017.2	69	50	59.7	- 2.1	88	8	32	23	0	1	50	74	3.94	- 0.13	1.05	10	7	0.0	0	10.7	S	42	NW	3	7	4	20	7.1	45
DUBUQUE	1065	991.6		69	46	57.2	- 0.9	86	8	31	23	0	2			1.95	- 2.27	0.78	9	4	0.0	0			35*	SW	7	6	8	17	6.5	
SIOUX CITY	1095	974.4	1015.7	73	51	62.2	1.3	90	9+	31	22	2	1	48	65	2.91	- 0.32	1.91	9	5	0.0	0	10.7	SSE	34	W	12	7	8	16	6.8	53
WATERLOO	868	985.1	1017.1	71	48	59.3	- 0.6	89	8	29	1	0	3	48	67	2.31	- 1.43	0.95	10	5	0.0	0	11.6	S	32*	NW	20+	7	9	15	6.4	
KANSAS																																
CONCORDIA	1470	965.2	1015.0	76	54	64.8	1.2	95	9	35	22	3	0	53	70	1.46		0.65	11	7	0.0	0	12.1	SSE	34	SE	1	6	9	16	6.7	57
DODGE CITY	2594	926.8	1014.0	81	55	67.8	4.1	100	12	42	22+	7	0	49	59	2.88	- 0.34	1.19	11	10	0.0	0	11.8	SSE	42	SW	11	10	4	17	6.4	60
GOODLAND	3645	888.0	1014.0	78	48	62.5	4.0	95	11	36	22	3	0	45	59	1.72	- 0.69	0.52	9	11	0.0	0	13.7	SSE	52*	WSW	31	9	9	13	6.2	
TOPEKA	877	980.5	1016.0	76	54	65.3	0.9	90	8	26	1	1	1	55	72	4.91	0.53	1.62	12	10	0.0	0	12.8	S	72	N	15	4	13	14	6.7	53
WICHITA	1321	965.9	1014.8	79	57	68.3	2.3	94	4	38	1	7	0	56	68	6.15	2.18	4.70	14	12	0.0	0	11.8	S	45	S	4	7	5	19	7.0	49
KENTUCKY																																
COVINGTON	869	986.3	1018.3	71	47	58.9	- 4.6	87	9	27	1	0	1	48	69	2.73	- 0.86	1.43	8	3	0.0	0	8.2	SSW	25*	WNW	18	6	12	13	6.2	
LEXINGTON	979	983.1	1018.9	73	52	62.8	- 1.7	88	9	29	1	0	1	50	66	3.48	- 0.37	1.30	10	6	0.0	0	8.2	SW	20*	WNW	17+	6	14	11	6.0	
LOUISVILLE	474	999.1	1018.3	75	52	63.3	- 1.1	89	9	31	1	0	2	52	67	4.56	0.66	1.13	10	7	0.0	0	7.6	WSW	34	NW	28	10	8	13	5.9	60
LOUISIANA																																
ALEXANDRIA	92	1013.4	1018.1	87	60	73.4		92	16+	41	2	10	0	63	73	4.11		3.10	4	5	0.0	0	5.9	SW	20	W	28+	5	16	10	6.1	
BATON ROUGE	64	1015.0	1018.1	89	64	76.8	2.5	94	29+	53	2+	17	0	64	70	0.63	- 4.17	0.34	4	5	0.0	0	7.6	SW	20	ESE	2	8	15	8	5.4	
LAKE CHARLES	14	1016.4	1017.9	85	66	75.5	0.4	92	29	57	2+	1	0	65	74	0.57	- 4.04	0.52	2	6	0.0	0	8.4	SSW	21*	SSE	22+	5	11	15	6.3	
NEW ORLEANS	3	1016.0	1018.1	86	65	75.2	1.3	90	29+	57	5+	4	0	67	77	3.17	- 1.21	2.71	4	5	0.0	0	6.9	SW	21*	SW	9	10	12	9	5.5	
NEW ORLEANS AUDUBON	6	1011.4		86	69	77.7		91	29+	61	1	4	0			0.62		0.36	5	5	0.0	0	3.5	S#	13	NE	1	8	15	8	5.2	64
SHREVEPORT	252	1008.5	1017.9	86	64	74.8	1.7	93	27+	48	23	10	0	62	66	2.25	- 2.54	2.24	3	4	0.0	0	9.8	S	28	NE	22	7	9	15	6.3	70
MAINE																																
CARIBOU	624	992.4	1015.7	62	38	49.8	- 0.1	80	28	28	13	0	7	37	64	2.34	- 0.69	0.74	13	2	T	T	10.1	SSE	46*	WSW	19	8	11	12	6.1	
PORTLAND	61	1012.7	1016.7	65	40	52.5	- 0.5	81	4	30	24	0	2	43	71	3.52	0.11	1.24	13	2	T	T	9.6	S	42	SW	20	10	10	11	5.9	61
MARYLAND																																
BALTIMORE	146	1013.7	1018.6	73	50	61.4	- 3.0	93	10+	35	12	2	0	48	66	1.70	- 2.28	0.55	9	2	T	T	9.2	W	37	W	20	12	10	9	5.1	64
BALTIMORE U	14			74	56	64.7	- 1.4	96	9	40	1	2	0			1.51	- 2.64	0.61	9													
FREDERICK	294			73	48	60.6	- 2.0	93	10+	34	13+	2	0			2.67	- 1.24	1.25	8		0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	992.8	1016.2	68	46	56.9	0.2	86	9	30	12	0	1		65	3.64	0.16	0.96	11		0.0	0	14.3	SSW	42	SSW	20					63
BOSTON	15	1012.1	1016.8	69	50	59.4	0.6	88	9	36	12	0	0	42	58	2.86	- 0.48	0.92	9	3	0.0	0	14.1	SSW	47	W	20	8	13	10	5.6	66
NANTUCKET	43	1017.5	1018.1	60	45	52.7	0.1	73	30	39	12+	0	0	45	78	4.68	1.80	2.30	12	2	0.0	0	13.4	WSW	38	S	1	11	6	14	6.0	65
PITTSFIELD	1170			67	39	53.0	- 1.6	83	9	27	24+	0	6			2.36	- 1.51	0.58	11		3.0	3										
WORCESTER	986	980.2	1016.9	67	44	55.8	0.6	84	9	31	12	0	2	39	58	3.00	- 0.79	0.99	10	4	T	T	9.0	W	25*	WSW	20	10	10	11	5.6	
MICHIGAN																																
ALPENA	689	992.1		62	36	48.6	- 3.5	84	31	23	1	0	14			5.46	2.55	2.18	12	5	T	1	7.8	SE	30	NE	10	10	5	16	6.1	67
DETROIT	619	991.3	1018.1	68	48	57.8	- 0.7	86	8	31	1	0	1	42	58	2.28	- 1.25	0.78	10	5	T	T	10.1	SW	60	NW	4	10	6	15	6.0	61
DETROIT M WAYNE CO	633	994.0	1018.3	68	44	56.0	- 1.9	88	9	30	1	0	2	45	70	4.09	0.55	1.39	11	4	T	T	8.0	SW				10	9	12	5.7	
DETROIT WILLOW RUN	711	989.6	1018.1	68	44	55.6	- 3.6	88	9	31	23+	0	3	44	68	3.30	- 0.18	1.70	9	5	T	T	11.3	SW	36*	SW	8	9	9	13	6.0	
ESCANABA U	594	994.4		57	40	48.5	- 1.8	70	31	28	22	0	5			3.96	0.99	2.22	13	3	T	T	9.8		35	N	9	4	12	15	6.7	50

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MICHIGAN	Ft.	Mb.	Mb.	°F.	°F.	°F.	F.	F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
FLINT	766	990.8	1018.7	66	43	54.2	- 2.6	83	8	26	1	0	2	43	66	2.34	- 1.05	1.58	7	4	T	T	10.0	WSW	30*	SW	19	5	10	16	6.5	
GRAND RAPIDS	689	992.8	1018.3	67	44	55.4	- 1.6	82	8	27	1	0	2	41	61	2.74	- 0.72	1.54	9	3	0.0	T	10.4	W	34	NW	14+	6	10	15	6.6	64
LANSING	852	985.8	1018.0	67	43	54.8	- 2.3	84	8	26	1	0	4	41	62	1.97	- 1.76	0.93	9	3	T	T	12.6	W	42	W	8	8	7	16	6.2	64
MARQUETTE U	677	989.6		60	41	50.5	0.6	86	31	28	22	0	5			1.73	- 1.23	0.43	13	2	0.7	1	8.1	NW#	34	SW	2	7	5	19	6.9	65
MUSKEGON	627	994.7	1017.9	66	45	55.4	0.6	78	31+	33	23	0	0	45	71	3.00	0.03	1.30	9	5	T	T	9.7	SSW	29*	ENE	10	8	8	15	6.1	
SAULT STE MARIE	721	994.2	1017.2	58	36	47.2	- 1.9	78	31	27	1	0	12	36	68	2.65	- 0.12	0.98	10	1	1.4	1	9.5	WNW	23*	W	19	9	6	16	6.5	62
MINNESOTA																																
DULUTH	1426	974.5	1016.6	61	38	49.6	- 0.1	82	7	23	11	0	7	36	63	2.28	- 1.01	0.65	15	2	0.2	T	11.2	ESE	36	NE	9	3	11	17	7.7	47
INTERNATIONAL FALLS	1179	974.5	1016.1	62	37	49.6	- 1.1	81	30	23	5	0	9	36	64	4.71	2.10	1.23	14	4	T	T	8.9	S	27*	WNW	18+	6	9	16	6.9	
MINNEAPOLIS	822	981.6	1016.5	66	45	55.4	- 2.2	92	7	28	23	1	2	45	68	5.06	1.87	1.62	14	5	T	T	11.2	S	33	S	1	3	12	16	7.3	51
ROCHESTER	1297	969.1	1017.1	66	44	55.1	- 1.6	85	31	30	23+	0	3	45	71	1.17	- 2.48	0.45	8	6	0.0	0	14.0	S	32*	W	13+	4	13	14	6.8	
ST CLOUD	1034	977.1		65	43	54.2	- 1.4	87	7	28	23+	0	3			5.79	2.28	2.12	17	4	0.0	0						5	11	15	7.1	
MISSISSIPPI																																
JACKSON	305	1005.9	1017.9	86	63	74.4	1.9	91	27+	46	1	7	0	62	67	1.47	- 2.69	1.29	3	3	0.0	0	7.2	SW	27	NW	28	9	16	6	5.2	80
MERIDIAN	292	1004.6	1018.5	87	60	73.8	1.4	94	15+	41	2	12	0	62	71	1.60	- 2.31	0.79	5	6	0.0	0	6.4	S	21*	N	22+	8	17	6	5.4	
VICKSBURG U	234	1008.7		83	64	73.7	0.3	88	26+	48	1	0	0			1.01	- 3.12	0.82	4	4	0.0	0	7.7		40	W	28	8	14	9	5.5	81
MISSOURI																																
COLUMBIA	778	988.2	1016.5	74	54	64.0	- 0.4	87	10+	33	1	0	0	54	72	4.53	- 0.17	1.50	10	8	0.0	0	10.5	ESE	46	NW	15	8	14	9	5.9	58
KANSAS CITY	742	981.4	1016.0	78	57	67.5	2.4	92	12	35	1	3	0	54	65	4.17	- 0.23	1.56	11	7	0.0	0	8.5	S	34	SW	8	7	10	14	6.4	73
ST JOSEPH	809	981.7		76	55	65.0	0.9	91	8	31	1	3	1			5.65	1.26	3.50	8	8	0.0	0	11.7	S	40*	NNE	15+	6	14	11	6.0	
ST LOUIS	535	997.1	1017.8	74	53	63.9	- 1.8	91	10	34	1	3	0	52	68	4.77	1.04	1.53	11	6	0.0	0	10.5	WNW	29	SE	12	10	8	13	5.8	55
ST LOUIS RFC	465			75	57	65.7	- 0.9	91	8	43	1	1	0			4.27	0.42	1.49	8		0.0	0										
SPRINGFIELD	1265	969.9	1017.1	79	57	68.1	3.6	91	10	31	1	3	1	57	70	7.75	2.47	2.13	11	8	0.0	0	9.7	SSE	42	N	4	4	13	14	6.6	69
MONTANA																																
BILLINGS	3567	891.4	1015.4	65	43	53.9	- 1.9	80	30+	31	21	0	2	42	68	2.49	0.61	0.74	16	8	0.0	0	10.1	NE	38	NW	12	8	8	15	6.4	61
GLASGOW	2277	940.5		65	41	52.9	- 2.2	86	30	29	21+	0	2			1.13	- 0.36	0.41	11	5	T	T						5	10	16	6.8	
GREAT FALLS	3662	888.7	1016.2	66	40	52.9	- 1.1	85	31+	30	4	0	4	34	52	1.27	- 0.83	0.66	9	4	T	T	10.1	W	34	NW	7	9	7	15	5.9	61
HAVRE	2582	926.4		68	40	54.0	- 0.2	89	31	27	19	0	5			1.01	- 0.52	0.61	9	0	0.0	0	8.7	E#	38	W	1	10	8	13	5.7	65
HELENA	3893	873.6	1015.7	66	41	53.4	0.5	84	29	28	2	0	2	34	53	1.34	- 0.22	0.50	12	2	T	T	8.1	WNW	31	W	31	9	7	15	6.2	62
KALISPELL	2965	911.9		66	34	50.2	- 2.0	84	29	22	4	0	13			0.81	- 0.86	0.25	8	2	0.2	T	6.6					10	8	13	5.8	
MILES CITY				69	44	56.6	- 0.8	88	31	29	21	0	1			1.68	- 0.05				0.0	0	9.1	W	29*	W	15+					
MISSOULA	3190	902.2	1016.3	69	38	53.6	1.0	86	29	31	13	0	3	32	48	0.25	- 1.62	0.12	5	1	0.1	T	7.7	NNW	28	NW	31+	9	7	15	5.9	71
NEBRASKA																																
GRAND ISLAND	1841	949.3	1015.6	72	49	60.2	- 1.9	88	9+	29	22	0	1	49	71	3.28	- 0.57	2.23	11	9	0.0	0	10.8	S	31*	NE	14	10	4	17	6.6	
LINCOLN U	1150			74	53	63.5	1.0	93	9	36	22	2	0			2.53	- 0.95	1.19	10	7	0.0	0	11.6	S#	42	SE	12+	4	12	15	7.0	53
NORFOLK	1544	959.8		72	50	60.9	0.7	89	8	30	22	0	1			1.95	- 1.71	0.67	7	8	0.0	0						6	11	14	6.7	
NORTH PLATTE	2779	915.4	1013.9	74	47	60.5	2.0	90	7	30	22+	1	2	47	65	3.98	1.03	1.26	15	9	0.0	0	11.5	SSE	40	NW	3	7	10	14	6.6	59
OMAHA	978	976.2	1015.9	73	53	63.1	0.1	92	9	34	22	1	0	50	67	1.29	- 2.19	0.57	11	4	0.0	0	11.3	SSE	34	S	19+	7	6	18	6.8	56
OMAHA N OMAHA AP	1323			72	51	61.4	0.7	91	9	33	22	1	0			1.52	- 1.86	0.69	10	5	0.0	0						4	9	18	7.1	
SCOTTSBLUFF	3950	878.2	1013.6	75	46	60.2	3.4	92	7	36	22	1	0	42	57	3.13	0.43	1.21	13	13	0.0	0	12.6	SE	39*	WNW	9	8	14	9	5.7	
VALENTINE	2587	923.8		73	45	58.6	1.5	93	7	26	22	1	2			2.52	- 0.15	1.15	8	7	0.0	0	11.5	N#	42	NW	15	6	16	9	5.9	57
NEVADA																																
ELKO	5075	844.2	1014.1	70	40	54.8	2.8	82	20	31	13	0	3	37	55	2.10	1.14	0.56	17	12	0.6	T	7.2	SW	44*	S	28	5	11	15	6.9	
ELY	6257	808.0	1011.4	71	38	54.3	4.0	80	22+	25	13	0	5	28	41	0.40	- 0.45	0.15	7	7	0.7	T	9.4	SSE	44	SW	8	3	15	13	6.3	81
LAS VEGAS	2162	945.1	1010.2	91	61	75.9	2.1	99	20+	45	12	20	0	26	17	T	- 0.08	T	0	0	0.0	0	12.5	SW	35*	SW	8	16	10	5	3.7	88
RENO	4404	862.1	1014.8	73	41	57.2	3.8	88	19	31	1	0	2	42	62	2.89	2.37	1.29	9	6	T	T	6.8	S	29	W	23+	3	16	12	6.7	77
WINNEMUCCA	4299	866.1		73	44	58.1	4.4	86	20	32	12	0	1			1.89	0.95	0.46	12	10	T	T	8.5	S	40	N	31	4	10	17	7.2	45
NEW HAMPSHIRE																																
CONCORD	339	1005.8	1016.6	71	41	55.5	0.0	84	9	28	13	0	4	41	62	2.17	- 1.00	0.69	10	2	T	T	7.4	NW	40	W	20	10	11	10	5.6	59
MT WASHINGTON OBS	6262	805.0		40	27	33.6	- 1.4	54	29	14	12+	0	23		80	4.31	- 1.53	0.94	12	1	3.5	4	26.0	W#	88Y	W	8	8	9	14	6.5	44
NEW JERSEY																																
ATLANTIC CITY	58	1017.1	1018.8	72	49	60.3	- 1.0	93	9	36	1	1	0	46	64	2.95	- 0.56	1.94	7	0	0.0	0	10.4	SSW	23*	SW	19+	11	10	10	5.5	60

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
NEW JERSEY	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ATLANTIC CITY U	10			66	53	59.2	- 0.3	92	9	37	1	1	0			1.94	- 1.22	0.98	9				11.6		28*	SSE	18					
NEWARK	11	1017.0	1018.2	71	51	61.1	- 0.9	87	20+	38	1	0	0	44	59	2.37	- 1.28	0.62	11	4	0.0	0	11.6	SW	50*	NW	20	12	8	11	5.3	
TRENTON U	56	1010.7	1017.6	71	50	60.4	- 1.9	89	9	35	1	0	0			1.28	- 2.34	0.59	8	2	T	T	9.3	SW#	36	NW	9	9	10	12	5.7	64
NEW MEXICO																																
ALBUQUERQUE	5310	848.2	1011.4	84	52	68.0	2.9	93	29	44	13+	3	0	29	27	0.03	- 0.72	0.02	2	3	0.0	0	10.6	S	49	NW	1	14	9	8	4.6	81
CLAYTON	4969	845.9		78	49	63.5	3.7	91	14+	35	22	4	0			2.00	- 0.74	0.81	10	9	0.0	0						11	8	12	5.7	
RATON	6379	806.8		76	43	59.3	3.9	88	8	31	2	0	1			1.90	- 0.39	0.95	10	12	0.0	0						4	18	9	6.2	
ROSWELL	3619	892.5		87	52	69.6	3.1	98	11	40	3	16	0			0.88	- 0.40	0.58	10	10	0.0	0	9.8	ESE	40	NW	27	15	3	13	5.0	73
SILVER CITY	5373	836.2		84	49	66.8		92	29	42	2+	1	0			T		T	0	1	0.0	0						17	6	8	3.8	
NEW YORK																																
ALBANY	277	1013.6	1017.4	69	44	56.6	- 1.3	84	9	29	24	0	1	41	60	1.90	- 1.57	0.70	9	3	0.0	0	8.3	SSE	29	SW	8	7	14	10	6.0	60
BINGHAMTON	1590	958.1	1017.2	64	43	53.6	- 1.5	82	9	28	24	0	4	42	68	4.73	1.24	1.01	15	4	1.0	T	10.4	NNW	27	SW	19	5	13	13	6.6	65
BUFFALO	705	989.7	1018.4	63	42	52.9	- 1.4	75	27	29	1	0	4	42	69	2.22	- 0.73	0.71	14	2	0.1	T	11.8	SW	32	SW	19	9	8	14	6.4	58
NEW YORK U	132	1006.8		72	51	61.1	- 1.3	86	9+	38	1	0	0			2.16	- 1.51	0.64	11	4	0.0	0	8.6	SW#	24	NE	10	13	8	10	5.1	59
NEW YORK LA GUARDIA	19	1016.3	1017.9	70	52	60.6	- 1.5	85	9+	39	1	0	0	45	59	1.78	- 1.80	0.49	12	5	0.0	0	11.8	S	31	E	10	10	10	11	5.6	
ROCHESTER	543	998.9	1018.3	65	43	54.3	- 2.4	81	9	30	2+	0	4	43	67	2.33	- 0.44	0.51	14	4	1.0	T	11.4	WSW	38	SW	19	9	11	11	5.7	64
SCHENECTADY	217			69	46	57.2	- 1.9	82	9	34	24	0	0			2.57	- 0.71	0.82	11	1	0.0	0						18	8	5	3.4	
SYRACUSE	417	995.5	1017.3	66	43	54.7	- 3.0	79	27+	30	24+	0	4	42	65	2.84	- 0.43	0.98	13	3	0.8	T	12.1	WNW	40	NW	14	9	11	11	5.6	62
NORTH CAROLINA																																
ASHEVILLE U	2203	940.2		75	52	63.6	- 0.8	88	10	33	2	0	0			2.53	- 0.34	0.74	11	5	0.0	0	7.9	SE#	30	NW	15	12	9	10	5.3	65
CAPE HATTERAS R	7	1018.0	1018.7	71	56	63.4	- 4.6	82	20+	42	8	0	0	56	78	4.42	0.44	1.43	11	7	0.0	0	11.6	NE	30*	WNW	20	2	10	19	7.6	66
CHARLOTTE	735	990.9	1018.8	80	58	68.8	- 0.2	93	11	32	2	4	1	55	65	2.91	- 0.20	1.45	9	3	0.0	0	7.1	SW	25	N	17	9	9	13	7.0	60
GREENSBORO	891	987.2	1019.1	77	54	65.3	- 1.6	90	9	32	2	1	1	52	68	2.92	- 0.37	0.70	12	6	0.0	0	7.6	SW	26	NW	1	10	10	11	5.7	56
RALEIGH	433	1004.8	1018.6	77	54	65.4	- 2.2	92	9	29	2	3	1	53	68	4.05	0.53	1.53	11	7	0.0	0	6.6	SW	40*	WSW	21	8	10	13	6.2	64
WILMINGTON	30	1016.1	1019.0	79	57	68.2	- 2.3	96	10	35	2	3	0	57	74	8.68	5.16	4.95	12	7	0.0	0	7.2	NE	30	E	11	5	12	14	6.5	61
WINSTON SALEM	967	983.7	1018.9	77	56	66.6	- 1.2	92	9	38	2	1	0	49	57	4.44	0.43	2.09	11	8	0.0	0	8.3	WSW	23*	NW	1	10	9	12	5.8	
NORTH DAKOTA																																
BISMARCK	1647	954.9	1015.5	67	43	55.3	- 0.1	90	30	24	22	1	2	41	62	2.61	0.64	0.72	14	8	T	T	11.1	SE	39	NW	20	7	8	16	6.6	69
FARGO	900	980.4	1015.6	66	42	54.3	- 1.1	88	7	21	22	0	2	41	63	2.61	0.58	1.42	11	7	0.1	T	12.4	SSE	50	SE	12	6	7	18	7.0	53
WILLISTON	1899	947.4		66	41	53.6	- 1.6	88	30	24	3	0	5			2.05	0.62	0.68	11	2	T	T	11.4	SE#	56	NW	1	6	8	17	6.7	48
OHIO																																
AKRON	1209	980.4	1018.6	68	45	56.4	- 1.8	86	9	30	1	0	2	43	63	2.07	- 1.78	0.67	11	3	0.4	1	8.8	WSW	23*	W	28+	7	10	14	6.2	
CINCINNATI OBS	761			73	51	62.4	- 1.8	90	9	29	1	1	1			4.79	0.99	3.16	8	2	0.0	0	5.7	S#	17	W	18+					59
CINCINNATI U	553			75	54	64.4	- 0.5	91	9	32	1	1	1			3.66		2.51	8	2	0.0	0										
CLEVELAND	777	990.6	1018.5	66	44	54.7	- 2.8	87	9	26	2	0	3	43	66	1.00	- 2.52	0.33	12	6	0.1	T	10.2	N	40	S	28	7	14	10	6.0	69
COLUMBUS	812	988.9	1018.9	71	46	58.8	- 3.2	90	9	30	2+	1	2	45	61	1.61	- 2.39	0.49	9	3	0.0	0	9.0	N	30	W	18+	6	14	11	6.3	69
COLUMBUS U	724			71	51	61.0	- 2.0	88	9	31	1	0	1			1.77	- 1.69	0.71	8	4	0.0	0										
DAYTON	997	985.8	1018.5	70	48	58.9	- 2.7	88	9	26	1	0	1	45	62	2.45	- 1.28	1.51	9	4	0.0	0	10.6	SSW	30	SW	18+	7	10	14	6.1	55
MANSFIELD	1296			67	44	55.7	- 2.3	86	9	28	1	0	3			1.69	- 2.03	0.81	11	3	T	1						8	11	12	6.1	
SANDUSKY U	606	996.9		68	49	58.4	- 1.7	92	9	34	1	1	0			2.30	- 1.22	0.77	11	4	T	T	9.4	SW#	45	NW	1	13	11	7	4.2	78
TOLEDO	676	992.8	1018.2	68	43	55.3	- 3.0	90	9	27	23	1	4	44	67	2.63	- 0.41	0.92	11	5	0.0	0	9.4	WSW	31	SW	8	10	8	13	5.6	64
YOUNGSTOWN	1178	975.8	1018.6	67	42	54.6	- 3.8	88	9	25	24	0	4	42	65	2.11	- 1.96	0.76	12	4	0.2	1	10.2	SW	28*	SW	8	7	9	15	6.2	
OKLAHOMA																																
OKLAHOMA CITY	1280	972.1	1015.2	81	60	70.3	2.9	96	10	39	1	5	0	58	69	1.91	- 3.28	0.58	10	7	0.0	0	13.5	SSE	39	SW	4	6	10	15	6.8	66
TULSA	676	991.5	1016.0	81	60	70.9	3.1	93	10	38	1	6	0	60	70	2.49	- 2.77	0.90	12	8	0.0	0	12.1	S	34	SW	26	3	11	17	7.1	43
OREGON																																
ASTORIA	8	1017.3	1018.0	62	45	53.0	0.2	83	20	37	16+	0	0	46	77	1.91	- 1.29	0.94	9	0	0.0	0	9.0	NNW	25*	WSW	21+	7	8	16	6.7	
BURNS U	4151	872.4		68	41	54.5	1.1	82	29+	28	1	0	3			2.31	1.42	0.61	11	2	T	T						9	10	12	5.5	
EUGENE	361	1004.0		67	45	56.0	- 0.1	91	20	37	12	1	0			3.95	1.81	1.79	8	0	0.0	0	6.7		25*	SW	20	12	5	14	5.4	
MEACHAM	4050			59	41	49.9	1.9	74	29+	29	1	0	3			1.70	- 0.75	0.44	13	0	0.9	T						11	3	17	5.8	
MEDFORD	1298	968.7	1016.5	71	43	57.0	- 1.0	93	20	34	9	1	0	46	71	2.23	0.76	0.88	9	3	0.0	0	5.7	WNW	32*	SE	20	9	7	15	6.3	
PENDLETON	1482	962.3	1015.9	71	47	58.9	- 0.2	87	21	39	3+	0	0	40	54	0.65	- 0.47	0.32	7	1	0.0	0	9.1	W	28*	WNW	5	12	8	11	5.0	
PORTLAND	21	1011.7	1017.4	67	46	56.6	- 0.8	91	20	36	13+	1	0	44	66	2.74	0.75	1.37	8	0	0.0	0	8.5	NW	28	S	1	10	11	10	5.6	56

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

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State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	F.	F.	°F.	F.	F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
PORTLAND U	30			70	50	59.8	0.7	94	20	40	3	2	0			3.58	1.53	1.67	8		0.0	0										
ROSEBURG	505	998.4		71	44	57.8	1.3	94	20	38	13+	1	0			3.74	1.89	1.51	13	2	0.0	0	5.0	N#	18	NW	28+	11	7	13	5.9	61
SALEM	195	1010.4	1017.8	68	43	55.2	- 1.6	92	20	34	10	1	0	46	72	3.70	1.59	1.84	10	0	0.0	0	6.5	NW	21*	SW	5+	12	5	14	5.7	
SEXTON SUMMIT R	3836	883.9		60	40	50.3	0.3	87	20	30	3+	0	8			7.26	5.07	3.07	13	0	1.0	1	11.3	N				12	5	14	5.8	
PACIFIC AREA																																
CANTON ISLAND	11	1008.4	1008.7	90	79	84.5	0.6	91	29+	76	8	17	0	75	76	0.98	- 3.37	0.24	8	0	0.0	0	13.1	NE	26*	NNE	22	8	14	9	6.1	
ENIWETOK	16	1008.7		87	78	82.4	0.0	91	4	73	31+	3	0			13.51	8.94	2.44	23	2	0.0	0	10.3									
TAGUAC GUAM R	361			85	74	79.2	- 1.2	87	22+	70	22+	0	0			12.56	8.37	3.57	24	3	0.0	0	8.2	E#	26	E	14					83
JOHNSTON	7	1012.9		80	76	77.9	- 1.3	83	2	70	3	0	0			12.41	11.42	4.20	17	0	0.0	0	14.4		44	E	29	0	6	25	8.8	30
KOROR R	94	1005.9	1008.7	88	76	82.0	0.7	91	21+	74	31+	8	0	77	87	12.01	- 2.62	3.64	22	5	0.0	0	5.9	NE	18	E	7	0	2	29	9.7	55
KWAJALEIN		1009.2	1010.1	87	78	82.6	1.5	91	21	74	10	2	0	77	83	7.47	- 0.71	1.38	23	1	0.0	0	9.1	E	30	E	10	3	10	18	7.3	
PONAPE R	123	1004.1	1008.6	88	74	81.0	0.6	91	17	72	30+	8	0	76	88	19.12	- 1.19	3.59	28	6	0.0	0	3.0	NE	17	SE	28+	0	7	24	8.9	48
TRUK MOEN ISLAND	5	1008.8	1009.0	87	75	81.1	0.3	89	26+	72	7	0	0	76	84	8.54	- 5.58	3.29	20	3	0.0	0	5.2	NNE	25	E	7	0	6	25	9.1	31
WAKE	11	1014.2	1014.9	84	75	79.8	0.0	87	29+	71	7	0	0	73	80	3.66	- 1.62	2.14	15	0	0.0	0	17.6	ENE	28*	ESE	20+	2	19	10	6.2	
YAP R	53	1007.2	1008.2	87	76	81.7	- 0.3	91	11	73	5+	3	0	76	85	7.14	- 2.38	3.92	16	3	0.0	0	7.6	NE	26	S	28+	0	4	27	9.3	63
PENNSYLVANIA																																
ALLENTOWN	376	1004.2	1018.5	71	47	58.6	- 1.8	85	9	34	24+	0	0	44	62	1.67	- 2.41	0.61	7	4	T	T	10.3	NNW	37*	NW	20	10	10	11	5.4	
ERIE	732	991.8	1018.1	64	44	53.9	- 2.5	83	8	30	2	0	3	42	66	2.02	- 1.52	0.62	12	5	0.1	T	12.4	WSW	32*	SSE	13	7	15	9	5.8	
HARRISBURG	335	1004.6	1018.5	74	49	61.6	- 1.1	95	10	35	24+	2	0	45	57	2.66	- 1.24	0.88	8	2	T	T	9.2	WNW	29	N	10	10	11	10	5.5	71
PHILADELPHIA	5	1017.9	1018.4	72	48	60.2	- 2.4	91	9	35	1	1	0	45	60	1.06	- 2.68	0.39	9	2	T	T	9.8	WSW	34	NW	20	8	10	13	5.8	65
PITTSBURGH	1137	987.6	1018.4	69	44	56.5	- 3.3	88	9	26	2	0	4	44	64	1.57	- 2.34	0.50	9	2	1.8	1	9.4	WSW	30*	WNW	14	7	11	13	6.4	60
PITTSBURGH U	749			72	50	60.8	- 2.2	91	9	32	1	1	1			1.70	- 2.05	0.70	8		0.8	T										63
READING U	266	1005.7	1017.6	73	50	61.5	- 1.8	90	10	36	1	1	0			2.13	- 1.66	0.82	8	4	T	T	11.3	N#	54	E	10	9	13	9	5.2	59
SCRANTON	940	983.8	1017.9	69	46	57.8	- 0.8	88	9	32	24	0	1	42	59	2.44	- 1.51	0.95	13	3	0.2	T	8.8	NNW	31	SE	10	10	10	11	5.8	58
WILLIAMSPORT	527	999.4	1018.4	71	45	58.0	- 2.4	93	9	31	24	1	1	43	62	4.91	0.83	2.12	14	3	T	T	8.0	WSW	31*	WNW	18	4	16	11	6.4	
RHODE ISLAND																																
BLOCK ISLAND	110	1012.9	1017.1	59	46	52.3	- 2.1	72	9	37	12	0	0			3.56	0.55	1.74	8	1	0.0	0						8	11	12	5.6	
PROVIDENCE	55	1011.1	1017.1	68	46	57.1	- 0.4	88	9	33	12	0	0	43	63	4.69	1.34	1.46	10	4	0.0	0	11.3	SSE	35*	SSW	20	10	10	11	5.3	63
SOUTH CAROLINA																																
CHARLESTON	41	1016.6	1018.6	83	60	71.6	- 0.3	96	17+	36	2	7	0	61	74	1.70	- 1.91	0.54	8	7	0.0	0	8.5	NNE	35Y	SW	23	6	10	15	6.5	63
CHARLESTON U	9			79	65	72.0	- 1.3	93	17	49	2	5	0			1.09	- 2.00	0.41	6		0.0	0	10.6		40	SE	21					
COLUMBIA	217	1005.8	1018.3	83	58	70.9	- 1.3	96	11	34	2	10	0	56	65	2.87	- 0.67	2.30	6	5	0.0	0	7.2	ENE	23*	W	28	9	9	13	5.8	69
FLORENCE	146	1012.8	1018.5	82	57	69.5	- 2.4	96	11	38	2	4	0	56	68	3.14	0.25	1.29	8	9	0.0	0	7.9	ENE	23*	NNE	23	9	7	15	6.0	
GNVLE SPARTANBURG	957	981.8	1018.6	80	58	69.1	- 1.1	92	17+	38	2	5	0	55	65	3.06	- 0.16	1.67	9	6	0.0	0	7.8	NE	34	SW	17	9	11	11	5.8	62
SOUTH DAKOTA																																
HURON	1282	967.9	1015.1	70	45	57.3	- 0.7	92	7	21	22	1	2	47	74	3.11	0.75	1.32	9	7	0.0	0	12.6	SSE	49	W	9	7	8	16	6.4	61
RAPID CITY	3165	901.3	1015.1	70	44	57.0	1.3	88	7	28	22	0	2	43	63	1.18	- 1.48	0.47	13	9	0.0	0	11.3	NNW	50	NW	9	10	13	8	5.5	58
SIOUX FALLS	1420	963.8	1015.4	71	48	59.4	1.1	89	7	27	22	0	1	46	65	2.00	- 1.38	0.69	9	5	0.0	0	13.1	S	30*	SSW	7	7	12	12	6.3	
TENNESSEE																																
BRISTOL	1507	963.7	1018.5	77	52	64.2	- 1.0	88	9	30	2	0	1	52	68	4.64	1.19	2.37	11	7	T	T	5.1	WSW	29*	WNW	15	10	11	10	5.8	
CHATTANOOGA	670	991.3	1018.8	81	57	69.2	0.6	92	9	36	2	5	0	56	69	3.06	- 0.46	1.21	11	7	0.0	0	7.2	S	36	SW	17	10	12	9	5.6	67
KNOXVILLE	950	983.7	1019.2	77	55	65.9	- 2.3	88	9	34	2	0	0	54	69	4.51	1.01	1.43	13	8	0.0	0	6.8	SW	24	SW	28	11	9	11	5.6	59
MEMPHIS	263	1003.2	1017.9	81	61	71.1	0.3	90	16+	40	1	2	0	60	69	3.77	- 0.46	2.59	8	5	0.0	0	8.4	S	29	S	4	5	14	12	6.4	82
MEMPHIS U	271			80	63	71.6	0.6	90	12	42	1	1	0			5.15	1.12	3.61	8		0.0	0										
NASHVILLE	577	998.3	1018.1	79	56	67.3	- 1.3	89	16	34	2+	0	0	56	70	2.47	- 1.25	0.76	10	9	0.0	0	8.2	SSW	29	W	17	9	8	14	6.1	61
OAK RIDGE	905	985.8		79	53	65.8	- 1.2	92	9	31	2	2	1			3.24	- 0.49	1.15	10	6	0.0	0	4.5		31Y		17	12	9	10	5.1	
TEXAS																																
ABILENE	1759	953.4	1014.0	86	64	75.0	3.3	98	10	52	1	13	0	59	63	6.21	1.88	1.97	7	10	0.0	0	10.8	SSE	53	N	5	6	12	13	6.3	62
AMARILLO	3607	888.3	1012.7	83	55	69.0	4.0	98	15	42	22	11	0	46	53	3.66	0.29	1.05	9	7	0.0	0	16.0	S	54	W	27	10	7	14	5.9	70
AUSTIN	597	994.1	1015.9	87	67	76.9	1.8	95	29+	55	23+	15	0	64	68	1.32	- 2.39	0.61	6	7	0.0	0	9.5	S	34	NW	17	4	10	17	7.1	45
BROWNSVILLE	16	1012.7	1015.3	86	72	79.3	0.3	92	29	67	8+	6	0	71	79	4.51	2.15	2.55	6	3	0.0	0	13.7	SE	34	E	2	6	17	8	5.6	62
CORPUS CHRISTI	43	1014.7	1016.0	87	71	78.8	1.3	92	27	64	1	6	0	69	74	0.85	- 2.14	0.30	6	1	0.0	0	13.4	SSE	27	SE	27	2	11	18	7.0	49
DALLAS	481	997.9	1016.3	85	66	75.6	2.7	97	27	49	1	10	0	63	66	1.94	- 2.89	0.70	7	7	0.0	0	13.5	S	31	NE	27	5	10	16	6.8	53

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: 01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
TEXAS	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
DEL RIO	1026			88	67	77.3		96	26	56	2+	12	0			2.72		1.47	5	5	0.0	0										
EL PASO	3918	885.2	1010.3	90	59	74.9	3.0	97	29	50	5	21	0	34	26	0.71	0.31	0.71	1	2	0.0	0	7.6	WSW	51	NE	18	16	10	5	3.7	89
FORT WORTH	544	995.4	1016.1	84	66	75.0	2.3	97	27	48	1	9	0	62	66	2.52	- 2.07	0.90	6	6	0.0	0	13.2	S	30*	WNW	5	5	11	15	6.6	
GALVESTON U	7			81	74	77.2	1.4	85	31+	62	23	0	0			0.40	- 2.39	0.33	3	0	0.0	0	11.5		26	E	1					75
GALVESTON	5	1015.2	1017.6	82	73	77.4	1.4	86	31+	63	23	0	0	68	73	1.02	- 1.99	0.51	4	5	0.0	0	10.4	S				2	19	10	6.4	
HOUSTON U	41			87	70	78.3	2.1	91	27+	59	23	4	0			4.73	0.30	3.10	4		0.0	0										
HOUSTON	50	1014.0	1016.8	88	67	77.5	0.5	93	29+	59	23+	14	0	68	76	0.62	- 3.70	0.57	2	6	0.0	0	9.4	SSE	23*	S	9	2	17	12	6.7	74
LAREDO	500	998.7	1014.0	93	71	82.1	1.3	103	27	62	2	24	0	66	63	2.45	- 0.34	2.24	4	1	0.0	0	12.2	ESE	28*	ESE	31	5	12	14	6.5	
LUBBOCK	3243	903.1	1013.3	84	57	70.5	2.3	97	15+	46	22	11	0	53	61	6.79	3.61	2.26	11	13	0.0	0	16.3	ESE	46*	NW	27	8	10	13	6.0	
MIDLAND	2854	914.7	1012.0	87	61	74.4	1.0	99	12+	50	23+	13	0	53	55	2.62	0.54	0.98	8	9	0.0	0	13.5	SSE	49*	NE	5	7	13	11	5.8	
PORT ARTHUR	16	1015.6	1017.1	87	66	76.1	1.4	92	30+	59	1	7	0	67	77	0.59	- 4.35	0.27	4	4	0.0	0	8.5	S	33	SW	29	1	16	14	6.7	74
SAN ANGELO	1903	946.8	1013.1	89	65	77.0	2.7	100	10	53	23	19	0	60	63	3.89	0.69	1.94	8	7	0.0	0	10.3	SSE	60*	NNE	5	7	13	11	6.2	
SAN ANTONIO	792	990.5	1015.3	88	68	77.7	2.4	97	27	56	2	14	0	65	69	3.03	- 0.42	2.55	6	4	0.0	0	9.2	SSE	28	ESE	5	3	19	9	6.5	52
VICTORIA	104	1011.6		88	69	78.3	2.1	93	29	60	1	13	0			1.58	- 2.54	1.17	3	2	0.0	0	10.1		47Y		18	4	17	10	6.0	
WACO	500	995.0	1016.0	86	66	76.2	1.9	94	27+	52	1	12	0	64	68	5.70	1.13	2.94	7	7	0.0	0	14.4	SSE	52*	NW	28	4	11	16	6.8	
WICHITA FALLS	994	977.4	1014.1	86	62	74.0	2.8	102	26	44	1	15	0	60	66	3.10	- 1.50	1.51	8	9	0.0	0	12.2	S	38*	N	19	8	6	17	6.5	
UTAH																																
MILFORD	5028	842.7		80	41	60.2	3.7	87	20	28	12	0	3			T	- 0.69	T	0	2	0.0	0						12	10	9	4.7	
SALT LAKE CITY	4220	865.8	1012.9	76	46	60.7	2.3	84	28+	35	13	0	0	37	44	0.23	- 1.17	0.19	5	1	0.0	0	9.4	SSE	43	SW	11	9	13	9	5.6	75
WENDOVER	4237	868.8		75	54	64.3	2.9	85	21	42	11	0	0			0.93	0.27	0.45	5	5	0.0	0						8	14	9	5.5	
VERMONT																																
BURLINGTON	331	1001.8	1016.5	65	39	52.4	- 3.4	79	31	26	3	0	9	40	65	2.37	- 0.62	0.75	12	2	T	T	8.7	S	27	S	18	8	9	14	6.0	68
VIRGINIA																																
LYNCHBURG	947	993.3		74	53	63.8	- 1.5	93	9	37	2+	1	0			1.87	- 1.34	1.15	11	3	0.0	0	6.4		26	N	30	8	10	13	6.2	58
NORFOLK	26	1017.8	1019.2	75	55	64.6	- 2.9	96	10	39	3	2	0	52	66	1.55	- 1.81	0.68	6	3	0.0	0	11.1	S	30	SW	8	4	12	15	6.7	60
RICHMOND	162	1012.5	1018.8	76	52	64.0	- 2.5	94	10+	34	3	2	0	50	65	2.39	- 1.33	1.32	10	3	0.0	0	8.8	SSW	27	N	11	6	13	12	6.1	56
ROANOKE	1174	976.8	1018.8	76	53	64.4	- 1.3	92	9	36	2+	1	0	46	56	1.94	- 1.85	1.23	7	1	T	T	9.4	SE	33*	NW	1	7	13	11	5.9	
WASHINGTON																																
OLYMPIA	190	1010.8	1018.1	67	39	53.2	- 1.9	90	20	31	8	1	4	43	70	1.76	- 0.25	0.75	9	1	0.0	0	6.7	SSW	25*	SW	11+	9	9	13	6.1	
SEATTLE TACOMA	400	1003.4	1017.5	68	48	57.7	2.7	93	21	36	3	2	0	43	62	0.90	- 0.83	0.52	4	0	0.0	0	9.4	SW	33*	S	1	9	11	11	5.8	
SEATTLE U	14			67	50	58.6	1.2	92	21	40	3	2	0			0.94	- 0.65	0.58	5		0.0	0			60	S	1					69
SPOKANE	2356	946.8	1015.3	67	42	54.8	- 0.9	84	29	32	11+	0	3	37	54	0.98	- 0.23	0.60	5	1	T	T	8.1	SW	34	SW	1	11	9	11	5.0	79
STAMPEDE PASS R	3958	880.2		52	37	44.5	0.6	74	21	25	3	0	11			2.35	- 1.90	0.79	11	0	14.0	63						7	7	17	6.5	
TATOOSH ISLAND	101	1015.1	1018.1	57	47	51.8	0.7	74	20	39	3+	0	0	45	79	3.33	0.33	1.29	11	1	0.0	0	13.7	ENE	56	S	5	7	10	14	6.1	63
WALLA WALLA U	949	979.2		72	50	60.9	- 0.1	88	29+	42	4+	0	0			0.67	- 0.82	0.42	8	1	0.0	0	4.9	W#	17	W	5	12	8	11	5.1	70
YAKIMA	1061	976.7	1015.5	73	42	57.8	- 0.7	89	29	31	3	0	2	36	48	0.43	- 0.11	0.32	4	1	0.0	0	7.6	W	25*	SSW	1	13	8	10	4.7	
WEST INDIES																																
SAN JUAN P.R.	15	1013.1		85	72	78.2	- 0.5	86	31+	68	2	0	0	71	81	6.85	- 0.27	1.57	23	8	0.0	0	8.2	ENE	25	E	29	0	13	18	7.3	59
SWAN ISLAND	28	1012.4		87	77	82.1	- 0.4	89	25+	73	29	0	0			2.01	- 1.29	0.70	7	1	0.0	0						8	13	10	5.8	
WEST VIRGINIA																																
CHARLESTON	939	983.3	1018.7	74	49	61.3	- 3.0	92	9	28	2	1	2	47	64	3.48	- 0.23	1.09	14	7	0.2	T	6.0	SW	35*	SW	28	7	10	14	6.3	
ELKINS	1970	949.6	1019.1	70	43	56.4	- 2.6	84	10+	27	2	0	5	44	69	2.33	- 2.25	0.65	13	5	0.7	T	7.9	SSE	33*	NNW	14	5	12	14	6.7	
HUNTINGTON	827	988.8	1018.9	75	52	63.6		92	9	32	2	1	1	49	64	4.54	0.76	1.45	11	7	T	T	6.6	N	29*	W	28	6	12	13	6.7	
PARKERSBURG U	615			73	50	61.6	- 2.4	90	9	30	2	1	1			0.99	- 2.71	0.31	9	2	T	T	6.9		28	W	14					63
WISCONSIN																																
GREEN BAY	682	994.4	1017.2	67	42	54.4	0.1	83	8	27	1	0	3	42	66	1.54	- 1.52	0.85	12	5	T	T	9.5	SW	34	NE	10	5	8	18	7.1	49
LA CROSSE	652	992.0	1016.8	68	47	57.5	- 1.7	85	7	32	1	0	1	44	64	2.04	- 1.72	0.81	7	4	0.0	0	11.2	SE	52*	ESE	10	5	11	15	6.7	
MADISON	858	982.0	1017.4	68	43	55.4	- 0.7	84	8	27	1	0	3	44	68	1.82	- 1.52	0.95	9	4	T	T	9.4	S	33	SE	12	6	11	14	6.6	31
MILWAUKEE	672	992.8	1018.0	63	42	52.3	- 1.1	84	8	24	1	0	2	40	64	1.95	- 1.21	0.80	13	4	T	T	11.3	NNE	34	N	10	8	11	12	6.0	66
WYOMING																																
CASPER	5319	836.9	1013.3	69	41	55.2	2.1	83	7	31	13	0	1	35	52	0.80	- 1.23	0.18	8	5	0.0	0	11.1	WSW	36*	WSW	9	8	12	11	6.2	
CHEYENNE	6126	813.6	1013.6	71	41	55.8	4.4	81	11	31	22+	0	2	34	52	1.14	- 1.38	0.45	6	7	T	T	12.5	WNW	38	NW	1	7	14	10	5.8	76

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days												Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
LANDER	5563	834.6	1012.9	70	41	55.5	2.6	81	5	31	13	0	1	34	49	0.59	- 2.06	0.22	5	5	0.0	0	7.9	W	48	SW	9	8	14	9	5.9	75
SHERIDAN	3942	884.3	1015.1	66	40	53.2	- 0.4	80	6	26	21	0	5	40	61	1.54	- 1.03	0.74	8	4	0.0	0	7.4	WNW	34	NW	1	6	10	15	6.8	55

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
ALABAMA	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
BIRMINGHAM	186	993.6	1018.8	27.8	15.6	21.4	0.1	32.8	16	3.3	2	1	0	15.0	69	94	8	52	6	7	0	0	3.8	E	14.8	W	28	8	10	13	6.3	67
HUNTSVILLE	184	995.6	1018.7	27.8	14.4	21.0	-0.3	33.9	16	3.3	2+	3	0	13.9	66	78	- 8	53	8	5	0	0	3.6	SE	15.6*	NNE	22	9	12	10	5.9	
MOBILE	64	1015.6	1017.9	30.6	18.9	24.5	1.1	34.4	12	11.1	2	9	0	18.3	73	51	- 73	22	7	7	0	0	3.4	SW	22.8*	NW	7	6	19	6	5.6	
MONTGOMERY	59	1010.1	1018.3	30.0	17.2	23.5	1.1	33.9	16+	6.7	2	11	0	16.1	67	78	- 10	46	5	4	0	0	3.5	E	13.0	N	26+	9	12	10	5.7	61
ALASKA												B																			
ANCHORAGE	27	1008.6	1013.5	13.3	3.3	8.3	0.6	22.2	29	- 2.8	2	2	7	0.6	61	11	- 2	8	5	0	99	T	3.0	SSE	13.0*	SE	22	7	11	13	6.4	59
ANNETTE	34	1012.4	1016.4	14.4	6.1	10.3	1.1	31.1	21	1.1	2	3	0	5.0	73	93	- 86	16	14	0	T	T	3.2	SE	10.7*	SE	13	4	10	17	7.3	
BARROW	7	1016.6	1017.2	- 1.7	- 5.6	- 3.6	3.9	3.9	28+	-10.6	5	0	31	- 5.0	89	8	5	3	11	0	91	635	5.3	E	15.6*	ENE	6	1	4	26	8.9	
BARTER ISLAND	12	1015.4	1017.4	0.0	- 5.6	- 2.8	3.5	7.2	20	-10.6	6+	0	31	- 4.4	85	2	- 4	1	6	0	23	864	4.2	E	13.4*	WNW	25	1	4	26	8.9	
BETHEL	38	1010.8	1012.2	9.4	0.6	4.8	0.9	21.1	30	- 6.7	1	1	15	1.7	83	34	9	11	12	0	79	51	5.5	S	14.3*	SSW	6	2	8	21	8.2	
COLD BAY	29	1009.7	1013.5	7.8	2.2	4.9	0.7	14.4	29	- 3.3	11	0	7	2.2	83	34	- 25	13	14	0	23	T	7.2	SSE	19.2*	SSE	20	0	5	26	9.0	
CORDOVA	12	1012.7	1014.3	12.2	2.2	7.2	0.7	20.6	19	- 1.7	6+	0	8	3.9	80	169	41	36	15	0	20	T	3.0	ESE	9.8*	ESE	13	5	6	20	7.4	
FAIRBANKS	133	995.9	1013.0	16.1	3.3	9.7	1.3	28.9	22	- 2.8	6	8	5	- 0.6	51	3	- 15	2	3	0	T	127	3.0	SSW	9.8*	NNE	23	9	8	14	6.1	
JUNEAU	5	1015.7	1015.7	15.0	3.9	9.3	1.7	25.0	21	- 1.1	2	2	4	2.8	67	51	- 31	16	11	0	0	0	4.2	ESE	17.9*	ESE	29	7	5	19	7.1	51
KING SALMON	13	1011.1	1012.5	11.7	1.1	6.4	0.1	21.1	29	- 3.9	2	1	11	1.1	72	28	3	8	12	0	71	T	4.6	E	12.5*	E	17	4	3	24	7.9	
KOTZEBUE	3	1012.0	1012.4	5.0	- 2.2	1.3	1.9	17.8	25	-15.0	3	0	18	- 2.2	80	21	13	14	7	0	79	483	6.4	ESE	16.5*	SSE	7+	9	7	15	6.4	
MC GRATH	102	999.9	1012.7	13.3	1.1	7.2	0.4	23.3	28+	- 7.2	4	5	14	- 0.6	61	9	- 13	4	7	1	T	127	3.1	N	11.2	SSW	7	5	7	19	7.0	
NOME	4	1010.2	1010.9	6.7	0.0	3.1	1.4	21.1	28	- 8.3	1	1	18	- 0.6	77	22	5	6	9	0	99	178	6.1	SE	14.3*	S	7+	8	7	16	6.6	31
ST. PAUL ISLAND	7	1010.2	1011.0	4.4	0.6	2.3	0.7	7.8	30	- 2.8	1	0	12	0.6	89	33	0	11	12	0	5	127	6.8	S	17.4*	WSW	6	0	3	28	9.2	
SHEMYA	37	1004.0	1015.5	5.6	2.8	4.2	0.8	6.7	21+	0.6	20	0	0	2.8	91	50	- 11	11	0	0	T	T	9.6	WSW	20.6*	S	26+	0	2	29	9.5	0
YAKUTAT	9	1014.6	1015.6	12.2	3.3	7.8	0.8	26.1	21	- 1.7	5	2	4	3.9	79	296	93	63	17	0	0	0	3.4	E	17.0*	SE	29	6	4	21	7.3	
ARIZONA																																
FLAGSTAFF	2131	791.1	1014.4	21.7	1.1	11.5	1.0	26.1	18+	- 4.4	13+	0	14	- 6.7	30	1	- 12	1	1	0	0	0	3.5	SSW	13.0*	SSW	23	15	8	8	4.0	
PHOENIX	340	971.7	1009.9	36.7	17.2	26.7	1.7	40.6	20+	11.1	13+	29	0	1.1	19	T	- 3	T	0	0	0	0	3.4	ESE	9.4*	SW	24+	18	7	6	3.2	85
PRESCOTT	1528	847.1	1012.5	26.7	8.3	17.6	1.3	31.1	6	0.0	12	0	1	- 5.6	23	T	- 6	T	1	0	0	0	4.8	SW	15.2	SW	9	18	8	5	3.4	88
TUCSON	788	924.0	1010.3	33.9	16.1	25.2	2.4	37.8	20	11.7	12	26	0	- 5.0	14	T	- 3	T	0	0	0	0	4.0	SSE	13.9	SW	23	17	7	7	3.7	86
WINSLOW	1487	851.4	1012.8	30.0	8.3	19.2	0.7	33.3	18	- 0.6	12	6	1	- 6.1	20	T	- 8	T	0	0	0	0	4.8	SW	17.9*	SW	11	17	5	9	4.1	
YUMA	61	1005.2	1010.2	36.1	18.3	27.3	0.6	41.7	6	12.2	12	29	0	1.7	21	0	-	0	0	0	0	0	3.0	S	9.4	SE	21	17	11	3	2.9	91
ARKANSAS																																
FORT SMITH	137	1000.3	1017.2	28.3	15.6	21.8	0.8	34.4	11	3.9	1	7	0	16.1	71	99	- 35	46	8	6	0	0	3.1	ENE	17.9	NW	16	4	11	16	6.8	58
LITTLE ROCK	78	1004.7	1017.9	28.3	15.0	21.9	0.5	33.3	16	4.4	2	5	0	15.0	68	33	-101	24	7	7	0	0	3.2	SW	22.4	SE	28	2	17	12	6.5	73
TEXARKANA	110	1003.8	1017.4	28.9	17.2	22.9	0.9	32.8	27	7.8	1	2	0	16.7	72	117	- 8	80	2	2	0	0	4.0	SSW								
CALIFORNIA																																
BAKERSFIELD	151	997.6	1015.0	27.2	13.9	20.7	-0.7	35.0	17	7.2	12	5	0	9.4	52	7	1	6	2	1	0	0	3.7	NW	10.3*	NW	10	11	15	5	4.5	
BISHOP	1252	872.3		27.2	7.2	17.2	0.2	34.4	19	- 0.6	11	4	2			6	1	3	5	5	0	0						10	11	10	5.1	
BLUE CANYON	1609	839.7		14.4	6.7	10.7	-0.2	26.7	19	- 1.7	9	0	5			112	33	40	10	7	375	279	3.2	SSW	13.9	SE	20	6	8	17	6.9	
BURBANK	213	989.9	1015.7	21.1	12.8	16.9	-1.1	27.8	6	8.3	11	0	0	10.6	70	T	- 4	T	1	0	0	0	2.8	S	9.8*	NNW	11	6	12	13	6.0	
EUREKA U	13	1016.4		14.4	10.0	12.2	0.5	19.4	5	5.0	13	0	0			44	- 11	16	7	0	0	0	3.4	N#	13.9	S	4	1	5	25	8.6	41
FRESNO	99	1002.5	1014.4	27.2	12.2	19.8	0.1	36.1	17	6.7	12	4	0	10.0	58	10	2	4	3	1	0	0	3.7	NW	11.2	NW	10	14	8	9	4.8	86
LONG BEACH	10	1015.0	1016.4	22.8	13.9	18.1	0.7	27.2	6	9.4	13+	0	0	10.6	65	T	- 3	T	0	0	0	0	3.0	WNW	9.4*	W	11	6	12	13	6.5	
LOS ANGELES	30	1012.3	1015.9	20.6	13.9	17.2	0.4	23.9	8	10.0	12	0	0	12.2	75	1	- 3	T	2	0	0	0	3.7	W	12.5*	W	11	7	9	15	6.2	
LOS ANGELES U	95			21.7	13.9	17.8	-0.4	27.2	6	11.7	12+	0	0			T	- 4	T	0	0	0	0	2.6	W#	11.6	W	11	6	14	11	6.2	52
MT SHASTA R	1080	892.0		20.0	6.7	13.2	1.1	31.1	20	- 0.6	12	0	1			49	- 1	12	11	7	T	T						7	12	12	6.0	
OAKLAND	1	1016.8	1017.2	18.9	11.7	15.1	-0.3	30.0	17	7.2	12+	0	0	9.4	72	13	- 4	8	4	0	0	0	4.8	WNW	11.6*	WNW	31	6	11	14	6.7	
POINT ARGUELLO R	112	1003.4		15.6	9.4	12.5	-0.5	22.2	8	5.0	10	0	0			7	2	5	8	0	0	0	3.5		11.2*	NW	1	6	6	19	7.4	
RED BLUFF	104	1001.9	1014.6	25.6	12.8	19.2	-1.0	36.7	19	6.1	12	5	0	10.0	59	33	4	15	5	2	0	0	4.0	SSE	14.8	SE	28	7	10	14	6.3	70
SACRAMENTO	5	1014.8	1015.8	23.3	10.0	16.7	-2.2	32.2	17	5.0	9	1	0	11.7	77	18	3	10	3	1	0	0	3.0	SSW	11.6	W	10	10	8	13	5.8	77
SACRAMENTO U	7			23.3	11.1	17.2	-1.6	33.3	17	6.7	12+	2	0			16	1	8	3		0	0										
SANDBERG R	1377	862.7		17.8	7.2	12.7	-1.0	26.7	17	0.0	11	0	1			1	- 7	1	1	0	0	0	6.1	NNW	16.5*	N	1	16	5	10	4.4	
SAN DIEGO	4	1012.9	1016.0	20.6	14.4	17.6	0.1	23.9	7	10.6	12	0	0	11.7	71	2	- 2	1	3	1	0	0	3.6	WNW	8.5	NW	25+	6	14	11	6.2	55
SAN FRANCISCO	2	1017.0	1017.7	17.8	10.0	13.8	-0.8	25.6	17	6.1	9	0	0	10.0	82	13	1	8	2	0	0	0	5.2	W	16.1	WSW	30+	7	9	15	6.6	
SAN FRANCISCO U	16			16.7	11.1	14.0	-0.1	25.0	17	9.4	12+	0	0			11	- 5	10	4	0	0	0	4.2	SW#	12.1	W	30					57
SANTA CATALINA	478	960.1		17.2	11.1	14.2		26.7	6	9.4	11	0	0			1		1	4	0	0	0						6	4	21	7.1	
SANTA MARIA	73	1008.8	1017.4	18.3	9.4	13.8	-0.4	24.4	6	5.0	13+	0	0	10.6	83	11	5	6	3	0	0	0	3.8	WNW	13.0*	WNW	31+	8	6	17	6.6	
STOCKTON	9	1014.3	1015.9	25.0	10.6	17.9		34.4	17	3.3	9	2	0	10.0	65	12		6	3	2	0	0	3.7	W	13.0*	W	10	12	7	12	5.5	
COLORADO																																
ALAMOSA	2297	772.4		22.2	1.7	11.9	1.4	25.6	18	- 6.1	13	0	10			3	- 15	3	2	4	0	0						8	16	7	5.2	
COLORADO SPRINGS	1882	812.6	1014.6	23.9	7.8	15.7	3.2	30.6	7	1.7	22	0	0	0.0	43	20	- 35	6	11	9	0	0	4.6	NNE	17.0*	SW	11	5	16	10	6.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

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State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
COLORADO	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s							%
DENVER	1610	837.5	1012.4	25.0	7.2	16.1	2.3	30.6	30+	1.7	21+	0	0	0.0	41	17	- 51	7	7	4	0	0	4.7	S	17.4	NW	30	7	16	8	5.3	67
GRAND JUNCTION	1478	857.6	1010.4	27.2	11.1	19.1	2.3	31.1	7	3.9	12	0	0	- 6.1	20	T	- 15	T	1	3	0	0	3.4	SE	18.3	SW	11	13	10	8	4.6	75
PUEBLO	1414	855.9	1012.3	27.2	8.9	17.9	2.1	33.9	7	2.2	20	5	0	1.7	41	10	- 36	6	6	4	0	0	4.3	E	21.9	NE	16	10	13	8	5.4	69
CONNECTICUT																																
BRIDGEPORT	2	1017.9	1018.7	19.4	8.3	13.8	-1.1	25.6	9+	3.3	25+	0	0	7.2	70	66	- 28	18	9	4	0	0	5.8	WSW	15.6*	ESE	10	11	9	11	5.2	
HARTFORD	52	1011.4	1017.3	22.2	6.7	14.5	-0.4	32.8	9	0.6	13	1	0	6.7	65	58	- 29	17	12	3	0	0	3.7	S	13.4	W	8	8	10	13	6.2	65
NEW HAVEN	2	1017.4	1018.0	18.9	7.8	13.4	-0.6	25.0	31+	2.8	13	0	0			71	- 23	17	11	6	0	0	3.5		15.2	SW	1	12	6	13	5.5	69
DELAWARE																																
WILMINGTON	24	1015.2	1018.4	22.2	8.9	15.7	-1.3	33.3	9	2.2	24+	1	0	8.3	65	31	- 58	14	8	2	T	T	3.4	SW	12.5*	NW	20	10	9	12	5.6	
DIST.OF COLUMBIA																																
WASHINGTON U	22			24.4	12.8	18.6		36.1	9	3.9	1	3	0			32	- 67	15	5													
WASH NATL AP	4	1014.2	1018.8	23.9	12.8	18.3	-0.5	35.6	9	5.0	3+	2	0	8.9	58	27	- 78	12	7	2	T	T	3.7	S	13.4	W	20	11	9	11	5.5	65
FLORIDA																																
APALACHICOLA U	4	1016.2		27.8	20.6	24.3	0.6	31.1	16	14.4	5+	0	0			57	- 17	30	7	7	0	0	3.2		12.1	E	2	9	18	4	4.7	73
DAYTONA BEACH	9	1017.2	1018.8	29.4	18.9	24.3	0.9	35.0	18+	14.4	5	7	0	17.8	70	173	101	58	13	12	0	0	4.2	ESE	11.2*	ESE	13	8	11	12	6.0	
FORT MYERS	4	1017.2		31.7	19.4	25.6	0.3	33.3	19+	14.4	6	21	0			193	95	50	10	13	0	0	2.7		15.6*	ESE	21	10	15	6	4.9	
JACKSONVILLE	7	1017.4	1018.7	30.6	18.9	24.6	0.3	35.0	17+	9.4	2	13	0	17.8	72	44	- 44	16	9	6	0	0	3.8	NE	15.6	NE	14	5	16	10	6.2	80
KEY WEST	2	1016.1	1017.3	29.4	23.9	26.4	0.3	31.1	29+	20.6	6	0	0	20.0	69	87	17	66	8	1	0	0	4.8	ESE	12.1	SE	30	10	14	7	4.9	82
LAKELAND U	65			30.6	19.4	25.0	0.1	33.9	16+	14.4	2	14	0			104	14	21	9	12	0	0	3.2					9	14	8	5.4	68
MIAMI BEACH	3			28.3	22.8	25.6	-0.1	30.6	6	16.7	6	0	0			125	9	101	8		0	0	6.3		11.6	SE	3	10	15	6	5.0	69
MIAMI	2	1016.5	1017.7	28.9	21.1	25.0	-0.3	30.6	27+	12.8	6	0	0	20.0	74	161	- 3	70	10	7	0	0	4.6	ESE	13.4*	ENE	29	8	12	11	5.8	
ORLANDO	32	1014.0	1018.4	31.7	19.4	25.5	1.0	35.6	21	14.4	2	21	0	18.3	71	90	-	36	9	8	0	0	4.2	SSE	10.3*	NNE	31+	8	13	10	5.7	
PENSACOLA U	4			28.3	20.6	24.4	0.8	31.1	30+	14.4	2+	0	0			26	- 87	20	4	5	0	0	3.7	SW	10.7	SE	2					81
TALLAHASSEE	18	1016.1	1018.7	30.0	18.3	24.2	0.3	34.4	12	7.8	5	7	0	17.8	74	139	35	43	10	12	0	0	4.0	E	16.5*	W	18	3	19	9	5.9	
TAMPA	6	1017.0	1018.5	30.6	18.9	24.7	-0.2	33.3	31+	12.8	5	7	0	18.9	74	40	- 33	12	7	10	0	0	5.3	ENE	15.6*	E	27	10	13	8	5.1	81
WEST PALM BEACH	5	1017.3	1018.3	29.4	20.6	24.9	-0.4	33.3	11	13.3	6	2	0	19.4	73	170	40	123	11	7	0	0	4.1	ESE	14.3*	NE	3	9	11	11	5.9	
GEORGIA																																
ATHENS	245	990.6	1019.4	27.2	14.4	20.7	-0.4	33.3	11	3.3	2	2	0	14.4	70	148	56	57	10	7	0	0	3.2	ENE	9.8*	WSW	17	11	8	12	5.7	
ATLANTA	306	977.1	1018.9	26.1	15.0	20.4	-0.4	31.1	11	5.0	1	0	0	13.9	69	118	38	39	7	7	0	0	3.1	E	11.2*	NW	27	8	12	11	5.8	75
AUGUSTA	44	1011.6	1018.3	28.9	14.4	21.6	-0.4	35.6	11	1.7	2	8	0	15.0	70	68	- 8	32	7	6	0	0	3.1	SE	15.6*	W	20	8	8	15	6.3	
COLUMBUS	117	1004.3		29.4	15.6	22.6	0.3	33.3	11	3.9	2	7	0			30	- 59	18	6	5	0	0	3.4		11.2*	WSW	28	10	11	10	5.7	
MACON	109	1005.1	1018.7	29.4	16.1	22.9	-0.4	35.0	11	6.1	2	11	0	15.0	66	84	- 1	54	7	5	0	0	3.3	ENE	11.6	NW	28	9	12	10	5.6	67
ROME	194	996.0		27.2	12.8	19.8	-0.6	32.2	9	0.6	2	1	0			105	8	55	9	5	0	0						10	14	7	5.2	
SAVANNAH	15	1016.6	1019.2	28.3	16.7	22.6	-0.4	35.0	11	3.9	2	8	0	16.1	72	98	2	51	5	7	0	0	4.3	WSW	11.6	E	31+	8	9	14	6.2	73
THOMASVILLE U	86			30.6	18.3	24.4	0.3	33.3	28+	10.6	2	13	0			57	- 40	25	6	9	0	0						8	12	11	5.8	
HAWAII																																
HILO	9	1015.4	1017.1	27.2	18.9	22.9	0.2	29.4	27	16.1	25	0	0	18.9	79	320	83	88	28	0	0	0	3.8	WSW	12.5	ESE	14	1	8	22	8.5	29
HONOLULU	2	1016.9	1017.1	28.3	21.1	24.7	0.3	30.6	26	18.3	16	0	0	17.8	66	85	60	82	4	1	0	0	4.9	ENE	13.0	NE	7	5	8	18	7.3	65
KAHULUI	13	1014.0	1016.8	28.3	20.0	24.1		31.1	31	16.7	26+	0	0	18.3	73	68		46	9	1	0	0	9.8	NE	20.6*	NE	11	4	11	16	7.1	72
LIHUE	35	1013.0	1018.5	27.2	21.1	24.1	0.5	28.9	30+	17.2	14	0	0	18.3	74	40	- 26	7	20	1	0	0	6.0	NE	11.6	NE	8	0	7	24	8.1	48
IDAHO																																
BOISE	865	918.2	1013.5	22.8	9.4	16.0	1.7	30.0	29+	3.9	16+	0	0	5.0	53	22	- 11	9	11	2	0	0	3.4	WNW	10.7	NW	11	11	7	13	5.8	64
IDAHO FALLS 42NW R	1460			20.0	3.9	11.9	0.4	26.1	28	- 6.7	2	0	3			128	106	45	10													
IDAHO FALLS 46W R	1504	847.6		20.0	5.0	12.4	1.0	26.7	29	- 0.6	13	0	1			58	30	15	11	3	0	0	3.8	SW	15.6A	SW	1					
LEWISTON	431	963.2		22.8	8.3	15.6	0.9	31.1	21	3.3	4	0	0			12	- 28	5	8	0	T	T						11	6	14	5.5	
POCATELLO	1355	862.9	1014.9	20.6	6.7	13.5	0.7	26.1	22+	2.8	20	0	0	3.3	56	57	29	19	14	9	T	T	3.4	SW	19.2	SW	30	8	5	18	6.5	61
ILLINOIS																																
CAIRO U	96	1004.7		26.1	15.0	20.6	0.0	33.3	16	4.4	1	4	0			86	- 25	27	13	8	0	0	3.4	NW	12.5	W	13	10	9	12	5.8	63
CHICAGO O HARE	201	992.8	1017.7	20.0	7.2	13.5		32.2	8	- 1.7	1	1	2	5.0	56	49		22	6	3	0	0	4.8	NNE	11.2*	W	18+	8	9	14	6.3	
CHICAGO MIDWAY	186	995.1	1017.9	20.6	8.9	14.8	-0.8	32.8	8	0.0	1	1	1	6.1	58	55	- 40	24	8	4	0	0	4.6	SW	14.3	NW	10	8	11	12	6.0	57
MOLINE	177	995.2	1017.5	22.2	8.9	15.6	-0.7	33.3	9+	- 0.6	1	2	1	9.4	70	60	- 37	27	11	2	0	0	4.7	E	14.3	SE	11	7	9	15	6.5	69
PEORIA	199	996.0	1018.5	21.7	8.3	15.0	-1.4	32.2	9	- 0.6	1	1	1	8.3	66	31	- 77	12	7	3	0	0	4.5	S	11.6	NW	21+	7	12	12	6.1	63
ROCKFORD	222	990.3	1017.7	20.6	8.3	14.2	-0.8	31.7	8	0.0	23+	0	2	6.1	60	48	- 49	20	8	3	0	0	5.0	WNW	12.1*	WNW	18+	8	9	14	6.3	
SPRINGFIELD	179	994.3	1017.4	23.3	10.0	16.8	-0.4	33.9	9	0.0	1	3	1	10.0	66	67	- 31	25	6	4	0	0	5.3	SSW	14.3	NW	19	11	8	12	5.5	67

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days								No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.					%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1002.4	1018.3	24.4	10.0	17.4	-1.1	32.2	9	- 2.2	1	1	2	11.1	69	92	- 14	36	11	6	0	0	2.9	SW	13.4	N	16	10	9	12	5.6	73
FORT WAYNE	241	987.3	1018.5	21.1	7.8	14.3	-1.1	30.0	9	- 2.8	1	0	2	7.8	65	58	- 37	20	7	4	T	T	4.6	WSW	16.5	SSW	8	8	12	11	5.6	70
INDIANAPOLIS	242	988.4	1018.4	21.7	9.4	15.4	-0.9	30.0	9	- 1.7	1	0	1	9.4	69	53	- 48	18	9	3	0	0	3.5	WSW	12.1*	SW	8	10	8	13	5.8	68
SOUTH BEND	234	989.7	1017.9	20.0	7.2	13.7	-1.2	30.6	9+	- 2.8	1	0	2	7.2	66	63	- 29	18	7	4	0	0	4.6	ESE	14.3*	SW	8	8	8	15	6.4	
IOWA																																
BURLINGTON	212	991.9	1017.6	22.2	10.0	16.1	-0.4	33.3	9	0.6	1	2	0	9.4	67	83	- 19	43	9	5	0	0	4.8	WNW	15.2	SW	8	7	12	12	6.0	68
DES MOINES	289	985.8	1017.2	20.6	10.0	15.4	-1.2	31.1	8	0.0	23	0	1	10.0	74	100	- 3	27	10	7	0	0	4.8	S	18.8	NW	3	7	4	20	7.1	45
DUBUQUE	325	991.6		20.6	7.8	14.0	-0.5	30.0	8	- 0.6	23	0	2			50	- 58	20	9	4	0	0			15.6*	SW	7	6	8	17	6.5	
SIOUX CITY	334	974.4	1015.7	22.8	10.6	16.8	0.7	32.2	9+	- 0.6	22	2	1	8.9	65	74	- 8	49	9	5	0	0	4.8	SSE	15.2	W	12	7	8	16	6.8	53
WATERLOO	265	985.1	1017.1	21.7	8.9	15.2	-0.3	31.7	8	- 1.7	1	0	3	8.9	67	59	- 36	24	10	5	0	0	5.2	S	14.3*	NW	20+	7	9	15	6.4	
KANSAS																																
CONCORDIA	448	965.2	1015.0	24.4	12.2	18.2	0.7	35.0	9	1.7	22	3	0	11.7	70	37		17	11	7	0	0	5.4	SSE	15.2	SE	1	6	9	16	6.7	57
DODGE CITY	791	926.8	1014.0	27.2	12.8	19.9	2.3	37.8	12	5.6	22+	7	0	9.4	59	73	- 9	30	11	10	0	0	5.3	SSE	18.8	SW	11	10	4	17	6.4	60
GOODLAND	1111	888.0	1014.0	25.6	8.9	16.9	2.2	35.0	11	2.2	22	3	0	7.2	59	44	- 18	13	9	11	0	0	6.1	SSE	23.2*	WSW	31	9	9	13	6.2	
TOPEKA	267	980.5	1016.0	24.4	12.2	18.5	0.5	32.2	8	- 3.3	1	1	1	12.8	72	125	13	41	12	10	0	0	5.7	S	32.2	N	15	4	13	14	6.7	53
WICHITA	403	965.9	1014.8	26.1	13.9	20.2	1.3	34.4	4	3.3	1	7	0	13.3	68	156	55	119	14	12	0	0	5.3	S	20.1	S	4	7	5	19	7.0	49
KENTUCKY																																
COVINGTON	265	986.3	1018.3	21.7	8.3	14.9	-2.6	30.6	9	- 2.8	1	0	1	8.9	69	69	- 22	36	8	3	0	0	3.7	SSW	11.2*	WNW	18	6	12	13	6.2	
LEXINGTON	298	983.1	1018.9	22.8	11.1	17.1	-0.9	31.1	9	- 1.7	1	0	1	10.0	66	88	- 9	33	10	6	0	0	3.7	SW	8.9*	WNW	17+	6	14	11	6.0	
LOUISVILLE	144	999.1	1018.3	23.9	11.1	17.4	-0.6	31.7	9	- 0.6	1	0	2	11.1	67	116	17	29	10	7	0	0	3.4	WSW	15.2	NW	28	10	8	13	5.9	60
LOUISIANA																																
ALEXANDRIA	28	1013.4	1018.1	30.6	15.6	23.0		33.3	16+	5.0	2	10	0	17.2	73	104		79	4	5	0	0	2.6	SW	8.9	W	28+	5	16	10	6.1	
BATON ROUGE	20	1015.0	1018.1	31.7	17.8	24.9	1.4	34.4	29+	11.7	2+	17	0	17.8	70	16	-106	9	4	5	0	0	3.4	SW	8.9	ESE	2	8	15	8	5.4	
LAKE CHARLES	4	1016.4	1017.9	29.4	18.9	24.2	0.2	33.3	29	13.9	2+	1	0	18.3	74	14	-103	13	2	6	0	0	3.8	SSW	9.4*	SSE	22+	5	11	15	6.3	
NEW ORLEANS	1	1016.0	1018.1	30.0	18.3	24.0	0.7	32.2	29+	13.9	5+	4	0	19.4	77	81	- 31	69	4	5	0	0	3.1	SW	9.4*	SW	9	10	12	9	5.5	
NEW ORLEANS AUDUBON	2	1011.4		30.0	20.6	25.4		32.8	29+	16.1	1	4	0			16		9	5	5	0	0	1.6	SW	5.8	NE	1	8	15	8	5.2	64
SHREVEPORT	77	1008.5	1017.9	30.0	17.8	23.8	0.9	33.9	27+	8.9	23	10	0	16.7	66	57	- 65	57	3	4	0	0	4.4	S	12.5	NE	22	7	9	15	6.3	70
MAINE																																
CARIBOU	190	992.4	1015.7	16.7	3.3	9.9	-0.1	26.7	28	- 2.2	13	0	7	2.8	64	59	- 18	19	13	2	T	T	4.5	SSE	20.6*	WSW	19	8	11	12	6.1	
PORTLAND	19	1012.7	1016.7	18.3	4.4	11.4	-0.3	27.2	4	- 1.1	24	0	2	6.1	71	89	3	31	13	2	T	T	4.3	S	18.8	SW	20	10	10	11	5.9	61
MARYLAND																																
BALTIMORE	45	1013.7	1018.6	22.8	10.0	16.3	-1.7	33.9	10+	1.7	12	2	0	8.9	66	43	- 58	14	9	2	T	T	4.1	W	16.5	W	20	12	10	9	5.1	64
BALTIMORE U	4			23.3	13.3	18.2	-0.8	35.6	9	4.4	1	2	0			38	- 67	15	9													
FREDERICK	90			22.8	8.9	15.9	-1.1	33.9	10+	1.1	13+	2	0			68	- 31	32	8		0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	992.8	1016.2	20.0	7.8	13.8	0.1	30.0	9	- 1.1	12	0	1		65	92	4	24	11		0	0	6.4	SSW	18.8	SSW	20					63
BOSTON	5	1012.1	1016.8	20.6	10.0	15.2	0.3	31.1	9	2.2	12	0	0	5.6	58	73	- 12	23	9	3	0	0	6.3	SSW	21.0	W	20	8	13	10	5.6	66
NANTUCKET	13	1017.5	1018.1	15.6	7.2	11.5	0.1	22.8	30	3.9	12+	0	0	7.2	78	119	46	58	12	2	0	0	6.0	WSW	17.0	S	1	11	6	14	6.0	65
PITTSFIELD	357			19.4	3.9	11.7	-0.9	28.3	9	- 2.8	24+	0	6			60	- 38	15	11		76	76										
WORCESTER	301	980.2	1016.9	19.4	6.7	13.2	0.3	28.9	9	- 0.6	12	0	2	3.9	58	76	- 20	25	10	4	T	T	4.0	W	11.2*	WSW	20	10	10	11	5.6	
MICHIGAN																																
ALPENA	210	992.1		16.7	2.2	9.2	-1.9	28.9	31	- 5.0	1	0	14			139	65	55	12	5	T	25	3.5	SE	13.4	NE	10	10	5	16	6.1	67
DETROIT	189	991.3	1018.1	20.0	8.9	14.3	-0.4	30.0	8	- 0.6	1	0	1	5.6	58	58	- 32	20	10	5	T	T	4.5	SW	26.8	NW	4	10	6	15	6.0	61
DETROIT M WAYNE CO	193	994.0	1018.3	20.0	6.7	13.3	-1.1	31.1	9	- 1.1	1	0	2	7.2	70	104	14	35	11	4	T	T	3.6	SW				10	9	12	5.7	
DETROIT WILLOW RUN	217	989.6	1018.1	20.0	6.7	13.1	-2.0	31.1	9	- 0.6	23+	0	3	6.7	68	84	- 5	43	9	5	T	T	5.1	SW	16.1*	SW	8	9	9	13	6.0	
ESCANABA U	181	994.4		13.9	4.4	9.2	-1.0	21.1	31	- 2.2	22	0	5			101	25	56	13	3	T	T	4.4		15.6	N	9	4	12	15	6.7	50
FLINT	233	990.8	1018.7	18.9	6.1	12.3	-1.4	28.3	8	- 3.3	1	0	2	6.1	66	59	- 27	40	7	4	T	T	4.5	WSW	13.4*	SW	19	5	10	16	6.5	
GRAND RAPIDS	210	992.8	1018.3	19.4	6.7	13.0	-0.9	27.8	8	- 2.8	1	0	2	5.0	61	70	- 18	39	9	3	0	T	4.6	W	15.2	NW	14+	6	10	15	6.6	64
LANSING	260	985.8	1018.0	19.4	6.1	12.7	-1.3	28.9	8	- 3.3	1	0	4	5.0	62	50	- 45	24	9	3	T	T	5.6	W	18.8	W	8	8	7	16	6.2	64
MARQUETTE U	206	989.6		15.6	5.0	10.3	0.3	30.0	31	- 2.2	22	0	5			44	- 31	11	13	2	18	25	3.6	NW#	15.2	SW	2	7	5	19	6.9	65
MUSKEGON	191	994.7	1017.9	18.9	7.2	13.0	0.3	25.6	31+	0.6	23	0	0	7.2	71	76	1	33	9	5	T	T	4.3	SSW	13.0*	ENE	10	8	8	15	6.1	
SAULT STE MARIE	220	994.2	1017.2	14.4	2.2	8.4	-1.1	25.6	31	- 2.8	1	0	12	2.2	68	67	- 3	25	10	1	36	25	4.2	WNW	10.3*	W	19	9	6	16	6.5	62
MINNESOTA																																
DULUTH	435	974.5	1016.6	16.1	3.3	9.8	-0.1	27.8	7	- 5.0	11	0	7	2.2	63	58	- 26	17	15	2	5	T	5.0	ESE	16.1	NE	9	3	11	17	7.7	47

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MINNESOTA	M.	Mb.	Mb.	C.	C.	C.	C.	C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INTERNATIONAL FALLS	359	974.5	1016.1	16.7	2.8	9.8	-0.6	27.2	30	- 5.0	5	0	9	2.2	64	120	53	31	14	4	T	T	4.0	S	12.1*	WNW	18+	6	9	16	6.9	
MINNEAPOLIS	251	981.6	1016.5	18.9	7.2	13.0	-1.2	33.3	7	- 2.2	23	1	2	7.2	68	129	47	41	14	5	T	T	5.0	S	14.8	S	1	3	12	16	7.3	51
ROCHESTER	395	969.1	1017.1	18.9	6.7	12.8	-0.9	29.4	31	- 1.1	23+	0	3	7.2	71	30	- 63	11	8	6	0	0	6.3	S	14.3*	W	13+	4	13	14	6.8	
ST CLOUD	315	977.1		18.3	6.1	12.3	-0.8	30.6	7	- 2.2	23+	0	3			147	58	54	17	4	0	0						5	11	15	7.1	
MISSISSIPPI																																
JACKSON	93	1005.9	1017.9	30.0	17.2	23.6	1.1	32.8	27+	7.8	1	7	0	16.7	67	37	- 68	33	3	3	0	0	3.2	SW	12.1	NW	28	9	16	6	5.2	80
MERIDIAN	89	1004.6	1018.5	30.6	15.6	23.2	0.8	34.4	15+	5.0	2	12	0	16.7	71	41	- 59	20	5	6	0	0	2.9	S	9.4*	N	22+	8	17	6	5.4	
VICKSBURG U	71	1008.7		28.3	17.8	23.2	0.2	31.1	26+	8.9	1	0	0			26	- 79	21	4	4	0	0	3.4		17.9	W	28	8	14	9	5.5	81
MISSOURI																																
COLUMBIA	237	988.2	1016.5	23.3	12.2	17.8	-0.2	30.6	10+	0.6	1	0	0	12.2	72	115	- 4	38	10	8	0	0	4.7	ESE	20.6	NW	15	8	14	9	5.9	58
KANSAS CITY	226	981.4	1016.0	25.6	13.9	19.7	1.3	33.3	12	1.7	1	3	0	12.2	65	106	- 6	40	11	7	0	0	3.8	S	15.2	SW	8	7	10	14	6.4	73
ST JOSEPH	247	981.7		24.4	12.8	18.3	0.5	32.8	8	- 0.6	1	3	1			144	32	89	8	8	0	0	5.2	S	17.9*	NNE	15+	6	14	11	6.0	
ST LOUIS	163	997.1	1017.8	23.3	11.7	17.7	-1.0	32.8	10	1.1	1	3	0	11.1	68	121	26	39	11	6	0	0	4.7	WNW	13.0	SE	12	10	8	13	5.8	55
ST LOUIS RFC	142			23.9	13.9	18.7	-0.5	32.8	8	6.1	1	1	0			108	11	38	8		0	0										
SPRINGFIELD	386	969.9	1017.1	26.1	13.9	20.1	2.0	32.8	10	- 0.6	1	3	1	13.9	70	197	63	54	11	8	0	0	4.3	SSE	18.8	N	4	4	13	14	6.6	69
MONTANA																																
BILLINGS	1087	891.4	1015.4	18.3	6.1	12.2	-1.1	26.7	30+	- 0.6	21	0	2	5.6	68	63	15	19	16	8	0	0	4.5	NE	17.0	NW	12	8	8	15	6.4	61
GLASGOW	694	940.5		18.3	5.0	11.6	-1.2	30.0	30	- 1.7	21+	0	2			29	- 9	10	11	5	T	0						5	10	16	6.8	
GREAT FALLS	1116	888.7	1016.2	18.9	4.4	11.6	-0.6	29.4	31+	- 1.1	4	0	4	1.1	52	32	- 21	17	9	4	T	T	4.5	W	15.2	NW	7	9	7	15	5.9	61
HAVRE	787	926.4		20.0	4.4	12.2	-0.1	31.7	31	- 2.8	19	0	5			26	- 13	15	9	0	0	0	3.9	E#	17.0	W	1	10	8	13	5.7	65
HELENA	1187	873.6	1015.7	18.9	5.0	11.9	0.3	28.9	29	- 2.2	2	0	2	1.1	53	34	- 6	13	12	2	T	T	3.6	WNW	13.9	W	31	9	7	15	6.2	62
KALISPELL	904	911.9		18.9	1.1	10.1	-1.1	28.9	29	- 5.6	4	0	13			21	- 22	6	8	2	5	T	3.0					10	8	13	5.8	
MILES CITY				20.6	6.7	13.7	-0.4	31.1	31	- 1.7	21	0	1			43	- 1	0			0	0	4.1	W	13.0*	W	15+					
MISSOULA	972	902.2	1016.3	20.6	3.3	12.0	0.6	30.0	29	- 0.6	13	0	3	0.0	48	6	- 41	3	5	1	3	T	3.4	NNW	12.5	NW	31+	9	7	15	5.9	71
NEBRASKA																																
GRAND ISLAND	561	949.3	1015.6	22.2	9.4	15.7	-1.1	31.1	9+	- 1.7	22	0	1	9.4	71	83	- 14	57	11	9	0	0	4.8	S	13.9*	NE	14	10	4	17	6.6	
LINCOLN U	351			23.3	11.7	17.5	0.6	33.9	9	2.2	22	2	0			64	- 24	30	10	7	0	0	5.2	S#	18.8	SE	12+	4	12	15	7.0	53
NORFOLK	471	959.8		22.2	10.0	16.1	0.4	31.7	8	- 1.1	22	0	1			50	- 43	17	7	8	0	0						6	11	14	6.7	
NORTH PLATTE	847	915.4	1013.9	23.3	8.3	15.8	1.1	32.2	7	- 1.1	22+	1	2	8.3	65	101	26	32	15	9	0	0	5.1	SSE	17.9	NW	3	7	10	14	6.6	59
OMAHA	298	976.2	1015.9	22.8	11.7	17.3	0.1	33.3	9	1.1	22	1	0	10.0	67	33	- 56	14	11	4	0	0	5.1	SSE	15.2	S	19+	7	6	18	6.8	56
OMAHA N OMAHA AP	403			22.2	10.6	16.3	0.4	32.8	9	0.6	22	1	0			39	- 47	18	10	5	0	0						4	9	18	7.1	
SCOTTSBLUFF	1204	878.2	1013.6	23.9	7.8	15.7	1.9	33.3	7	2.2	22	1	0	5.6	57	80	11	31	13	13	0	0	5.6	SE	17.4*	WNW	9	8	14	9	5.7	
VALENTINE	789	923.8		22.8	7.2	14.8	0.8	33.9	7	- 3.3	22	1	2			64	- 4	29	8	7	0	0	5.1	N#	18.8	NW	15	6	16	9	5.9	57
NEVADA																																
ELKO	1547	844.2	1014.1	21.1	4.4	12.7	1.6	27.8	20	- 0.6	13	0	3	2.8	55	53	29	14	17	12	15	T	3.2	SW	19.7*	S	28	5	11	15	6.9	
ELY	1907	808.0	1011.4	21.7	3.3	12.4	2.2	26.7	22+	- 3.9	13	0	5	- 2.2	41	10	- 11	4	7	7	18	T	4.2	SSE	19.7	SW	8	3	15	13	6.3	81
LAS VEGAS	659	945.1	1010.2	32.8	16.1	24.4	1.2	37.2	20+	7.2	12	20	0	- 3.3	17	T	- 2	T	0	0	0	0	5.6	SW	15.6*	SW	8	16	10	5	3.7	88
RENO	1342	862.1	1014.8	22.8	5.0	14.0	2.1	31.1	19	- 0.6	1	0	2	5.6	62	73	60	33	9	6	T	T	3.0	S	13.0	W	23+	3	16	12	6.7	77
WINNEMUCCA	1310	866.1		22.8	6.7	14.5	2.4	30.0	20	0.0	12	0	1			48	24	12	12	10	T	T	3.8	S	17.9	N	31	4	10	17	7.2	45
NEW HAMPSHIRE																																
CONCORD	103	1005.8	1016.6	21.7	5.0	13.1	0.0	28.9	9	- 2.2	13	0	4	5.0	62	55	- 25	18	10	2	T	T	3.3	NW	17.9	W	20	10	11	10	5.6	59
MT WASHINGTON OBS	1909	805.0		4.4	- 2.8	0.9	-0.8	12.2	29	-10.0	12+	0	23		80	109	- 39	24	12	1	89	102	11.6	W#	39.3Y	W	8	8	9	14	6.5	44
NEW JERSEY																																
ATLANTIC CITY	18	1017.1	1018.8	22.2	9.4	15.7	-0.6	33.9	9	2.2	1	1	0	7.8	64	75	- 14	49	7	0	0	0	4.6	SSW	10.3*	SW	19+	11	10	10	5.5	60
ATLANTIC CITY U	3			18.9	11.7	15.1	-0.2	33.3	9	2.8	1	1	0			49	- 31	25	9				5.2		12.5*	SSE	18					
NEWARK	3	1017.0	1018.2	21.7	10.6	16.2	-0.5	30.6	20+	3.3	1	0	0	6.7	59	60	- 33	16	11	4	0	0	5.2	SW	22.4*	NW	20	12	8	11	5.3	
TRENTON U	17	1010.7	1017.6	21.7	10.0	15.8	-1.1	31.7	9	1.7	1	0	0			33	- 59	15	8	2	T	T	4.2	SW#	16.1	NW	9	9	10	12	5.7	64
NEW MEXICO																																
ALBUQUERQUE	1618	848.2	1011.4	28.9	11.1	20.0	1.6	33.9	29	6.7	13+	3	0	- 1.7	27	1	- 18	1	2	3	0	0	4.7	S	21.9	NW	1	14	9	8	4.6	81
CLAYTON	1515	845.9		25.6	9.4	17.5	2.1	32.8	14+	1.7	22	4	0			51	- 19	21	10	9	0	0						11	8	12	5.7	
RATON	1944	806.8		24.4	6.1	15.2	2.2	31.1	8	- 0.6	2	0	1			48	- 10	24	10	12	0	0						4	18	9	6.2	
ROSWELL	1103	892.5		30.6	11.1	20.9	1.7	36.7	11	4.4	3	16	0			22	- 10	15	10	10	0	0	4.4	ESE	17.9	NW	27	15	3	13	5.0	73
SILVER CITY	1638	836.2		28.9	9.4	19.3		33.3	29	5.6	2+	1	0			T		T	0	1	0	0						17	6	8	3.8	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
NEW YORK	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALBANY	84	1013.6	1017.4	20.6	6.7	13.7	-0.7	28.9	9	- 1.7	24	0	1	5.0	60	48	- 40	18	9	3	0	0	3.7	SSE	13.0	SW	8	7	14	10	6.0	60
BINGHAMTON	485	958.1	1017.2	17.8	6.1	12.0	-0.8	27.8	9	- 2.2	24	0	4	5.6	68	120	31	26	15	4	25	T	4.6	NNW	12.1	SW	19	5	13	13	6.6	65
BUFFALO	215	989.7	1018.4	17.2	5.6	11.6	-0.8	23.9	27	- 1.7	1	0	4	5.6	69	56	- 19	18	14	2	3	T	5.3	SW	14.3	SW	19	9	8	14	6.4	58
NEW YORK U	40	1006.8		22.2	10.6	16.2	-0.7	30.0	9+	3.3	1	0	0			55	- 38	16	11	4	0	0	3.8	SW#	10.7	NE	10	13	8	10	5.1	59
NEW YORK LA GUARDIA	6	1016.3	1017.9	21.1	11.1	15.9	-0.8	29.4	9+	3.9	1	0	0	7.2	59	45	- 46	12	12	5	0	0	5.3	S	13.9	E	10	10	10	11	5.6	
ROCHESTER	166	998.9	1018.3	18.3	6.1	12.4	-1.3	27.2	9	- 1.1	2+	0	4	6.1	67	59	- 11	13	14	4	25	T	5.1	WSW	17.0	SW	19	9	11	11	5.7	64
SCHENECTADY	66			20.6	7.8	14.0	-1.1	27.8	9	1.1	24	0	0			65	- 18	21	11	1	0	0						18	8	5	3.4	
SYRACUSE	127	995.5	1017.3	18.9	6.1	12.6	-1.7	26.1	27+	- 1.1	24+	0	4	5.6	65	72	- 11	25	13	3	20	T	5.4	WNW	17.9	NW	14	9	11	11	5.6	62
NORTH CAROLINA																																
ASHEVILLE U	671	940.2		23.9	11.1	17.6	-0.4	31.1	10	0.6	2	0	0			64	- 9	19	11	5	0	0	3.5	SE#	13.4	NW	15	12	9	10	5.3	65
CAPE HATTERAS R	2	1018.0	1018.7	21.7	13.3	17.4	-2.6	27.8	20+	5.6	8	0	0	13.3	78	112	11	36	11	7	0	0	5.2	NE	13.4*	WNW	20	2	10	19	7.6	66
CHARLOTTE	224	990.9	1018.8	26.7	14.4	20.4	-0.1	33.9	11	0.0	2	4	1	12.8	65	74	- 5	37	9	3	0	0	3.2	SW	11.2	N	17	9	9	13	7.0	60
GREENSBORO	272	987.2	1019.1	25.0	12.2	18.5	-0.9	32.2	9	0.0	2	1	1	11.1	68	74	- 9	18	12	6	0	0	3.4	SW	11.6	NW	1	10	10	11	5.7	56
RALEIGH	132	1004.8	1018.6	25.0	12.2	18.6	-1.2	33.3	9	- 1.7	2	3	1	11.7	68	103	13	39	11	7	0	0	3.0	SW	17.9*	WSW	21	8	10	13	6.2	64
WILMINGTON	9	1016.1	1019.0	26.1	13.9	20.1	-1.3	35.6	10	1.7	2	3	0	13.9	74	220	131	126	12	7	0	0	3.2	NE	13.4	E	11	5	12	14	6.5	61
WINSTON SALEM	295	983.7	1018.9	25.0	13.3	19.2	-0.7	33.3	9	3.3	2	1	0	9.4	57	113	11	53	11	8	0	0	3.7	WSW	10.3*	NW	1	10	9	12	5.8	
NORTH DAKOTA																																
BISMARCK	502	954.9	1015.5	19.4	6.1	12.9	-0.1	32.2	30	- 4.4	22	1	2	5.0	62	66	16	18	14	8	T	T	5.0	SE	17.4	NW	20	7	8	16	6.6	69
FARGO	274	980.4	1015.6	18.9	5.6	12.4	-0.6	31.1	7	- 6.1	22	0	2	5.0	63	66	15	36	11	7	3	T	5.5	SSE	22.4	SE	12	6	7	18	7.0	53
WILLISTON	579	947.4		18.9	5.0	12.0	-0.9	31.1	30	- 4.4	3	0	5			52	16	17	11	2	T	T	5.1	SE#	25.0	NW	1	6	8	17	6.7	48
OHIO																																
AKRON	369	980.4	1018.6	20.0	7.2	13.6	-1.0	30.0	9	- 1.1	1	0	2	6.1	63	53	- 45	17	11	3	10	25	3.9	WSW	10.3*	W	28+	7	10	14	6.2	
CINCINNATI OBS	232			22.8	10.6	16.9	-1.0	32.2	9	- 1.7	1	1	1			122	25	80	8	2	0	0	2.5	S#	7.6	W	18+					59
CINCINNATI U	169			23.9	12.2	18.0	-0.3	32.8	9	0.0	1	1	1			93		64	8	2	0	0										
CLEVELAND	237	990.6	1018.5	18.9	6.7	12.6	-1.6	30.6	9	- 3.3	2	0	3	6.1	66	25	- 64	8	12	6	3	T	4.6	N	17.9	S	28	7	14	10	6.0	69
COLUMBUS	247	988.9	1018.9	21.7	7.8	14.9	-1.8	32.2	9	- 1.1	2+	1	2	7.2	61	41	- 61	12	9	3	0	0	4.0	N	13.4	W	18+	6	14	11	6.3	69
COLUMBUS U	221			21.7	10.6	16.1	-1.1	31.1	9	- 0.6	1	0	1			45	- 43	18	8	4	0	0										
DAYTON	304	985.8	1018.5	21.1	8.9	14.9	-1.5	31.1	9	- 3.3	1	0	1	7.2	62	62	- 33	38	9	4	0	0	4.7	SSW	13.4	SW	18+	7	10	14	6.1	55
MANSFIELD	395			19.4	6.7	13.2	-1.3	30.0	9	- 2.2	1	0	3			43	- 52	21	11	3	T	25						8	11	12	6.1	
SANDUSKY U	185	996.9		20.0	9.4	14.7	-0.9	33.3	9	1.1	1	1	0			58	- 31	20	11	4	T	T	4.2	SW#	20.1	NW	1	13	11	7	4.2	78
TOLEDO	206	992.8	1018.2	20.0	6.1	12.9	-1.7	32.2	9	- 2.8	23	1	4	6.7	67	67	- 10	23	11	5	0	0	4.2	WSW	13.9	SW	8	10	8	13	5.6	64
YOUNGSTOWN	359	975.8	1018.6	19.4	5.6	12.6	-2.1	31.1	9	- 3.9	24	0	4	5.6	65	54	- 50	19	12	4	5	25	4.6	SW	12.5*	SW	8	7	9	15	6.2	
OKLAHOMA																																
OKLAHOMA CITY	390	972.1	1015.2	27.2	15.6	21.3	1.6	35.6	10	3.9	1	5	0	14.4	69	49	- 83	15	10	7	0	0	6.0	SSE	17.4	SW	4	6	10	15	6.8	66
TULSA	206	991.5	1016.0	27.2	15.6	21.6	1.7	33.9	10	3.3	1	6	0	15.6	70	63	- 70	23	12	8	0	0	5.4	S	15.2	SW	26	3	11	17	7.1	43
OREGON																																
ASTORIA	2	1017.3	1018.0	16.7	7.2	11.7	0.1	28.3	20	2.8	16+	0	0	7.8	77	49	- 33	24	9	0	0	0	4.0	NNW	11.2*	WSW	21+	7	8	16	6.7	
BURNS U	1265	872.4		20.0	5.0	12.5	0.6	27.8	29+	- 2.2	1	0	3			59	36	15	11	2	T	T						9	10	12	5.5	
EUGENE	110	1004.0		19.4	7.2	13.3	-0.1	32.8	20	2.8	12	1	0			100	46	45	8	0	0	0	3.0		11.2*	SW	20	12	5	14	5.4	
MEACHAM	1234			15.0	5.0	9.9	1.1	23.3	29+	- 1.7	1	0	3			43	- 19	11	13	0	23	T						11	3	17	5.8	
MEDFORD	396	968.7	1016.5	21.7	6.1	13.9	-0.6	33.9	20	1.1	9	1	0	7.8	71	57	19	22	9	3	0	0	2.5	WNW	14.3*	SE	20	9	7	15	6.3	
PENDLETON	452	962.3	1015.9	21.7	8.3	14.9	-0.1	30.6	21	3.9	3+	0	0	4.4	54	17	- 12	8	7	1	0	0	4.1	W	12.5*	WNW	5	12	8	11	5.0	
PORTLAND	6	1011.7	1017.4	19.4	7.8	13.7	-0.4	32.8	20	2.2	13+	1	0	6.7	66	70	19	35	8	0	0	0	3.8	NW	12.5	S	1	10	11	10	5.6	56
PORTLAND U	9			21.1	10.0	15.4	0.4	34.4	20	4.4	3	2	0			91	39	42	8		0	0										
ROSEBURG	154	998.4		21.7	6.7	14.3	0.7	34.4	20	3.3	13+	1	0			95	48	38	13	2	0	0	2.2	N#	8.0	NW	28+	11	7	13	5.9	61
SALEM	59	1010.4	1017.8	20.0	6.1	12.9	-0.9	33.3	20	1.1	10	1	0	7.8	72	94	40	47	10	0	0	0	2.9	NW	9.4*	SW	5+	12	5	14	5.7	
SEXTON SUMMIT R	1169	883.9		15.6	4.4	10.2	0.2	30.6	20	- 1.1	3+	0	8			184	129	78	13	0	25	25	5.1	N				12	5	14	5.8	
PACIFIC AREA																																
CANTON ISLAND	3	1008.4	1008.7	32.2	26.1	29.2	0.3	32.8	29+	24.4	8	17	0	23.9	76	25	- 86	6	8	0	0	0	5.9	NE	11.6*	NNE	22	8	14	9	6.1	
ENIWETOK	5	1008.7		30.6	25.6	28.0	0.0	32.8	4	22.8	31+	3	0			343	227	62	23	2	0	0	4.6									
TAGUAC GUAM R	110			29.4	23.3	26.2	-0.7	30.6	22+	21.1	22+	0	0			319	213	91	24	3	0	0	3.7	E#	11.6	E	14					83
JOHNSTON	2	1012.9		26.7	24.4	25.5	-0.7	28.3	2	21.1	3	0	0			315	290	107	17	0	0	0	6.4		19.7	E	29	0	6	25	8.8	30
KOROR R	29	1005.9	1008.7	31.1	24.4	27.8	0.4	32.8	21+	23.3	31+	8	0	25.0	87	305	- 67	92	22	5	0	0	2.6	NE	8.0	E	7	0	2	29	9.7	55
KWAJALEIN		1009.2	1010.1	30.6	25.6	28.1	0.8	32.8	21	23.3	10	2	0	25.0	83	190	- 18	35	23	1	0	0	4.1	E	13.4	E	10	3	10	18	7.3	
PONAPE R	37	1004.1	1008.6	31.1	23.3	27.2	0.3	32.8	17	22.2	30+	8	0	24.4	88	486	- 30	91	28	6	0	0	1.3	NE	7.6	SE	28+	0	7	24	8.9	48
TRUK MOEN ISLAND	2	1008.8	1009.0	30.6	23.9	27.3	0.2	31.7	26+	22.2	7	0	0	24.4	84	217	-142	84	20	3	0	0	2.3	NNE	11.2	E	7	0	6	25	9.1	31
WAKE	3	1014.2	1014.9	28.9	23.9	26.6	0.0	30.6	29+	21.7	7	0	0	22.8	80	93	41	54	15	0	0	0	7.9	ENE	12.5*	ESE	20+	2	19	10	6.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
PACIFIC AREA	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm	M.p.s.		M.p.s.							%
YAP R	16	1007.2	1008.2	30.6	24.4	27.6	-0.2	32.8	11	22.8	5+	3	0	24.4	85	181	- 60	100	16	3	0	0	3.4	NE	11.6	S	28+	0	4	27	9.3	63
PENNSYLVANIA																																
ALLENTOWN	115	1004.2	1018.5	21.7	8.3	14.8	-1.0	29.4	9	1.1	24+	0	0	6.7	62	42	- 61	15	7	4	T	T	4.6	NNW	16.5*	NW	20	10	10	11	5.4	
ERIE	223	991.8	1018.1	17.8	6.7	12.2	-1.4	28.3	8	- 1.1	2	0	3	5.6	66	51	- 39	16	12	5	3	T	5.5	WSW	14.3*	SSE	13	7	15	9	5.8	
HARRISBURG	102	1004.6	1018.5	23.3	9.4	16.4	-0.6	35.0	10	1.7	24+	2	0	7.2	57	68	- 31	22	8	2	T	T	4.1	WNW	13.0	N	10	10	11	10	5.5	71
PHILADELPHIA	2	1017.9	1018.4	22.2	8.9	15.7	-1.3	32.8	9	1.7	1	1	0	7.2	60	27	- 68	10	9	2	T	T	4.4	WSW	15.2	NW	20	8	10	13	5.8	65
PITTSBURGH	347	987.6	1018.4	20.6	6.7	13.6	-1.8	31.1	9	- 3.3	2	0	4	6.7	64	40	- 59	13	9	2	46	25	4.2	WSW	13.4*	WNW	14	7	11	13	6.4	60
PITTSBURGH U	228			22.2	10.0	16.0	-1.2	32.8	9	0.0	1	1	1			43	- 52	18	8		20	T										63
READING U	81	1005.7	1017.6	22.8	10.0	16.4	-1.0	32.2	10	2.2	1	1	0			54	- 42	21	8	4	T	T	5.1	N#	24.1	E	10	9	13	9	5.2	59
SCRANTON	287	983.8	1017.9	20.6	7.8	14.3	-0.4	31.1	9	0.0	24	0	1	5.6	59	62	- 38	24	13	3	5	T	3.9	NNW	13.9	SE	10	10	10	11	5.8	58
WILLIAMSPORT	161	999.4	1018.4	21.7	7.2	14.4	-1.3	33.9	9	- 0.6	24	1	1	6.1	62	125	21	54	14	3	T	T	3.6	WSW	13.9*	WNW	18	4	16	11	6.4	
RHODE ISLAND																																
BLOCK ISLAND	34	1012.9	1017.1	15.0	7.8	11.3	-1.2	22.2	9	2.8	12	0	0			90	14	44	8	1	0	0						8	11	12	5.6	
PROVIDENCE	17	1011.1	1017.1	20.0	7.8	13.9	-0.2	31.1	9	0.6	12	0	0	6.1	63	119	34	37	10	4	0	0	5.1	SSE	15.6*	SSW	20	10	10	11	5.3	63
SOUTH CAROLINA																																
CHARLESTON	12	1016.6	1018.6	28.3	15.6	22.0	-0.2	35.6	17+	2.2	2	7	0	16.1	74	43	- 49	14	8	7	0	0	3.8	NNE	15.6Y	SW	23	6	10	15	6.5	63
CHARLESTON U	3			26.1	18.3	22.2	-0.7	33.9	17	9.4	2	5	0			28	- 51	10	6		0	0	4.7		17.9	SE	21					
COLUMBIA	66	1005.8	1018.3	28.3	14.4	21.6	-0.7	35.6	11	1.1	2	10	0	13.3	65	73	- 17	58	6	5	0	0	3.2	ENE	10.3*	W	28	9	9	13	5.8	69
FLORENCE	45	1012.8	1018.5	27.8	13.9	20.8	-1.3	35.6	11	3.3	2	4	0	13.3	68	80	6	33	8	9	0	0	3.5	ENE	10.3*	NNE	23	9	7	15	6.0	
GNVLE SPARTANBURG	292	981.8	1018.6	26.7	14.4	20.6	-0.6	33.3	17+	3.3	2	5	0	12.8	65	78	- 4	42	9	6	0	0	3.5	NE	15.2	SW	17	9	11	11	5.8	62
SOUTH DAKOTA																																
HURON	391	967.9	1015.1	21.1	7.2	14.1	-0.4	33.3	7	- 6.1	22	1	2	8.3	74	79	19	34	9	7	0	0	5.6	SSE	21.9	W	9	7	8	16	6.4	61
RAPID CITY	965	901.3	1015.1	21.1	6.7	13.9	0.7	31.1	7	- 2.2	22	0	2	6.1	63	30	- 38	12	13	9	0	0	5.1	NNW	22.4	NW	9	10	13	8	5.5	58
SIOUX FALLS	433	963.8	1015.4	21.7	8.9	15.2	0.6	31.7	7	- 2.8	22	0	1	7.8	65	51	- 35	18	9	5	0	0	5.9	S	13.4*	SSW	7	7	12	12	6.3	
TENNESSEE																																
BRISTOL	459	963.7	1018.5	25.0	11.1	17.9	-0.6	31.1	9	- 1.1	2	0	1	11.1	68	118	30	60	11	7	T	T	2.3	WSW	13.0*	WNW	15	10	11	10	5.8	
CHATTANOOGA	204	991.3	1018.8	27.2	13.9	20.7	0.3	33.3	9	2.2	2	5	0	13.3	69	78	- 12	31	11	7	0	0	3.2	S	16.1	SW	17	10	12	9	5.6	67
KNOXVILLE	290	983.7	1019.2	25.0	12.8	18.8	-1.3	31.1	9	1.1	2	0	0	12.2	69	115	26	36	13	8	0	0	3.0	SW	10.7	SW	28	11	9	11	5.6	59
MEMPHIS	80	1003.2	1017.9	27.2	16.1	21.7	0.2	32.2	16+	4.4	1	2	0	15.6	69	96	- 12	66	8	5	0	0	3.8	S	13.0	S	4	5	14	12	6.4	82
MEMPHIS U	83			26.7	17.2	22.0	0.3	32.2	12	5.6	1	1	0			131	28	92	8		0	0										
NASHVILLE	176	998.3	1018.1	26.1	13.3	19.6	-0.7	31.7	16	1.1	2+	0	0	13.3	70	63	- 32	19	10	9	0	0	3.7	SSW	13.0	W	17	9	8	14	6.1	61
OAK RIDGE	276	985.8		26.1	11.7	18.8	-0.7	33.3	9	- 0.6	2	2	1			82	- 12	29	10	6	0	0	2.0		13.9Y		17	12	9	10	5.1	
TEXAS																																
ABILENE	536	953.4	1014.0	30.0	17.8	23.9	1.8	36.7	10	11.1	1	13	0	15.0	63	158	48	50	7	10	0	0	4.8	SSE	23.7	N	5	6	12	13	6.3	62
AMARILLO	1099	888.3	1012.7	28.3	12.8	20.6	2.2	36.7	15	5.6	22	11	0	7.8	53	93	7	27	9	7	0	0	7.2	S	24.1	W	27	10	7	14	5.9	70
AUSTIN	182	994.1	1015.9	30.6	19.4	24.9	1.0	35.0	29+	12.8	23+	15	0	17.8	68	34	- 61	15	6	7	0	0	4.2	S	15.2	NW	17	4	10	17	7.1	45
BROWNSVILLE	5	1012.7	1015.3	30.0	22.2	26.3	0.2	33.3	29	19.4	8+	6	0	21.7	79	115	55	65	6	3	0	0	6.1	SE	15.2	E	2	6	17	8	5.6	62
CORPUS CHRISTI	13	1014.7	1016.0	30.6	21.7	26.0	0.7	33.3	27	17.8	1	6	0	20.6	74	22	- 54	8	6	1	0	0	6.0	SSE	12.1	SE	27	2	11	18	7.0	49
DALLAS	147	997.9	1016.3	29.4	18.9	24.2	1.5	36.1	27	9.4	1	10	0	17.2	66	49	- 73	18	7	7	0	0	6.0	S	13.9	NE	27	5	10	16	6.8	53
DEL RIO	313			31.1	19.4	25.2		35.6	26	13.3	2+	12	0			69		37	5	5	0	0										
EL PASO	1194	885.2	1010.3	32.2	15.0	23.8	1.7	36.1	29	10.0	5	21	0	1.1	26	18	8	18	1	2	0	0	3.4	WSW	22.8	NE	18	16	10	5	3.7	89
FORT WORTH	166	995.4	1016.1	28.9	18.9	23.9	1.3	36.1	27	8.9	1	9	0	16.7	66	64	- 53	23	6	6	0	0	5.9	S	13.4*	WNW	5	5	11	15	6.6	
GALVESTON U	2			27.2	23.3	25.1	0.8	29.4	31+	16.7	23	0	0			10	- 61	8	3	0	0	0	5.1		11.6	E	1					75
GALVESTON	2	1015.2	1017.6	27.8	22.8	25.2	0.8	30.0	31+	17.2	23	0	0	20.0	73	26	- 51	13	4	5	0	0	4.6	S				2	19	10	6.4	
HOUSTON U	12			30.6	21.1	25.7	1.2	32.8	27+	15.0	23	4	0			120	8	79	4		0	0										
HOUSTON	15	1014.0	1016.8	31.1	19.4	25.3	0.3	33.9	29+	15.0	23+	14	0	20.0	76	16	- 94	14	2	6	0	0	4.2	SSE	10.3*	S	9	2	17	12	6.7	74
LAREDO	152	998.7	1014.0	33.9	21.7	27.8	0.7	39.4	27	16.7	2	24	0	18.9	63	62	- 9	57	4	1	0	0	5.5	ESE	12.5*	ESE	31	5	12	14	6.5	
LUBBOCK	988	903.1	1013.3	28.9	13.9	21.4	1.3	36.1	15+	7.8	22	11	0	11.7	61	172	92	57	11	13	0	0	7.3	ESE	20.6*	NW	27	8	10	13	6.0	
MIDLAND	870	914.7	1012.0	30.6	16.1	23.6	0.6	37.2	12+	10.0	23+	13	0	11.7	55	67	14	25	8	9	0	0	6.0	SSE	21.9*	NE	5	7	13	11	5.8	
PORT ARTHUR	5	1015.6	1017.1	30.6	18.9	24.5	0.8	33.3	30+	15.0	1	7	0	19.4	77	15	-110	7	4	4	0	0	3.8	S	14.8	SW	29	1	16	14	6.7	74
SAN ANGELO	580	946.8	1013.1	31.7	18.3	25.0	1.5	37.8	10	11.7	23	19	0	15.6	63	99	18	49	8	7	0	0	4.6	SSE	26.8*	NNE	5	7	13	11	6.2	
SAN ANTONIO	241	990.5	1015.3	31.1	20.0	25.4	1.3	36.1	27	13.3	2	14	0	18.3	69	77	- 11	65	6	4	0	0	4.1	SSE	12.5	ESE	5	3	19	9	6.5	52
VICTORIA	32	1011.6		31.1	20.6	25.7	1.2	33.9	29	15.6	1	13	0			40	- 65	30	3	2	0	0	4.5		21.0Y		18	4	17	10	6.0	
WACO	152	995.0	1016.0	30.0	18.9	24.6	1.1	34.4	27+	11.1	1	12	0	17.8	68	145	29	75	7	7	0	0	6.4	SSE	23.2*	NW	28	4	11	16	6.8	
WICHITA FALLS	303	977.4	1014.1	30.0	16.7	23.3	1.6	38.9	26	6.7	1	15	0	15.6	66	79	- 38	38	8	9	0	0	5.5	S	17.0*	N	19	8	6	17	6.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

MAY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
UTAH																																
MILFORD	1533	842.7		26.7	5.0	15.7	2.1	30.6	20	- 2.2	12	0	3			T	- 18	T	0	2	0	0						12	10	9	4.7	
SALT LAKE CITY	1286	865.8	1012.9	24.4	7.8	15.9	1.3	28.9	28+	1.7	13	0	0	2.8	44	6	- 30	5	5	1	0	0	4.2	SSE	19.2	SW	11	9	13	9	5.6	75
WENDOVER	1291	868.8		23.9	12.2	17.9	1.6	29.4	21	5.6	11	0	0			24	7	11	5	5	0	0						8	14	9	5.5	
VERMONT																																
BURLINGTON	101	1001.8	1016.5	18.3	3.9	11.3	-1.9	26.1	31	- 3.3	3	0	9	4.4	65	60	- 16	19	12	2	T	T	3.9	S	12.1	S	18	8	9	14	6.0	68
VIRGINIA																																
LYNCHBURG	289	993.3		23.3	11.7	17.7	-0.8	33.9	9	2.8	2+	1	0			47	- 34	29	11	3	0	0	2.9		11.6	N	30	8	10	13	6.2	58
NORFOLK	8	1017.8	1019.2	23.9	12.8	18.1	-1.6	35.6	10	3.9	3	2	0	11.1	66	39	- 46	17	6	3	0	0	5.0	S	13.4	SW	8	4	12	15	6.7	60
RICHMOND	49	1012.5	1018.8	24.4	11.1	17.8	-1.4	34.4	10+	1.1	3	2	0	10.0	65	61	- 34	34	10	3	0	0	3.9	SSW	12.1	N	11	6	13	12	6.1	56
ROANOKE	358	976.8	1018.8	24.4	11.7	18.0	-0.7	33.3	9	2.2	2+	1	0	7.8	56	49	- 47	31	7	1	T	T	4.2	SE	14.8*	NW	1	7	13	11	5.9	
WASHINGTON																																
OLYMPIA	58	1010.8	1018.1	19.4	3.9	11.8	-1.1	32.2	20	- 0.6	8	1	4	6.1	70	45	- 6	19	9	1	0	0	3.0	SSW	11.2*	SW	11+	9	9	13	6.1	
SEATTLE TACOMA	122	1003.4	1017.5	20.0	8.9	14.3	1.5	33.9	21	2.2	3	2	0	6.1	62	23	- 21	13	4	0	0	0	4.2	SW	14.8*	S	1	9	11	11	5.8	
SEATTLE U	4			19.4	10.0	14.8	0.7	33.3	21	4.4	3	2	0			24	- 17	15	5		0	0			26.8	S	1					69
SPOKANE	718	946.8	1015.3	19.4	5.6	12.7	-0.5	28.9	29	0.0	11+	0	3	2.8	54	25	- 6	15	5	1	T	T	3.6	SW	15.2	SW	1	11	9	11	5.0	79
STAMPEDE PASS R	1206	880.2		11.1	2.8	6.9	0.3	23.3	21	- 3.9	3	0	11			60	- 48	20	11	0	356	1600						7	7	17	6.5	
TATOOSH ISLAND	31	1015.1	1018.1	13.9	8.3	11.0	0.4	23.3	20	3.9	3+	0	0	7.2	79	85	8	33	11	1	0	0	6.1	ENE	25.0	S	5	7	10	14	6.1	63
WALLA WALLA U	289	979.2		22.2	10.0	16.1	-0.1	31.1	29+	5.6	4+	0	0			17	- 21	11	8	1	0	0	2.2	W#	7.6	W	5	12	8	11	5.1	70
YAKIMA	323	976.7	1015.5	22.8	5.6	14.3	-0.4	31.7	29	- 0.6	3	0	2	2.2	48	11	- 3	8	4	1	0	0	3.4	W	11.2*	SSW	1	13	8	10	4.7	
WEST INDIES																																
SAN JUAN P.R.	5	1013.1		29.4	22.2	25.7	-0.3	30.0	31+	20.0	2	0	0	21.7	81	174	- 7	40	23	8	0	0	3.7	ENE	11.2	E	29	0	13	18	7.3	59
SWAN ISLAND	9	1012.4		30.6	25.0	27.8	-0.2	31.7	25+	22.8	29	0	0			51	- 33	18	7	1	0	0						8	13	10	5.8	
WEST VIRGINIA																																
CHARLESTON	286	983.3	1018.7	23.3	9.4	16.3	-1.7	33.3	9	- 2.2	2	1	2	8.3	64	88	- 6	28	14	7	5	T	2.7	SW	15.6*	SW	28	7	10	14	6.3	
ELKINS	600	949.6	1019.1	21.1	6.1	13.6	-1.4	28.9	10+	- 5.0	2	0	5	6.7	69	59	- 57	17	13	5	18	T	3.5	SSE	14.8*	NNW	14	5	12	14	6.7	
HUNTINGTON	252	988.8	1018.9	23.9	11.1	17.6		33.3	9	0.0	2	1	1	9.4	64	115	19	37	11	7	T	T	3.0	N	13.0*	W	28	6	12	13	6.7	
PARKERSBURG U	187			22.8	10.0	16.4	-1.3	32.2	9	- 1.1	2	1	1			25	- 69	8	9	2	T	T	3.1		12.5	W	14					63
WISCONSIN																																
GREEN BAY	208	994.4	1017.2	19.4	5.6	12.4	0.1	28.3	8	- 2.8	1	0	3	5.6	66	39	- 39	22	12	5	T	T	4.2	SW	15.2	NE	10	5	8	18	7.1	49
LA CROSSE	199	992.0	1016.8	20.0	8.3	14.2	-0.9	29.4	7	0.0	1	0	1	6.7	64	52	- 44	21	7	4	0	0	5.0	SE	23.2*	ESE	10	5	11	15	6.7	
MADISON	262	982.0	1017.4	20.0	6.1	13.0	-0.4	28.9	8	- 2.8	1	0	3	6.7	68	46	- 39	24	9	4	T	T	4.2	S	14.8	SE	12	6	11	14	6.6	31
MILWAUKEE	205	992.8	1018.0	17.2	5.6	11.3	-0.6	28.9	8	- 4.4	1	0	2	4.4	64	50	- 31	20	13	4	T	T	5.1	NNE	15.2	N	10	8	11	12	6.0	66
WYOMING																																
CASPER	1621	836.9	1013.3	20.6	5.0	12.9	1.2	28.3	7	- 0.6	13	0	1	1.7	52	20	- 31	5	8	5	0	0	5.0	WSW	16.1*	WSW	9	8	12	11	6.2	
CHEYENNE	1867	813.6	1013.6	21.7	5.0	13.2	2.4	27.2	11	- 0.6	22+	0	2	1.1	52	29	- 35	11	6	7	T	0	5.6	WNW	17.9	NW	1	7	14	10	5.8	76
LANDER	1696	834.6	1012.9	21.1	5.0	13.1	1.4	27.2	5	- 0.6	13	0	1	1.1	49	15	- 52	6	5	5	0	0	3.5	W	21.5	SW	9	8	14	9	5.9	75
SHERIDAN	1202	884.3	1015.1	18.9	4.4	11.8	-0.2	26.7	6	- 3.3	21	0	5	4.4	61	39	- 26	14	8	4	0	0	3.3	WNW	15.2	NW	1	6	10	15	6.8	55

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1 C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.)

MAY 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	25	3005	2779
Huntsville	34	3487	3070
Mobile	3	1889	1659
Montgomery	13	2612	2291
ALASKA			
Anchorage	557	10013	10549
Annette	442	5748	6823
Barrow	1214	18360	19217
Barter Island	1172	17789	18938
Bethel	751	12342	12794
Cold Bay	745	8683	9292
Cordova	614	8689	9320
Fairbanks	482	13351	14057
Juneau	500	8029	8694
King Salmon	661	10447	10935
Kotzebue	943	14692	15469
McGrath	615	13754	14025
Nome	842	13082	13598
St. Paul Island	890	10166	10467
Shemya	781	8554	8975
Yakutat	583	8162	8657
ARIZONA			
Flagstaff	372	6638	6849
Phoenix (U)	0	1052	
Phoenix	0	1273	1598
Prescott	66	3981	4347
Tucson	0	1529	1882
Winslow	25	4445	4662
Yuma	0	690	878
ARKANSAS			
Ft. Smith	41	3430	3292
Little Rock	35	3283	3219
Texarkana	23	2654	2533
CALIFORNIA			
Bakersfield	14	2083	2122
Bishop	98	4008	4239
Blue Canyon	424	5090	5401
Burbank	83	1560	1628
Eureka (U)	336	4048	4358
Fresno	30	2482	2605
Long Beach	28	1379	1779
Los Angeles (U)	37	1186	1331
Los Angeles	63	1406	1980
Mt. Shasta (R)	291	5317	5563
Oakland	177	2760	2780
Point Arguello (R)	317	3386	3352
Red Bluff	75	2664	2515
Sacramento (U)	100	2546	2419
Sacramento	115	2842	2502
Sandberg (R)	319	4117	4152
San Diego	43	1301	1416
San Francisco (U)	234	2807	2821
San Francisco	247	3070	2889
Santa Catalina	228		
Santa Maria	245	2854	2802
Stockton	78		
COLORADO			
Alamosa	353	8091	8361
Colorado Springs	167	5574	6421
Denver	156	5678	5922
Grand Junction	32	5530	5620
Pueblo	87	5073	5447
CONNECTICUT			
Bridgeport	255	6112	5590
Hartford	222	6951	6202
Middletown	285	6909	
New Haven	272	6215	5852
DELAWARE			
Wilmington	180	5492	4924
DIST. OF COLUMBIA			
Washington (U)	84	4495	
Washington	87	4638	4224
FLORIDA			
Apalachicola (U)	1	1552	1308
Daytona Beach	0	1093	879
Fort Myers	0	428	442
Jacksonville	4	1499	1239
Key West	0	79	108
Lakeland (U)	0	797	661
Miami	0	246	214
Miami Beach	0	122	141
Orlando	0	833	782
Pensacola (U)	1	1773	1451
Tallahassee	8	1890	1485
Tampa	0	820	683
West Palm Beach	0	337	253
GEORGIA			
Athens	43	3210	2929
Atlanta	42	3397	2961
Augusta	31	2759	2397
Columbus	14	2674	2383
Macon	12	2512	2136
Rome	49	3733	3326
Savannah	21	2228	1819
Thomasville (U)	5	1825	1529
IDAHO			
Boise	164	5260	5739
Idaho Falls 46W (R)	323	7640	8283
IDAHO (Cont'd.)			
Idaho Falls 42NW (R)	353	7956	8568
Lewiston	175	5253	5452
Pocatello	261	6438	6900
ILLINOIS			
Cairo (U)	48	4163	3821
Chicago (Midway)	225	6503	6071
Chicago (O'Hare)	281	7003	
Moline	186	6888	6339
Peoria	200	6673	5992
Rockford	246	7208	6770
Springfield	126	5932	5514
INDIANA			
Evansville	112	5115	4580
Ft. Wayne	242	6753	6223
Indianapolis	185	6183	5660
South Bend	278	7020	6382
IOWA			
Burlington	157	6343	6081
Des Moines	195	6811	6506
Dubuque	256	7557	7298
Sioux City	141	6626	6962
Waterloo	206	7464	7167
KANSAS			
Concordia	99	5373	5347
Dodge City	77	4658	4977
Goodland	138	5585	6099
Topeka	91	5189	5170
Wichita	72	4528	4614
KENTUCKY			
Lexington	126	5098	4685
Louisville	109	4991	4715
LOUISIANA			
Alexandria	11	2437	
Baton Rouge	0	1753	1620
Lake Charles	0	1775	1491
New Orleans (Audubon Park)	0	1325	
New Orleans	0	1768	1475
Shreveport	11	2343	2211
MAINE			
Caribou	461	9902	9584
Greenville (U)	498	9679	
Portland	379	7721	7400
MARYLAND			
Baltimore (U)	98	4579	4111
Baltimore	153	5320	4654
Frederick	175	5766	5075
MASSACHUSETTS			
Blue Hill Obs. (R)	256	6688	6299
Boston	196	5875	5598
Nantucket	375	5993	5860
Pittsfield	372	7944	7473
Worcester	290	7275	6891
MICHIGAN			
Alpena	503	8957	7978
Detroit (City AP)	245	6762	6227
Detroit (M. Wayne Co.)	295	7113	6412
Detroit (Willow Run)	301	7073	6201
Escanaba (U)	505	8845	8322
Flint	341	7660	6935
Grand Rapids	307	7176	6819
Lansing	325	7503	6840
Marquette (U)	453	8730	8216
Muskegon	286	7110	6916
S. Ste. Marie	548	9463	9042
MINNESOTA			
Duluth	471	9692	9741
Internat. Falls	473	10190	10432
Minneapolis	319	8274	8308
Rochester	319	8240	8083
St. Cloud	343	8495	8774
MISSISSIPPI			
Jackson	8	2561	2239
Meridian	13	2773	2289
Vicksburg (U)	12	2404	2041
MISSOURI			
Columbia	101	5176	5034
Kansas City	70	4857	4859
St. Joseph	96	5526	5469
St. Louis (RFC)	78	4717	4484
St. Louis	103	5112	4803
Springfield	56	4585	4555
MONTANA			
Billings	343	6344	6957
Butte	458	8653	
Glasgow	378	7752	8846
Great Falls	381	6763	7360
Havre	345	7444	8523
Helena	358	7282	7934
Kalispell	449	7710	8423
Miles City	269	7049	7632
Missoula	350	7616	7906
NEBRASKA			
Grand Island	183	6610	6144
Lincoln (U)	115	5741	5834
Norfolk	171	6602	6931
North Platte	165	6299	6627
Omaha	120	5983	6188
Omaha N. Omaha AP	158	6372	6698
Scottsbluff	164	6187	6688
Valentine	224	6738	7341
NEVADA			
Elko	309	6817	7248
Ely	322	6923	7508
Las Vegas	7	2384	2640
Reno	237	5725	5970
Tonopah	186	5363	
Winnemucca	217	6132	6608
NEW HAMPSHIRE			
Concord	291	7532	7308
Mt. Washington Obs. (R)	966	13830	13217
NEW JERSEY			
Atlantic City	178	5147	4797
Atlantic City (U)	193	4999	
Newark	164	5379	5058
Trenton (U)	174	5452	4968
NEW MEXICO			
Albuquerque	7	4236	4303
Clayton	108	4741	5140
Raton	184	5774	6165
Roswell	22	3779	4072
Silver City	14	3593	
NEW YORK			
Albany	261	7390	6830
Binghamton	356	7650	7280
Buffalo	370	7329	7135
New York (U)	161	5256	4853
New York (LaGuardia)	169	5391	4805
Rochester	332	7198	6700
Schenectady	244	7111	
Syracuse	319	7260	6711
NORTH CAROLINA			
Asheville (U)	98	4386	4042
Cape Hatteras (R)	112	3039	2612
Charlotte	50	3661	3125
Greensboro	80	4166	3805
Raleigh	86	3875	3393
Wilmington	56	2892	2347
Winston-Salem	64	3988	3595
NORTH DAKOTA			
Bismarck	308	8113	8888
Devils Lake (U)	418	9280	9763
Fargo	339	8654	9172
Grand Forks FAA	371	8695	
Pembina	380	8995	
Williston	368	8208	8855
OHIO			
Akron	275	6758	6282
Cincinnati (U)	95	4843	
Cincinnati	202	5863	5024
Cincinnati Obs.	131	5310	4797
Cleveland	328	6789	6366
Columbus	208	6412	5417
Columbus (U)	154	5750	
Dayton	203	6216	5576
Mansfield	302	6977	6343
Sandusky (U)	227	6458	5760
Toledo	317	7175	6434
Youngstown	330	7140	6158
OKLAHOMA			
Oklahoma City	50	3702	3844
Tulsa	46	3693	3688
OREGON			
Astoria	367	4752	5013
Burns (U)	319	6441	6780
Eugene	288	4545	4591
Meacham	462	7362	7535
Medford	255	4982	4635
Pendleton	205	4937	5188
Portland (U)	204	3899	4031
Portland	272	4352	4530
Roseburg	232	4193	4368
Salem	302	4760	4536
Sexton Summit (R)	461	5851	6038
PENNSYLVANIA			
Allentown	206	6359	5786
Erie	350	6882	6391
Harrisburg	146	5712	5193
Philadelphia (U)	118	4857	
Philadelphia	175	5575	5104
Pittsburgh (U)	162	5622	5041
Pittsburgh	271	6698	5948
Reading (U)	147	5495	4945
Scranton	236	6826	6408
Williamsport	237	6621	5910
RHODE ISLAND			
Block Island	384	6137	5615
Providence	252	6150	5903
SOUTH CAROLINA			
Charleston (U)	14	2160	1794
Charleston	29	2458	2026
Columbia	41	2859	2484
Florence	51	2902	2387
Greenville-Spartanburg	53		
SOUTH DAKOTA			
Huron	258	7544	7905
Pierre	290	6898	
Rapid City	253	6609	7219
Sioux Falls	203	7239	7761
TENNESSEE			
Bristol	78	4638	4228
Chattanooga	40	3820	3382
Knoxville	64	3957	3551
Memphis (U)	34	3329	3015
Memphis	34	3477	3116
Nashville	63	4123	3578
Oak Ridge	73	4366	3769
TEXAS			
Abilene	15	2511	2624
Amarillo	61	3843	4195
Austin	4	1792	1711
Brownsville	0	690	600
Corpus Christi	0	1136	914
Dallas	11	2370	2363
Del Rio (U)	0	1447	
El Paso	0	2517	2578
Ft. Worth	13	2459	2405
Galveston (U)	0	1354	1235
Galveston	0	1435	1274
Houston (U)	0	1264	1278
Houston	0	1439	1278
Laredo	0	995	797
Lubbock	36	3402	3578
Midland	19	2527	2591
Port Arthur	0	1671	1526
San Angelo	7	2165	2218
San Antonio	3	1597	1549
Victoria	0	1378	1173
Waco	5	2093	2030
Wichita Falls	22	2800	2954
UTAH			
Milford	149	6031	6410
Salt Lake City	135	5894	5803
Wendover	78	5663	5727
VERMONT			
Burlington	385	8700	7673
VIRGINIA			
Lynchburg	107	4558	4166
Norfolk	108	3829	3421
Richmond	102	4198	3914
Roanoke	89	4583	4150
WASHINGTON			
Olympia	368	5291	5059
Seattle (U)	224	4005	4307
Seattle	223	4378	4739
Seattle-Tacoma	255	4804	5077
Spokane	318	6438	6615
Stampede Pass (R)	629	8510	8800
Tatoosh Island (R)	404	5198	5386
Walla Walla	182	4825	
Walla Walla (U)	163	4593	4760
Yakima	238	5684	5872
WEST VIRGINIA			
Charleston	148	5175	4429
Huntington	102	5082	4176
Parkersburg (U)	143	5436	4748
WISCONSIN			
Green Bay	330	8170	8100
La Crosse	250	7631	7520
Madison	299	7994	7669
Milwaukee	388	7808	7500
WYOMING			
Casper	300	6898	7281
Cheyenne	277	6806	7231
Lander	286	7262	7717
Sheridan	360	7017	7530

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

MAY 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama	1	1	0	0	4	0	0	0	4	0	0	5	0	0	0	4	0												
Alaska N																													
Arizona *																													
Arkansas										0	0	4	4																
California *																													
Colorado						0	0	4	5	0	0	3	3	1	0	4	0												
Connecticut										0	0	4	0	0	0	4	0												
Delaware *																													
Florida	2	2	0	2	5	0	0	0	C					4	0	0	0												
Georgia	1	1	0	0	4	0	0	0	4	0	0	4	0	0	0	3	0									0	0	5	3
Hawaii																										1	0	5	0
Idaho												3				3													
Illinois *																													
Indiana	2	2	0	0	4	0	0	3	3																				
Iowa	5	3	0	0	5	0	0	5	0	0	0	5	0	0	2	4	0									1	2	5	0
Kansas	5	3		3	4			6	6		19	6		1															
Kentucky										0	0	4	?	1	0	0	0									0	0	4	?
Louisiana						0	0	0	2					1	2	2	0									0	0	0	7
Maine	2	2	0	0	3					4	0	5	0	0	0	4	0	0	0	5	0								
Maryland										0	1	4	0																
Massachusetts	4	1	0	0	4					0	0	2	0	0	0	4	0											D	D
Michigan						0	0	5	4	0	1	5	4	0	0	5	0									0	0	0	FC
Minnesota						0	0	4	3																	0	0	0	5
Mississippi														1	3	0	0									0	0	?	6
Missouri	3	3	0	1	5	0	6	5	6					0	0	5	0												
Montana *																													
Nebraska	3	3	0	0	5	0	0	5	6	0	0	5	4	0	1	0	0									0	0	0	F6
Nevada *																													
New Hampshire	4	3	0	0	5									0	0	3	0	0	0	3	0								
New Jersey																										6	10	6	0
New Mexico	2	2	0	0	2	0	0	°6	C	0	0	4	3	0	1	0	0									0	0	4	0
New York *																													
North Carolina	4	2	0	4	5	0	0	4	5	0	0	5	4	1	2	5	0									0	0	5	5
North Dakota *																													
Ohio	2	1	0	0	4																								
Oklahoma	11	1	1	11	6	0	0	6	5	0	0	6	5	0	1	4	0									0	0	4	4
Oregon *																													
Pacific Area *																													
Pennsylvania										0	0	5	0	0	0	5	0												
Puerto Rico *																													
Rhode Island *																													
South Carolina	1	1	0	0	2	0	0	4	6					1	0	4	0												
South Dakota						0	0	4	?																	0	0	5	6
Tennessee						0	0	?	?	0	0	4	0													0	0	3	?
Texas	19	9	0	1	?	0	0	6	6	0	0	5	0	1	3	6	0									3	0	6	4
Utah *																													
Vermont																		0	0	3	0								
U.S. Virgin Is. *																													
Virginia *																													
Washington *																													
West Virginia *																													
Wisconsin						0	0	5	0																				
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
F Frost and freeze.
N No report received by printing deadline.
D Dust Devil and Waterspout-No Damages.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

MAY 1963

The most damaging floods during May occurred in the East Gulf of Mexico drainage. The floods in Georgia and Alabama caused over $1 million in damages. Flooding reported elsewhere in continental United States was mostly light.

ATLANTIC SLOPE DRAINAGE

The flooding on the Saluda at Pelzer, S. C., and the Broad River at Blair, S. C., in the beginning of the month was due to heavy rains near the end of April. Some flooding occurred along the Saluda River southward to Lake Greenwood. The Broad River was in flood southward to the junction of the Saluda through the 3rd. Considerable lowland flooding occurred on the Congaree below Columbia, S. C. Heavy rain from the 27th to the 29th caused additional flooding on the Saluda at Chappells, S. C. One of the heaviest storm totals noted during that period was 5.65 inches at Chappells. Dry conditions of the soil and ample reservoir storage restricted flooding.

Flooding occurred along the lower reaches of the Savannah River from early in May to the latter part of the month due to heavy rains during the last 2 days in April.

The flooding on the Ocmulgee River at Macon, Ga., and on the Oconee at Milledgeville, Ga., was due to heavy rains during the latter part of April. Additional flooding occurred along these rivers during the latter part of the month due to heavy rain on the 28-29th.

EAST GULF OF MEXICO DRAINAGE

Heavy rain (1 to 2 inches) during the night of the 26th caused flooding along creeks in the Greater Atlanta, Ga., area. The main area affected was the upper end of Peachtree Creek just north of Decatur, Ga. The heaviest damage occurred on Misty Valley Road where many homes were surrounded by water 1 to 3 feet or more deep. Some homes were subjected to muddy creek water rising 6 to 8 inches above floor levels. A few bridges in the area were damaged and rendered impassable.

The flooding on the Apalachicola River at Blountstown, Fla., from the 4th to the 7th was due to heavy rains during the last 3 days of April.

This same storm caused light to fairly heavy flooding on the Oostanaula and upper Etowah in Georgia and on the upper and middle Coosa and upper Cahaba Rivers in Alabama during the last day of April and the beginning of May. The heaviest 24-hour amount of rainfall reported was 8.34 inches at Jackson Shoals, Ala. The greatest 3-day total was 9.55 inches at Collinsville, Ala.

Minor flooding occurred on the Tombigbee River at Fulton, Miss., from the 28th to the 29th due to moderate rains. No damage was reported.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Heavy rains through central Illinois from the night of the 15th to the 17th caused the Kaskaskia to rise above flood, starting at Vandalia on the 17th and continuing until the 24th at Carlyle. Rainfall totals around the Carlyle area were in excess of 3 to 4 inches.

Heavy rains from the 24th to the 28th caused the Meramec River to go out of its banks on the 27th at Steelville, Sullivan, and Pacific, Mo. The flooding continued until the 30th at Pacific. No damage was reported.

Missouri Basin.--Moderate to heavy rain during the period from the 14th to the 17th caused minor flooding on the Platte, Grand, and Crooked Rivers in Missouri and on Lincoln Creek at Seward, Nebr. The heaviest rain occurred during the night of the 14-15th when 1 inch or more fell over most of the district. Three inches or more fell in a band from the lower Nemaha Basin eastward across St. Joseph, Mo., to the upper basins of the Crooked River and Shoal Creek, a tributary of the Grand River.

Rainfall from the 24th to the 28th caused streams through southern and eastern Missouri to approach or exceed flood stage at many points. The South Grand overflowed at Brownington, Mo., from the 26th to the 30th, and the Gasconade at Jerome, Mo., from the 27th to the 29th. No flood damage was reported from any of the flooded areas.

Ohio Basin.--Locally heavy rain (2 to 3 inches) occurred in Paint Creek Area near Paintsville, Ky., on the 28th. Only slight overflow occurred in low places along the Creek.

Minor overflow occurred along parts of the Little Wabash and Skillet Fork in Illinois due to 1 to 2 inch rains on the 16th and 17th. No damages were reported.

White Basin.--The Black River exceeded flood stage at Black Rock, Ark., on the 26th and continued in flood into June. It crested on the 28th, 5.3 ft. above flood stage. The Cache River at Patterson, Ark., went out of its banks on the 29th. All damage was confined to crops along the rivers.

Red Basin.--Minor flooding occurred on the Sulphur River at Naples, Tex., on the 5th and 6th due to heavy rains (2.7 inches) from April 27-29. No damage was reported.

Lower Mississippi Basin.--The flooding on the St. Francis River at Fisk, Mo., from May 28 to June 3 was due to heavy rainfall on May 25-27. The rainfall averaged 2.5 inches above Wappapello Dam and 5 inches or more just below the Dam. Prior to the rain the ground was relatively dry and much of the rain was absorbed. The minor flood was confined inside the levees in the Fisk area and damage was negligible.

WEST GULF OF MEXICO DRAINAGE

The flooding in the upper Sabine in Texas which began on April 28 at Mineola and continued until May 12 at Gladewater, Tex., was due to heavy rains from April 27-29. Mineola reported 6.95 inches during a short period on the evening of the 27th. Minor damage occurred to oil wells that were flooded. The use of pasture land was lost during the overflow.

The Trinity River was in flood in the lower portion at the end of April and continued in flood at Trinidad, Tex., until the 7th. The overflow was generally 4 to 5 feet and all within levees. This flooding was due to heavy rains during the latter part of April. No significant damage was reported and no lives were lost due to flooding.

Very heavy rains occurred over a small area in the upper Nueces River during the night and early morning of the 5th and 6th. This resulted in a sharp rise above Crystal City, Tex., and in considerable flooding in the Cedar Creek area. The area flooded was mainly ranch- and farmlands with primary damage to fences and roads in low areas. Some livestock were drowned and a few buildings were flooded. Several roads were under water for several hours. During the same period rains up to 5

inches fell over the upper Leona, upper Frio, and upper Sabinal Rivers, with minor flooding and little damage.

PACIFIC SLOPE DRAINAGE

Coquille Basin.--Heavy rains from the 5th to the 7th caused the lower Coquille River to overflow its banks at Myrtle Point, Oreg., the 6th to the 8th, and at Coquille, Oreg., on the 8th. The rainfall during that period averaged from 3 to 4 inches. The heaviest amount reported was at Brookings, Oreg., where 11.51 inches occurred during that period. Over 8 inches occurred in one 24-hour period. Little if any direct damage resulted from the flood.

Columbia Basin.--Weather conditions during May brought a "winter type" rise to the Willamette Basin during the first half of the month and the snowmelt peak of the year to the lower Snake River Basin during the last half of the month. The Willamette at Salem, Oreg., reached a peak flow of near 111,000 c.f.s. on the 8th, which was the highest in at least 28 years of record for so late in the rainfall-runoff season. At Harrisburg, Oreg., the Willamette exceeded flood stage by 0.2 foot on the 7th. Minor flooding occurred on the Santiam River at Jefferson, Oreg., on the 7th. The Pudding River at Aurora, Oreg., was out of its banks from the 7th to the 10th, cresting on the 8th, 2.8 ft. above flood stage. Damages were primarily due to inundation of lowlands, deposition of debris, loss of early pasture, erosion of banks, loss of water pumps, and loss of mint crops in the Santiam lowlands. Stages were well below flood stage east of the Cascades and no damages were reported.

FLOOD STAGE DATA

(All dates in May unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Ft.*			*Ft.*	
Saluda: Pelzer, S. C.	6	Apr. 30	2	9.5	2
Chappells, S. C.	13	29	29	15.1	29
Broad: Blair, S. C.	14	1	2	16.1	1
Savannah: Millhaven, Ga.	15	8	17	15.8	14
Clyo, Ga.	11	■	26	13.7	16
Ocmulgee: Macon, Ga.	18	1 28	3 28	19.75 18.0	2 28
Abbeville, Ga.	12	8	10	12.85	9
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	4	7	16.9	6
Oostanaula: Resaca, Ga.	22	Apr. 30	4	27.2	2
Rome, Ga.	25	Apr. 30	1	26.4	Apr. 30
Etowah: Canton, Ga.	17	Apr. 30	1	24.4	Apr. 30
Coosa: Gadsden, Ala.	20	Apr. 30	8	25.85	1
Childersburg, Ala.	20	1	1	21.55	1
Cahaba: Centreville, Ala.	23	Apr. 30	1	24.7	Apr. 30
Tombigbee: Fulton, Miss.	16	28	30	17.2	28
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Skunk: Ames, Iowa	10	12	12	10.3	12
Oskaloosa, Iowa	15	13	15	16.0	14
Raccoon: Jefferson, Iowa	10	13	14	12.35	14
Des Moines: Eddyville, Iowa	15	1	1	15.15	1
Meramec: Steelville, Mo.	12	27	27	13.0	27
Sullivan, Mo.	11	27	28	12.7	28
Pacific, Mo.	11	27	30	14.5	29
Kaskaskia: Vandalia, Ill.	18	17	18	19.3	17
Carlyle, Ill.	21	20	24	23.4	22
Missouri Basin					
Platte: Agency, Mo.	20	16	16	20.6	16
Lincoln Creek: Seward, Nebr.	15	15	16	16.1	15
Grand: Chillicothe, Mo.	24	16	16	24.5	16
Sumner, Mo.	26	16	19	29.65	17

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	*Ft.*			*Ft.*	
Missouri Basin (Cont'd.)					
Crooked: Richmond, Mo.	20	16	16	21.5	16
South Grand: Brownington, Mo.	19	26	30	22.5	27
Gasconade: Jerome, Mo.	15	27	29	(15.6 (15.5	27 29
Ohio Basin					
Skillet Fork: Wayne City, Ill.	15	17	19	17.3	18
Little Wabash: Wilcox (nr), Ill.	16	17	24	20.5	19
White Basin					
Black: Black Rock, Ark.	14	26	1/	19.3	28
Cache: Patterson, Ark.	7	29			
Red Basin					
Sulphur: Naples, Texas	22	5	6	22.6	5
Lower Mississippi Basin					
St. Francis: Fisk, Mo.	20	28	Jun. 3	22.0	30
WEST GULF OF MEXICO DRAINAGE					
Sabine: Mineola, Texas	14	Apr. 28	4	17.4	1
Gladewater, Texas	26	Apr. 29	12	31.35	7
Trinity: Rosser, Texas	26	Apr. 29	3	30.3	1
Trinidad, Texas	28	Apr. 29	7	33.1	4
PACIFIC SLOPE DRAINAGE					
Coquille Basin					
Coquille: Myrtle Point, Oreg.	35	6	8	39.05	7
Coquille, Oreg.	21	8	8	21.05	8
Columbia Basin					
Santiam: Jefferson, Oreg.	15	7	7	15.1	7
Pudding: Aurora, Oreg.	20	7	10	22.8	8
Willamette: Harrisburg, Oreg.	12	7	7	12.2	7

* Provisional
1/ Continued at end of month

RAWINSONDE DATA

Average monthly values

MAY 1963

ALBANY, N. Y. 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	9.4	78	256	1.4
1000	31	149	9.3	74	254	1.7
950	31	574	8.8	63	292	5.8
900	31	1,021	6.8	61	298	8.9
850	31	1,489	4.3	60	289	10.5
800	31	1,980	1.8	57	284	11.9
750	31	2,497	-.6	51	275	16.5
700	31	3,048	-3.1	43	273	19.2
650	31	3,628	-6.4	40	275	21.4
600	31	4,254	-9.8		279	23.7
550	31	4,914	-13.7		276	26.8
500	31	5,640	-18.4		272	29.0
450	31	6,415	-23.9		268	32.3
400	31	7,268	-30.0		268	34.2
350	31	8,206	-36.9		266	36.5
300	31	9,256	-44.3		268	40.6
250	31	10,457	-51.9		269	43.1
200	31	11,887	-55.8		274	44.5
175	31	12,736	-56.1		273	40.2
150	31	13,717	-55.1		268	36.5
125	31	14,880	-55.5		270	27.8
100	31	16,299	-56.7		270	22.0
80	31	17,718	-55.6		274	13.8
70	31	18,573	-55.5		273	10.5
60	30	19,550	-55.1		277	7.8
50	30	20,717	-54.3		272	5.8
40	30	22,150	-53.3		279	3.7
30	28	24,007	-51.4		326	2.1
25	28	25,196	-49.6		355	2.3
20	25	26,665	-47.1		291	3.1
15	11	28,616	-43.2			
10						
7						
5						

ALBUQUERQUE, N. MEX. 839 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	12.6	42	100	3.7
1000	31	110				
950	31	549				
900	31	1,016				
850	31	1,507				
800	31	2,019	14.2	32	242	2.7
750	31	2,559	11.2	30	267	8.0
700	31	3,134	7.5	29	268	12.4
650	31	3,730	2.7	33	265	15.0
600	31	4,380	-2.6	38	256	17.3
550	31	5,054	-7.9	41	247	22.3
500	31	5,798	-13.3	38	247	27.8
450	31	6,584	-18.6		251	29.5
400	31	7,461	-24.8		254	31.7
350	31	8,418	-32.0		254	34.4
300	31	9,488	-40.4		258	39.8
250	31	10,705	-49.6		261	45.9
200	31	12,135	-58.3		262	48.4
175	31	12,969	-60.6		260	44.1
150	31	13,928	-60.9		260	40.4
125	31	15,059	-61.7		262	33.8
100	31	16,436	-63.5		259	23.9
80	30	17,803	-64.3		255	12.2
70	30	18,622	-62.8		253	6.2
60	30	19,578	-60.0		215	2.1
50	30	20,725	-57.1		118	2.3
40	28	22,141	-54.3		90	3.3
30	28	24,000	-51.0		74	8.4
25	27	25,191	-49.2		82	7.4
20	26	26,668	-46.6		81	6.2
15	20	28,582	-43.3		44	4.7
10						
7						
5						

AMARILLO, TEXAS 892 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	13.7	73	198	5.1
1000	31	124				
950	31	563				
900	31	1,028				
850	31	1,508	15.8	57	219	13.0
800	31	2,023	14.5	48	228	15.3
750	31	2,564	11.4	47	244	13.8
700	31	3,138	7.4	44	250	14.8
650	31	3,740	2.8	45	256	15.9
600	31	4,387	-2.2	46	260	15.2
550	31	5,062	-7.6	45	265	17.7
500	31	5,807	-13.0	43	264	19.4
450	31	6,596	-18.3	38	268	22.9
400	31	7,473	-24.4		265	28.6
350	31	8,429	-31.6		267	33.8
300	31	9,502	-39.9		266	36.3
250	31	10,721	-49.7		262	40.6
200	31	12,148	-58.8		263	45.1
175	31	12,979	-61.8		265	46.6
150	31	13,933	-61.3		267	42.2
125	31	15,067	-61.1		266	38.1
100	31	16,445	-63.3		267	32.6
80	30	17,814	-64.5		260	22.9
70	29	18,645	-62.9		253	12.6
60	29	19,592	-59.9		245	2.3
50	29	20,739	-57.4		100	3.3
40	29	22,164	-53.4		93	3.5
30	28	24,028	-50.9		68	3.3
25	25	25,221	-48.6		60	2.5
20	23	26,694	-46.2		78	2.1
15	15	28,619	-42.6		140	1.0
10						
7						
5						

ANCHORAGE, ALASKA 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	5.8	70	178	3.3
1000	31	114	6.5	64	169	4.1
950	31	535	5.5	55	157	4.1
900	31	974	2.5	59	126	4.7
850	31	1,434	-.7	62	118	5.8
800	31	1,915	-4.0	64	117	7.8
750	31	2,419	-6.9	61	128	10.1
700	31	2,958	-9.6	56	125	8.5
650	31	3,521	-12.8	47	123	7.0
600	31	4,134	-16.3	45	115	7.2
550	31	4,776	-20.2	43	110	7.0
500	31	5,484	-24.6	41	102	7.0
450	31	6,234	-29.6	41	98	8.7
400	31	7,073	-35.6		98	9.7
350	31	7,989	-42.1		112	11.3
300	31	9,017	-48.4		106	13.8
250	31	10,203	-53.0		98	8.4
200	31	11,643	-51.8		139	3.7
175	31	12,511	-50.6		129	2.5
150	31	13,516	-50.4		220	2.5
125	31	14,704	-50.8		216	3.5
100	31	16,157	-51.0		224	2.5
80	31	17,609	-50.9		274	1.4
70	31	18,479	-50.8		279	1.0
60	31	19,481	-50.8			.0
50	31	20,668	-50.7		57	2.3
40	31	22,123	-50.4		81	2.5
30	30	23,996	-49.7		60	3.3
25	30	25,191	-48.7		72	3.5
20	30	26,662	-47.4		83	4.1
15	28	28,581	-45.4		72	6.8
10	21	31,304	-41.2		71	9.3
7	7	33,671	-37.7			
5						

ANNETTE, ALASKA * 1/ 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	7.5	83	120	3.3
1000	31	138	8.1	75	132	3.9
950	31	556	6.3	66	138	6.4
900	31	1,002	3.3	68	150	8.7
850	31	1,463	.2	71	165	10.7
800	31	1,947	-3.1	67	170	12.2
750	31	2,451	-6.2	65	169	13.0
700	31	2,993	-9.7	62	176	11.7
650	31	3,556	-13.3	55	182	11.1
600	31	4,167	-16.9	52	186	11.3
550	31	4,812	-21.0	47	191	9.5
500	31	5,508	-25.8	44	207	10.3
450	31	6,264	-31.0	47	216	10.5
400	31	7,097	-37.1	44	218	13.4
350	31	8,008	-43.4		225	14.2
300	31	9,032	-49.2		232	14.8
250	31	10,217	-52.6		238	15.9
200	31	11,657	-52.2		236	13.2
175	30	12,524	-51.5		233	9.7
150	29	13,526	-51.0		243	7.4
125	28	14,712	-51.3		255	6.0
100	28	16,161	-51.7		253	6.8
80	28	17,607	-52.1		258	7.6
70	28	18,468	-52.0		259	6.2
60	28	19,470	-51.8		258	5.4
50	28	20,653	-51.7		258	6.0
40	27	22,100	-51.2		253	6.4
30	27	23,971	-50.9		261	4.9
25	26	25,158	-50.2		268	4.1
20	24	26,620	-49.2		310	4.3
15	24	28,515	-47.3		336	2.1
10	24	31,222	-42.5		37	3.7
7	22	33,666	-37.2		46	6.6
5	19	36,011	-31.4			

ATHENS, GA. 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	15.8	89	341	1.9
1000	31	171				
950	31	613	17.6	67	331	2.9
900	31	1,072	15.3	63	293	4.3
850	31	1,556	12.6	62	269	8.0
800	31	2,063	9.7	59	264	10.7
750	31	2,599	6.5	53	273	12.4
700	31	3,159	3.4	48	279	14.2
650	31	3,761	.3	44	278	15.3
600	31	4,395	-3.6	45	280	16.7
550	31	5,076	-7.9	43	277	18.5
500	31	5,813	-12.5	39	282	20.0
450	31	6,610	-17.6	38	279	21.2
400	31	7,483	-23.8	35	278	24.9
350	31	8,444	-31.2	33	281	26.6
300	31	9,518	-39.4		285	30.9
250	31	10,740	-49.2		288	36.9
200	31	12,169	-59.2		288	38.9
175	31	13,000	-62.4		289	35.8
150	31	13,952	-61.8		283	34.6
125	31	15,081	-62.2		296	24.9
100	31	16,456	-63.5		286	22.2
80	31	17,828	-63.1		293	15.2
70	31	18,659	-61.8		304	7.8
60	31	19,612	-59.5		9	4.3
50	31	20,762	-56.7		65	5.1
40	29	22,182	-54.6		64	6.8
30	28	24,040	-51.1		79	7.2
25	26	25,234	-48.9		87	9.7
20	22	26,705	-46.6		70	9.9
15	15	28,634	-43.2		63	12.6
10						
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4						

BARROW, ALASKA 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-4.4	90	104	3.5
1000	31	135	-3.9	83	103	3.7
950	31	542	-3.8	73	112	3.3
900	31	969	-2.9	67	195	2.1
850	31	1,422	-4.1	61	219	4.1
800	31	1,899	-6.1	55	250	3.9
750	31	2,405	-8.5	52	248	4.7
700	31	2,935	-11.2	48	248	4.7
650	31	3,501	-14.2	43	241	5.2
600	31	4,105	-17.7	39	253	5.8
550	31	4,749	-21.4	42	259	5.8
500	31	5,450	-25.6	38	264	8.5
450	31	6,201	-30.9	38	268	9.7
400	31	7,033	-36.9	39	278	11.9
350	31	7,945	-43.4		281	16.1
300	31	8,967	-49.9		269	18.1
250	31	10,146	-53.7		266	18.8
200	31	11,587	-51.1		276	13.8
175	31	12,459	-49.3		273	10.9
150	31	13,470	-49.3		261	9.7
125	31	14,666	-49.3		262	8.4
100	31	16,130	-49.3		264	6.0
80	30	17,596	-49.1		281	2.3
70	30	18,478	-49.0		298	.8
60	30	19,484	-48.8		11	.6
50	29	20,680	-48.6		27	1.6
40	29	22,147	-48.4		50	3.3
30	29	24,043	-47.9		61	6.2
25	28	25,254	-47.1		63	6.8
20	27	26,729	-46.0		65	6.8
15	27	28,651	-43.9		71	9.3
10	26	31,404	-38.3		85	12.6
7	25	33,906	-33.1		85	14.6
5	20	36,238	-28.0			
4	5	38,195	-22.6			

BARTER IS., ALASKA 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	-3.8	88	115	1.2
1000	31	137	-3.4	86	150	.6
950	31	542	-4.3	81	264	1.9
900	31	970	-2.3	72	266	6.4
850	31	1,423	-3.7	64	274	8.0
800	31	1,900	-6.0	61	275	9.1
750	31	2,403	-8.6	58	272	8.7
700	31	2,936	-11.2	53	279	8.5
650	31	3,494	-14.4	46	283	9.9
600	31	4,104	-17.9	44	294	10.5
550	31	4,745	-21.7	40	292	11.9
500	31	5,446	-26.0	37	296	14.2
450	31	6,192	-31.0	38	284	14.8
400	31	7,026	-37.1		284	17.3
350	31	7,938	-43.2		284	20.6
300	31	8,961	-49.7		279	20.6
250	31	10,140	-53.7		280	19.6
200	30	11,583	-52.0		279	15.7
175	30	12,452	-50.0		281	12.6
150	30	13,461	-49.6		283	11.1
125	30	14,654	-49.8		282	9.3
100	30	16,112	-49.9		295	7.0
80	30	17,572	-49.4		304	4.9
70	30	18,449	-49.2		332	3.7
60	29	19,454	-49.1		360	2.9
50	28	20,646	-49.0		357	3.3
40	28	22,112	-48.8		21	4.1
30	26	24,002	-48.1		41	5.1
25	26	25,206	-47.3		44	6.6
20	24	26,683	-46.1		59	7.6
15	21	28,605	-43.8		72	7.4
10	13	31,330	-39.6			
7						
5						
4						

BETHEL, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	2.1	91	231	3.1
1000	31	98			208	2.9
950	31	515	3.1	69	183	7.2
900	31	951	.8	67	185	7.8
850	31	1,408	-1.6	62	179	8.2
800	31	1,889	-4.3	61	171	8.0
750	31	2,392	-7.1	63	173	8.4
700	31	2,931	-10.2	60	171	9.1
650	31	3,495	-13.6	59	171	8.0
600	31	4,103	-17.0	51	169	8.0
550	31	4,748	-20.5	48	164	8.2
500	31	5,452	-24.9	47	179	8.2
450	31	6,204	-29.8	45	196	10.3
400	31	7,041	-35.3	43	208	10.7
350	31	7,959	-41.4		226	9.3
300	31	8,991	-47.4		243	9.9
250	31	10,185	-51.0		257	11.3
200	30	11,641	-51.7		253	12.2
175	30	12,509	-50.6		265	9.1
150	29	13,520	-50.6		259	6.4
125	29	14,706	-51.2		253	4.9
100	29	16,157	-50.9		244	4.1
80	28	17,605	-50.9		231	2.9
70	28	18,474	-50.6		236	2.9
60	27	19,484	-50.8		239	1.9
50	27	20,672	-50.6		198	.8
40	26	22,125	-50.9		56	1.6
30	26	23,996	-50.9		71	3.9
25	26	25,184	-50.1		97	4.7
20	25	26,654	-48.6		88	3.1
15	20	28,590	-45.4		94	5.1
10	11	31,348	-40.5			
7						
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4						

BISMARCK, N. DAK. 956 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	7.0	83	95	1.2
1000	31	129				
950	31	559			64	1.4
900	31	1,003	8.8	62	287	1.9
850	31	1,475	6.8	62	293	6.2
800	31	1,971	4.0	64	291	10.1
750	31	2,490	.9	61	292	13.4
700	31	3,045	-2.3	57	292	16.3
650	31	3,623	-5.7	51	287	20.4
600	31	4,253	-9.5	43	280	26.4
550	31	4,912	-14.0	40	279	29.0
500	31	5,637	-18.9	39	278	31.7
450	31	6,403	-24.6	34	278	34.4
400	31	7,261	-30.7	32	275	38.9
350	31	8,195	-37.8		275	42.9
300	31	9,240	-45.3		273	45.7
250	31	10,436	-52.3		273	51.3
200	31	11,863	-55.9		272	50.1
175	31	12,714	-55.0		275	44.5
150	31	13,701	-54.0		273	35.8
125	31	14,870	-54.3		277	31.7
100	31	16,299	-55.0		281	24.3
80	31	17,723	-55.1		289	15.0
70	31	18,578	-54.5		289	13.0
60	31	19,564	-54.1		291	8.7
50	31	20,736	-53.6		304	5.2
40	31	22,174	-52.4		315	2.9
30	31	24,037	-51.3		339	1.4
25	28	25,228	-49.9		337	1.4
20	27	26,696	-47.9		330	3.3
15	23	28,610	-44.6		301	3.7
10	11	31,330	-40.3			
7						
5						
4						

BOISE, IDAHO 915 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	10.7	69	151	2.7
1000	31	115				
950	31	552				
900	31	1,005	12.2	58	162	1.9
850	31	1,484	11.2	50	264	1.9
800	31	1,988	8.1	50	277	4.3
750	31	2,515	4.2	53	276	6.4
700	31	3,075	.1	56	259	9.1
650	31	3,665	-4.1	55	256	12.8
600	31	4,292	-8.6	55	246	15.9
550	31	4,957	-13.2	53	241	18.7
500	31	5,680	-18.2	50	242	21.4
450	31	6,455	-23.8	49	244	25.5
400	31	7,310	-30.0	46	244	28.4
350	31	8,247	-37.2		242	29.3
300	31	9,295	-45.4		248	31.5
250	31	10,490	-53.5		253	32.6
200	31	11,903	-59.4		258	27.8
175	31	12,740	-58.4		255	28.8
150	31	13,713	-56.9		259	24.9
125	31	14,870	-56.5		255	20.6
100	31	16,284	-57.2		257	18.5
80	31	17,694	-57.7		256	12.6
70	31	18,540	-57.4		264	8.7
60	31	19,512	-57.4		280	5.4
50	30	20,666	-56.1		289	2.1
40	29	22,094	-54.4		20	2.7
30	26	23,950	-52.8		28	2.7
25	25	25,135	-51.2		17	3.1
20	20	26,587	-49.4		38	5.6
15	14	28,484	-45.8			
10						
7						
5						

BROWNSVILLE, TEXAS 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	22.9	94	139	6.0
1000	31	130	22.9	89	145	12.4
950	31	575	20.6	84	155	22.0
900	31	1,045	19.1	69	160	20.8
850	31	1,535	16.5	61	165	14.6
800	31	2,049	14.2	53	163	9.5
750	31	2,588	11.9	44	162	5.1
700	31	3,167	9.0	42	167	.8
650	31	3,767	5.4	41	23	1.9
600	31	4,427	.9	41	8	3.7
550	31	5,110	-3.6	37	315	8.2
500	31	5,867	-8.6	37	297	11.3
450	31	6,666	-14.0	34	295	14.0
400	31	7,561	-20.5	35	291	16.5
350	31	8,536	-27.3	32	287	19.6
300	31	9,628	-35.8		285	26.4
250	31	10,869	-45.8		290	36.3
200	31	12,317	-56.6		286	44.9
175	31	13,154	-61.4		284	47.6
150	31	14,101	-65.0		285	42.6
125	31	15,206	-67.6		281	30.3
100	30	16,539	-70.6		282	11.3
80	30	17,858	-71.0		68	4.5
70	30	18,659	-68.2		89	11.1
60	28	19,593	-62.7		94	15.3
50	27	20,729	-58.2		96	14.8
40	26	22,154	-54.6		89	16.7
30	26	24,011	-50.9		91	19.8
25	26	25,203	-48.7		94	23.1
20	26	26,680	-45.4		93	20.8
15	24	28,615	-41.1		89	24.7
10	23	31,394	-36.7		94	25.3
7	22	33,884	-32.7		94	24.1
5	12	36,305	-26.6			

BUFFALO, N. Y. 993 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	218	7.8	81	225	4.5
1000	31	156				
950	31	580	8.9	71	271	10.1
900	31	1,027	6.6	68	274	11.3
850	31	1,495	4.2	69	275	13.2
800	31	1,987	2.0	62	279	16.5
750	31	2,507	-.2	53	281	19.4
700	31	3,056	-2.4	44	282	22.3
650	31	3,639	-5.4		280	25.1
600	31	4,266	-9.0	36	282	30.1
550	31	4,931	-13.5	37	283	30.9
500	31	5,653	-18.4		284	34.0
450	31	6,425	-23.8		283	36.7
400	31	7,281	-30.2		284	39.1
350	31	8,218	-37.1		289	41.0
300	31	9,267	-44.6		284	45.5
250	31	10,466	-51.8		282	51.1
200	30	11,894	-55.1		280	51.7
175	30	12,747	-55.2		280	46.2
150	30	13,732	-55.0		279	37.5
125	30	14,897	-54.8		277	26.8
100	30	16,320	-55.6		274	22.9
80	30	17,742	-55.8		276	14.6
70	30	18,599	-55.6		280	8.7
60	30	19,577	-54.8		284	6.8
50	29	20,750	-53.8		284	4.7
40	27	22,186	-52.6		278	2.7
30	27	24,054	-50.3		294	1.7
25	27	25,249	-48.7		292	3.1
20	24	26,721	-46.8		328	2.3
15	19	28,651	-44.1		18	1.9
10	[illegible]	31,430	-37.6			
7						
5						

BURRWOOD, LA. 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	22.9	85	203	1.2
1000	31	156	22.8	77	195	1.4
950	31	602	19.6	77	184	3.3
900	31	1,067	16.9	67	165	4.1
850	31	1,553	14.5	60	162	4.1
800	31	2,063	11.9	51	170	3.9
750	31	2,600	9.1	47	221	3.7
700	31	3,169	5.9	38	275	2.5
650	31	3,769	2.5	35	313	5.4
600	31	4,415	-1.4	35	320	8.0
550	31	5,096	-5.5	35	312	8.5
500	31	5,845	-9.9	32	299	11.5
450	31	6,645	-15.4	32	298	14.2
400	31	7,528	-21.3		298	17.7
350	31	8,499	-28.4		295	20.8
300	31	9,584	-37.1		297	25.6
250	31	10,816	-47.1		300	29.9
200	30	12,258	-57.5		302	37.5
175	30	13,093	-61.5		302	40.2
150	30	14,043	-63.0		296	37.5
125	30	15,162	-64.6		296	30.3
100	30	16,515	-67.4		305	19.2
80	30	17,856	-67.4		333	10.1
70	30	18,676	-65.2		16	7.8
60	30	19,613	-60.7		63	7.0
50	30	20,757	-57.0		74	10.7
40	30	22,181	-53.3		81	12.8
30	30	24,049	-49.3		88	13.2
25	29	25,249	-47.1		90	14.0
20	29	26,734	-44.3		91	14.4
15	27	28,680	-40.4		80	18.3
10	26	31,472	-35.2		92	18.7
7	20	33,965	-33.1		90	15.3
5	5	36,405	-24.4			

CANTON IS., PACIFIC AREA 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	27.3	81	44	10.9
1000	31	85	26.7	81	52	11.3
950	31	535	23.4	83	83	16.3
900	31	1,009	20.7	77	91	17.7
850	31	1,503	18.1	71	92	17.7
800	31	2,021	15.9	55	90	18.7
750	31	2,564	13.2	46	84	16.7
700	31	3,144	10.3	39	90	15.0
650	31	3,753	6.8	34	90	13.4
600	31	4,411	3.1	33	90	12.6
550	31	5,106	-1.2	29	78	10.7
500	31	5,865	-5.6		70	11.7
450	31	6,679	-10.2		90	9.7
400	31	7,585	-15.6		128	6.4
350	31	8,579	-22.4		182	5.6
300	31	9,692	-30.8		225	9.5
250	31	10,959	-41.1		248	11.1
200	31	12,436	-53.4		258	15.2
175	31	13,282	-60.3		258	18.5
150	31	14,225	-68.0		259	22.2
125	31	15,299	-75.5		263	23.5
100	31	16,569	-81.7		270	20.2
80	29	17,823	-78.3		259	8.0
70	29	18,594	-73.2		107	5.4
60	29	19,505	-68.7		92	22.5
50	28	20,611	-64.1		90	39.4
40	27	21,996	-58.0		91	51.5
30	25	23,834	-52.5		90	62.2
25	25	25,021	-48.9		90	61.8
20	24	26,503	-43.7		82	27.8
15	23	28,449	-40.7		271	9.1
10	20	31,217	-39.2		271	18.5
7	19	33,679	-35.8		258	17.1
5	17	36,026	-32.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1963

Standard pressure surface (mb)	CAPE HATTERAS, N. C. 1018 MB						CARIBOU, ME. 993 MB						CHARLESTON, S. C. 1017 MB						COLD BAY, ALASKA * 2/ 1010 MB						COLUMBIA, MO. 989 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	4	15.8	86	22	3.3	31	191	6.0	77	246	1.4	31	13	17.0	91	356	1.6	31	30	3.2	90	170	1.7	31	238	12.9	90	172	2.1
1000	31	153	16.8	75	356	3.7	31	134					31	159	18.7	81	345	1.4	31	109			248	3.1	31	142				
950	31	586	14.9	71	323	4.1	31	555	6.4	61	268	6.2	31	601	18.2	68	292	2.7	31	522	1.0	79	261	1.4	31	574	14.4	71	223	6.2
900	31	1,047	13.0	64	310	5.6	31	998	4.7	57	265	8.5	31	1,063	15.9	66	274	5.8	31	957	- .8	73	289	1.0	31	1,034	13.1	64	254	11.7
850	31	1,525	10.4	61	301	7.8	31	1,462	1.9	58	264	10.3	31	1,547	13.3	63	278	7.4	31	1,412	- 2.5	71	257	1.6	31	1,513	10.7	60	273	13.0
800	31	2,028	7.8	62	303	11.5	31	1,949	- .6	57	276	13.0	31	2,055	10.4	59	287	8.4	31	1,892	- 4.2	66	329	5.1	31	2,016	8.0	57	284	13.4
750	31	2,556	5.4	57	292	13.0	31	2,465	- 2.9	52	271	14.6	31	2,589	7.1	54	289	9.3	31	2,398	- 6.2	56	265	3.1	31	2,544	5.4	51	285	15.5
700	31	3,120	2.5	54	286	15.7	31	3,007	- 5.5	48	268	17.5	31	3,155	3.9	46	289	11.1	31	2,937	- 8.8	50	232	7.4	31	3,108	2.5	45	291	19.2
650	31	3,708	- .8	56	276	16.7	31	3,584	- 8.7	45	265	20.2	31	3,752	.4	42	289	13.2	31	3,508	-11.5	49	237	10.3	31	3,696	- 1.2	41	291	22.0
600	31	4,351	- 4.2	54	277	19.0	31	4,201	-12.0	44	267	21.6	31	4,392	- 3.2	41	290	15.7	31	4,119	-14.5	52	248	10.9	31	4,337	- 5.3	38	290	23.9
550	31	5,023	- 8.2	46	283	19.0	31	4,857	-16.5	44	265	24.7	31	5,066	- 7.4	39	291	15.9	31	4,769	-18.5	50	254	12.8	31	5,004	- 9.6		290	25.8
500	31	5,766	-12.8	43	289	22.2	31	5,572	-21.0	40	263	30.1	31	5,813	-11.8	42	292	18.3	31	5,480	-22.9	50	256	16.5	31	5,746	-14.3		288	30.7
450	30	6,550	-18.3	42	283	26.4	31	6,338	-26.0		261	33.0	31	6,605	-17.1	39	291	20.0	31	6,236	-28.2	49	251	17.5	31	6,527	-19.5		283	32.1
400	29	7,428	-24.3	39	278	27.8	31	7,186	-31.9	34	254	34.6	31	7,487	-23.3	38	288	22.3	31	7,080	-34.2	48	268	17.5	31	7,402	-25.7		282	35.6
350	28	8,387	-31.5	38	282	32.4	31	8,116	-38.7		256	40.0	31	8,450	-30.4		287	25.8	31	8,002	-40.4		270	20.4	31	8,356	-32.9		285	43.5
300	28	9,460	-39.6		286	38.1	31	9,159	-45.7		257	41.6	31	9,527	-38.8		287	29.9	31	9,040	-46.0		275	23.9	31	9,422	-41.2		284	44.9
250	28	10,682	-49.2		282	43.5	31	10,355	-52.4		256	44.1	31	10,752	-48.6		288	30.7	31	10,239	-50.6		287	21.6	31	10,635	-50.5		283	51.7
200	27	12,112	-58.7		292	41.8	31	11,790	-53.4		260	40.8	31	12,185	-58.9		286	33.2	31	11,690	-52.3		291	21.6	30	12,066	-58.7		280	50.6
175	27	12,944	-61.2		291	39.4	31	12,652	-52.0		263	35.4	31	13,015	-62.3		288	33.8	30	12,554	-52.2		287	17.5	30	12,900	-60.8		282	51.5
150	27	13,901	-61.5		289	35.0	31	13,651	-51.9		258	31.7	31	13,966	-62.4		287	28.4	30	13,554	-51.8		285	14.2	30	13,860	-59.9		282	43.1
125	27	15,033	-61.0		287	29.1	31	14,832	-52.1		257	26.6	31	15,091	-62.2		283	25.5	30	14,734	-52.6		287	9.1	30	14,999	-60.1		286	34.6
100	27	16,418	-61.5		286	21.2	31	16,275	-52.4		261	21.4	31	16,466	-63.4		292	19.4	30	16,175	-52.3		283	5.2	30	16,391	-60.4		288	27.2
80	27	17,802	-60.7		302	13.0	31	17,716	-52.7		260	15.2	31	17,838	-63.0		301	12.4	30	17,619	-52.0		287	2.5	30	17,780	-60.7		286	18.8
70	27	18,639	-59.5		317	6.8	31	18,581	-52.7		254	11.3	31	18,676	-61.4		327	7.0	30	18,486	-52.1		18	.8	30	18,612	-59.7		295	12.8
60	27	19,604	-57.2		13	2.9	31	19,573	-52.4		245	8.9	30	19,626	-59.0		43	4.3	30	19,482	-52.1		52	2.7	29	19,583	-58.2		334	5.6
50	27	20,763	-55.2		68	3.9	30	20,753	-51.9		251	8.2	30	20,780	-55.7		60	5.6	30	20,662	-51.9		63	2.5	29	20,736	-56.4		54	3.5
40	26	22,194	-52.9		62	2.9	29	22,200	-50.9		247	3.7	30	22,209	-53.4		87	7.4	30	22,108	-51.7		56	4.5	29	22,159	-54.5		74	5.1
30	25	24,059	-50.1		51	2.9	29	24,076	-49.8		68	1.0	29	24,071	-50.0		84	8.5	30	23,973	-51.4		57	3.9	28	24,014	-51.4		62	2.7
25	25	25,256	-48.0		47	2.3	29	25,272	-48.4		75	2.5	28	25,267	-47.7		73	6.6	30	25,159	-50.7		90	4.7	24	25,200	-49.2		59	2.9
20	24	26,730	-45.3		306	3.1	27	26,752	-46.4		72	4.1	28	26,750	-44.7		79	5.8	30	26,617	-49.1		79	2.7	22	26,668	-47.1			.0
15	23	28,666	-42.2		332	4.1	27	28,675	-43.3		74	3.7	18	28,669	-41.0		43	4.9	30	28,512	-47.1		77	2.7	13	28,600	-43.8		286	9.3
10	22	31,441	-36.2		292	7.4	25	31,426	-37.8		56	2.9							28	31,225	-42.8		48	5.2						
7	22	33,941	-32.1		272	5.4	24	33,920	-30.5		170	1.9							21	33,645	-37.6		51	5.8						
5	11	36,311	-27.5				12	36,289	-24.9										6	36,068	-33.3									

Standard pressure surface (mb)	DAYTON, OHIO 984 MB						DEL RIO, TEXAS 978 MB						DENVER, COLO. 839 MB						DODGE CITY, KANS. 925 MB						EL PASO, TEXAS 882 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	297	10.1	81	131	.8	31	314	21.1	83	115	8.0	31	1,611	8.4	61	210	3.3	31	792	14.1	80	166	2.7	31	1,193	16.8	44	183	.6
1000	31	158					31	121					31	124					31	123					31	105				
950	31	586	11.5	65	242	4.1	31	570	20.3	81	138	15.9	31	558					31	559					31	551				
900	31	1,038	9.9	59	277	8.5	31	1,035	18.7	75	166	17.9	31	1,017					31	1,020	15.6	65	171	8.7	31	1,019				
850	31	1,512	8.0	59	283	11.7	31	1,525	17.4	68	177	15.2	31	1,498					31	1,505	14.8	56	212	13.8	31	1,512	19.5	32	260	1.9
800	31	2,011	5.6	55	277	14.2	31	2,042	15.2	63	192	11.3	31	2,003	11.2	51	249	4.5	31	2,017	12.7	49	233	14.0	31	2,030	16.8	28	260	6.4
750	31	2,534	3.2	44	274	16.7	31	2,587	12.9	48	211	5.8	31	2,538	9.3	44	238	6.4	31	2,553	9.9	44	242	14.0	31	2,574	13.2	27	251	8.4
700	31	3,093	.3	35	277	19.4	31	3,164	9.1	46	251	4.7	31	3,109	5.7	42	251	8.7	31	3,126	6.3	43	255	14.0	31	3,152	8.6	31	243	10.9
650	31	3,679	- 2.8		280	22.7	31	3,772	4.6	44	268	5.6	31	3,705	1.1	43	263	13.6	31	3,726	2.0	47	265	14.0	31	3,751	3.7	35	239	12.4
600	31	4,315	- 6.4		281	24.3	31	4,422	- .3	46	281	8.2	31	4,348	- 4.0	45	272	21.4	31	4,371	- 2.9	49	266	17.1	31	4,403	- 1.4	41	236	14.2
550	31	4,983	-10.7		280	24.3	31	5,104	- 5.4	47	275	11.9	31	5,020	- 9.2	44	272	23.7	31	5,046	- 8.1	49	267	19.4	31	5,081	- 6.7	43	246	18.3
500	31	5,717	-15.5		286	27.6	31	5,853	-10.5	46	272	15.0	31	5,758	-14.8	39	268	25.1	31	5,788	-13.4	44	271	21.4	31	5,828	-12.0	41	251	22.9
450	31	6,495	-21.2		287	31.5	31	6,654	-15.6	39	265	17.9	31	6,538	-20.6		265	26.4	31	6,573	-19.1	40	268	25.8	31	6,622	-17.4		257	24.9
400	31	7,363	-27.5		284	36.1	31	7,537	-21.8	40	264	22.0	31	7,407	-27.1		263	30.1	31	7,448	-25.5	38	265	29.7	31	7,500	-23.5		259	25.6
350	31	8,310	-34.5		282	42.6	31	8,506	-28.8		269	27.6	31	8,355	-34.2		260	34.6	31	8,402	-32.8	37	263	35.8	31	8,461	-30.9		258	30.7
300	31	9,369	-42.5		285	49.2	31	9,591	-37.1		262	32.8	31	9,416	-42.2		258	39.6	31	9,470	-41.0		262	40.2	31	9,537	-39.1		258	37.7
250	31	10,577	-51.0		287	55.0	31	10,825	-47.0		268	39.1	31	10,625	-51.3		255	42.7	31	10,684	-50.3		259	42.9	31	10,761	-48.6		264	46.0
200	31	12,003	-57.7		288	56.7	31	12,264	-58.1		269	47.8	30	12,040	-59.1		259	47.8	30	12,107	-59.0		261	47.4	31	12,196	-58.3		265	54.8
175	31	12,841	-58.7		291	47.8	31	13,097	-61.9		270	49.4	30	12,876	-59.3		261	48.2	30	12,940	-60.6		264	47.6	31	13,027	-62.2		262	53.2
150	31	13,813	-57.2		290	40.0	31	14,045	-63.7		268	43.9	30	13,842	-58.2		262	42.2	30	13,901	-59.6		269	40.2	31	13,978	-63.1		260	47.0
125	31	14,964	-58.2		286	29.1	31	15,160	-65.3		266	32.6	30	14,990	-58.8		263	33.8	30	15,040	-60.2		271	35.2	31	15,097	-63.9		257	37.5
100	31	16,363	-59.2		287	24.5	31	16,510	-67.8		269	18.8	30	16,386	-59.7		264	27.8	30	16,427	-61.3		273	27.6	31	16,458	-66.4		255	22.9
80	31	17,763	-58.6		287	16.9	31	17,845	-69.0		246	5.2	30	17,780	-60.1		268	15.2	30	17,809	-62.0		268	15.9	30	17,802	-67.5		248	10.5
70	31	18,613	-57.6		294	9.9	31	18,655	-67.3		127	2.9	29	18,614	-60.1		264	8.4	30	18,640	-61.3		261	11.1	30	18,609	-65.7		216	5.6
60	31	19,581	-56.1		302	5.4	31	19,586	-62.7		87	8.2	28	19,580	-57.7		253	3.7	30	19,597	-59.0		255	7.4	30	19,550	-62.6		118	3.1
50	31	20,744	-54.7		323	2.9	31	20,722	-58.1		100	9.9	28	20,737	-55.9		238	.8	30	20,748	-56.6		207	1.2	30	20,686	-58.3		90	6.4
40	31	22,177	-53.3		30	1.9	30	22,139	-55.1		77	8.9	28	22,164	-53.9		68	3.5	28	22,175	-54.0		66	2.1	30	22,100	-55.2		77	7.6
30	31	24,039	-51.1		28	2.9	30	23,992	-51.3		88	12.2	28	24,023	-51.6		29	2.5	25	24,036	-51.2		66	3.9	30	23,950	-51.8		82	9.9
25	30	25,232	-49.0		1	2.9	30	25,181	-49.2		87	12.2	28	25,211	-49.7		345	1.6	24	25,227	-49.3		76	2.5	30	25,137	-49.6		87	12.0
20	29	26,704	-46.6		360	4.1	29	26,660	-45.7		94	13.2	28	26,680	-47.2		265	4.5	19	26,689	-47.0		53	.6	29	26,608	-46.4		93	10.9
15	20	28,589	-43.7		334	4.3	27	28,590	-42.5		90	12.0	26	28,591	-44.2		265	7.0	13	28,593	-43.7		282	3.5	24	28,533	-42.9		74	6.6
10	8	31,324	-39.1				14	31,338	-38.3		79	10.1	22	31,325	-39.5		275	13.2	5	31,364	-38.8				8	31,236	-39.3			
7													17	33,751	-34.9		268	18.5												
5													10	36,124	-31.1															

Standard pressure surface (mb)	ELY, NEV. 808 MB						FAIRBANKS, ALASKA * 997 MB						FLINT, MICH. 991 MB						FORT WORTH, TEXAS 995 MB						GLASGOW, MONT. 934 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,908	5.4	62	185	5.2	30	135	6.3	61	1	2.9	31	234	8.4	82	224	2.3	31	180	19.3	83	163	3.7	31	696	6.0	82	46	2.7
1000	31	123					30	107			17	2.5	31	160					31	140					31	132				
950	31	559					30	524	6.8	46	94	.8	31	586	9.3	63	256	5.2	31	583	18.5	79	185	12.8	31	557				
900	31	1,014					30	971	4.0	48	202	.8	31	1,032	7.2	60	275	8.9	31	1,047	18.1	68	200	12.8	31	1,004	8.4	66	311	1.7
850	31	1,491					30	1,433	1.1	49	148	.8	31	1,500	4.8	59	280	12.4	31	1,535	16.2	60	217	8.9	31	1,476	6.7	60	305	7.4
800	31	1,992	8.2	51	179	4.7	30	1,918	- 2.4	52	177	2.1	31	1,993	2.7	50	286	14.8	31	2,049	13.6	55	242	7.6	31	1,971	3.7	59	310	9.3
750	31	2,526	7.8	40	194	4.9	30	2,422	- 5.8	49	173	2.5	31	2,511	.4	43	284	17.5	31	2,588	10.6	46	259	7.2	31	2,489	.4	54	304	11.3
700	31	3,091	3.9	42	224	8.7	30	2,965	- 8.9	49	199	3.5	31	3,065	- 2.1	37	281	21.4	31	3,162	6.7	47	267	8.9	31	3,042	- 2.9	47	296	14.0
650	31	3,687	- 1.0	48	228	12.2	30	3,529	-12.4	52	200	4.3	31	3,645	- 5.3	40	279	23.9	31	3,765	2.3	50	273	10.3	31	3,620	- 6.5	43	289	17.3
600	31	4,321	- 5.7	47	227	16.1	30	4,142	-16.1	48	198	2.9	31	4,275	- 9.1	37	278	26.4	31	4,408	- 2.1	47	275	10.3	31	4,247	-10.6	41	283	21.4
550	31	4,993	-10.7	49	231	16.7	30	4,787	-20.0	45	177	2.5	31	4,939	-13.3		280	28.6	31	5,090	- 6.7	41	276	12.8	31	4,906	-14.8	36	282	26.6
500	31	5,723	-15.9	41	235	19.2	30	5,492	-24.9	41	160	3.3	31	5,662	-18.3		283	29.7	31	5,831	-11.4	39	271	16.3	31	5,625	-19.8	39	278	29.3
450	31	6,503	-21.3	38	237	21.8	30	6,244	-30.0	39	153	5.6	31	6,432	-23.9		286	30.7	31	6,627	-16.7	43	270	20.6	31	6,390	-25.4	42	276	33.6
400	31	7,367	-27.6	36	235	23.1	30	7,081	-35.9	41	144	6.0	31	7,289	-30.1		285	33.8	31	7,507	-22.7	41	265	23.1	31	7,242	-31.7	42	274	35.8
350	31	8,313	-34.8	33	237	28.2	30	7,997	-42.3		155	7.2	31	8,226	-37.0		286	39.2	31	8,473	-30.1	38	267	26.6	31	8,172	-38.8		274	37.1
300	31	9,372	-42.8		243	27.0	30	9,023	-49.2		169	6.4	31	9,275	-44.5		284	44.5	31	9,550	-38.9		273	32.6	31	9,212	-46.4		272	42.4
250	31	10,577	-51.8		245	29.0	30	10,204	-54.3		240	3.9	31	10,476	-51.4		289	53.4	31	10,775	-48.9		270	39.4	31	10,401	-53.7		275	50.9
200	31	12,000	-58.1		253	27.6	30	11,634	-53.0		242	2.9	30	11,908	-55.8		286	56.0	31	12,206	-59.1		272	47.6	31	11,822	-56.1		278	43.3
175	30	12,833	-58.8		250	25.5	30	12,500	-50.9		246	3.7	30	12,755	-56.7		292	50.9	31	13,035	-62.3		277	49.2	30	12,672	-54.7		279	36.1
150	30	13,804	-57.7		251	25.5	30	13,504	-50.7		239	4.5	30	13,736	-55.2		289	41.8	30	13,988	-62.3		277	43.1	30	13,660	-53.9		274	31.5
125	30	14,954	-57.9		252	24.1	30	14,692	-51.0		283	3.1	30	14,898	-55.5		287	30.5	29	15,113	-63.4		279	33.4	30	14,829	-54.0		272	27.6
100	30	16,357	-59.1		256	17.9	30	16,143	-50.8		267	2.5	30	16,316	-56.6		279	22.7	29	16,478	-65.2		277	23.9	29	16,251	-54.8		278	24.9
80	29	17,758	-59.1		255	11.7	30	17,597	-50.6		261	1.2	30	17,733	-56.0		285	15.9	28	17,833	-66.0		272	8.5	29	17,677	-55.1		278	15.2
70	29	18,601	-59.2		260	5.8	30	18,469	-50.6		307	.8	30	18,591	-55.9		288	10.1	27	18,653	-65.0		271	3.1	29	18,532	-54.9		283	12.2
60	29	19,562	-58.2		316	2.3	30	19,472	-50.4		340	1.7	30	19,566	-54.9		290	6.8	26	19,597	-61.2		68	.8	29	19,515	-54.4		292	9.1
50	29	20,716	-56.2		70	1.2	30	20,662	-50.1		40	2.5	28	20,733	-54.2		318	5.2	26	20,739	-57.5		91	7.2	28	20,682	-53.4		324	4.5
40	27	22,139	-54.2		84	.8	29	22,114	-50.2		57	3.3	28	22,166	-53.2		311	3.1	26	22,159	-54.6		87	7.0	26	22,118	-53.3		351	3.9
30	27	23,995	-51.7		349	1.2	28	23,993	-49.3		62	4.1	28	24,029	-51.0		354	1.9	26	24,014	-50.8		80	9.9	24	23,971	-52.1		357	3.1
25	26	25,183	-49.5		297	1.9	28	25,191	-48.4		80	4.9	26	25,224	-49.1		293	3.5	26	25,207	-48.6		84	10.1	22	25,148	-50.9		360	3.7
20	25	26,653	-46.8		287	3.7	25	26,651	-47.5		72	5.8	21	26,686	-46.9		302	4.5	26	26,683	-45.8		81	8.4	18	26,605	-49.2		300	2.1
15	16	28,573	-43.6		265	3.9	22	28,558	-45.4		56	9.7	12	28,567	-45.5				24	28,617	-42.3		81	6.2	9	28,485	-47.8			
10							22	31,296	-39.5		79	11.5							18	31,375	-37.7		63	4.5						
7							19	33,737	-34.5		75	13.6							9	33,843	-33.3									
5							11	36,051	-30.7										5	36,197	-31.0									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1963

GRAND JUNCTION, COLO. 851 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	13.1	31	130	5.6
1000	31	91				
950	31	529				
900	31	997				
850	31	1,485			129	5.4
800	31	1,997	14.2	25	162	8.2
750	31	2,535	10.7	27	218	7.2
700	31	3,109	6.2	32	243	11.5
650	31	3,707	1.1	37	242	15.3
600	31	4,348	-4.6	44	246	18.3
550	31	5,019	-10.2	47	242	21.6
500	31	5,754	-15.4	45	247	24.1
450	31	6,538	-20.8	38	247	30.1
400	31	7,401	-27.2		248	32.6
350	31	8,349	-34.4		254	33.8
300	31	9,408	-42.6		257	37.1
250	31	10,616	-51.3		261	38.5
200	31	12,038	-58.6		263	38.5
175	30	12,875	-60.0		262	37.9
150	30	13,839	-59.2		262	35.4
125	30	14,981	-59.4		262	30.3
100	29	16,373	-60.8		264	23.3
80	28	17,762	-61.3		266	15.2
70	26	18,603	-60.9		270	6.6
60	26	19,554	-58.7		291	2.5
50	25	20,707	-56.2		338	.8
40	25	22,132	-54.1		288	1.4
30	25	23,989	-51.4		307	3.3
25	25	25,178	-49.5		291	4.5
20	25	26,646	-47.3		272	5.2
15	24	28,563	-44.7		276	6.8
10	23	31,297	-40.2		262	14.0
7	21	33,784	-35.7		269	15.3
5	18	36,143	-32.0			

GREAT FALLS, MONT. 888 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	6.1	70	247	3.7
1000	31	136				
950	31	566				
900	31	1,015				
850	31	1,486	8.1	51	255	4.3
800	31	1,984	5.0	54	285	[illegible]
750	31	2,504	1.2	58	285	7.2
700	31	3,059	-2.7	58	285	9.7
650	31	3,640	-6.3	56	270	15.2
600	31	4,265	-10.1	51	268	18.7
550	31	4,926	-14.4	47	264	23.1
500	31	5,647	-19.3	47	266	25.6
450	31	6,415	-24.8	42	267	29.1
400	31	7,269	-31.0	42	266	32.1
350	31	8,202	-38.0		263	36.7
300	31	9,245	-45.8		262	41.8
250	31	10,438	-53.1		266	47.2
200	31	11,859	-56.9		268	41.8
175	31	12,706	-55.6		267	38.9
150	31	13,692	-54.4		260	32.6
125	31	14,857	-54.1		260	27.6
100	31	16,286	-54.4		262	24.1
80	30	17,720	-54.7		264	14.8
70	29	18,578	-54.6		280	10.5
60	29	19,564	-54.1		284	6.8
50	29	20,736	-53.4		332	3.5
40	29	22,175	-52.4		359	3.[illegible]
30	29	24,041	-51.0		35	5.8
25	29	25,229	-50.2		38	5.4
20	28	26,693	-48.3		23	4.9
15	27	28,604	-45.4		27	6.8
10	23	31,360	-40.1		29	5.4
7	22	33,821	-36.2		329	1.4
5	21	36,181	-30.8			

GREEN BAY, WIS. 992 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	6.9	83	318	1.0
1000	31	140				
950	31	565	8.5	59	252	5.2
900	31	1,010	6.7	61	270	7.8
850	31	1,478	4.6	57	282	11.5
800	31	1,970	2.4	54	290	13.0
750	31	2,488	-.1	55	289	14.6
700	31	3,039	-2.8	48	284	17.3
650	31	3,619	-6.1	46	283	20.4
600	31	4,245	-9.7	39	285	23.3
550	31	4,905	-13.9	35	286	27.4
500	31	5,629	-18.8	34	284	31.3
450	31	6,403	-24.3		283	33.0
400	31	7,254	-30.6		283	34.0
350	31	8,189	-37.4		285	38.3
300	31	9,237	-44.4		288	43.9
250	31	10,440	-50.9		287	50.5
200	31	11,873	-55.9		283	53.4
175	31	12,723	-55.5		285	47.0
150	31	13,707	-54.8		287	40.8
125	31	14,875	-54.6		288	29.7
100	31	16,300	-55.3		287	24.5
80	30	17,724	-55.7		284	18.1
70	30	18,578	-55.3		290	12.2
60	30	19,560	-54.4		306	7.8
50	30	20,730	-53.8		316	4.9
40	30	22,166	-52.9		319	3.9
30	30	24,031	-50.5		302	3.1
25	28	25,219	-48.8		297	1.9
20	25	26,692	-46.8		315	4.5
15	16	28,622	-43.5		341	5.6

GREENSBORO, N. C. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	13.4	88	252	.8
1000	31	167				
950	31	600	15.1	67	284	5.4
900	31	1,057	12.9	63	288	7.6
850	31	1,536	10.6	64	294	10.3
800	31	2,040	8.1	63	289	12.4
750	31	2,572	5.3	58	278	14.6
700	31	3,133	2.1	53	281	16.3
650	31	3,728	-1.4	53	280	18.5
600	31	4,362	-5.1	45	281	20.2
550	31	5,038	-9.1	40	279	22.7
500	31	5,774	-13.6		277	26.8
450	31	6,562	-18.8	36	281	28.0
400	31	7,436	-24.9	37	277	32.8
350	31	8,393	-32.0		279	35.6
300	31	9,463	-40.4		282	40.8
250	31	10,681	-49.9		286	44.5
200	30	12,110	-58.9		286	43.1
175	30	12,941	-61.9		284	40.6
150	30	13,895	-61.5		280	33.0
125	30	15,027	-61.1		280	29.5
100	30	16,411	-61.7		283	22.9
80	30	17,794	-61.1		290	15.0
70	30	18,631	-59.9		303	8.0
60	30	19,593	-57.8		346	3.3
50	30	20,749	-55.8		56	5.2
40	30	22,177	-53.6		77	5.6
30	28	24,042	-50.7		76	6.4
25	26	25,242	-48.5		62	4.1
20	24	26,718	-45.9		48	2.9
15	13	28,643	-42.7			

GUAM, MARIANA IS. 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	111	25.1	91	79	5.4
1000	31	92				
950	31	545	23.1	86	82	14.2
900	31	1,015	20.4	85	87	14.6
850	31	1,508	18.0	79	91	11.5
800	31	2,027	15.5	75	87	8.2
750	31	2,573	12.7	70	99	7.6
700	31	3,151	9.6	64	108	5.8
650	31	3,764	6.2	57	125	2.9
600	31	4,416	2.5	54	196	2.1
550	31	5,112	-1.1	46	221	2.5
500	31	5,870	-5.3	47	233	2.7
450	31	6,689	-10.1	44	245	4.7
400	31	7,591	-15.6	44	253	7.6
350	31	8,586	-22.3		257	11.5
300	31	9,699	-30.7		256	15.5
250	31	10,967	-41.0		255	19.6
200	29	12,446	-53.3		259	25.5
175	29	13,292	-60.3		260	26.4
150	28	14,235	-67.8		267	27.6
125	28	15,310	-75.2		275	21.2
100	28	16,586	-79.3		285	7.8
80	25	17,856	-77.3		78	10.9
70	22	18,629	-72.5		81	17.5
60	22	19,550	-66.4		86	23.1
50	22	20,664	-62.3		85	29.1
40	22	22,056	-57.9		91	37.1
30	21	23,886	-52.6		87	43.3
25	20	25,072	-49.6		87	45.5
20	18	26,544	-47.1		86	42.4
15	13	28,471	-44.1		86	37.9

HILO, HAWAII 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	11	20.3	88	248	5.2
1000	31	150	21.1	83	223	3.9
950	31	591	18.3	84	101	5.1
900	31	1,056	15.4	86	92	9.5
850	31	1,539	12.5	87	93	7.2
800	31	2,046	9.7	84	97	5.8
750	31	2,580	8.0	67	108	5.1
700	31	3,149	5.2	58	146	2.3
650	31	3,752	2.2	50	216	2.9
600	31	4,395	-.9	43	272	6.2
550	31	5,080	-4.8	41	279	10.1
500	31	5,829	-9.2	39	277	15.0
450	31	6,635	-14.0	37	274	19.6
400	31	7,524	-19.6	34	277	25.5
350	31	8,502	-26.7	37	275	32.6
300	31	9,596	-34.9	35	275	42.4
250	31	10,842	-44.6		274	52.7
200	31	12,298	-56.4		274	61.8
175	31	13,132	-62.9		277	65.1
150	31	14,067	-68.6		279	57.3
125	31	15,146	-73.0		274	48.6
100	30	16,453	-72.7		279	29.3
80	30	17,771	-69.1		279	8.2
70	28	18,574	-65.8		116	1.9
60	28	19,515	-63.3		94	10.5
50	26	20,645	-60.3		93	18.3
40	26	22,047	-56.7		97	25.6
30	24	23,879	-53.0		96	27.6
25	23	25,061	-50.7		96	27.0
20	20	26,520	-48.1		96	25.6
15	16	28,419	-45.6		90	26.2
10						
7						
5						

HUNTINGTON, W. VA. 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	12.2	79	172	.6
1000	31	166				
950	31	597	12.9	67	241	2.1
900	31	1,052	10.9	67	274	8.2
850	31	1,527	8.8	64	282	14.0
800	31	2,028	6.7	54	278	15.7
750	31	2,553	4.1	47	277	17.9
700	31	3,114	1.1	44	278	20.0
650	31	3,701	-2.1	37	280	22.5
600	31	4,338	-6.0		277	23.9
550	31	5,005	-10.4		278	24.9
500	31	5,742	-15.0	35	282	28.6
450	31	6,522	-20.3	35	282	31.3
400	31	7,393	-26.5		282	35.4
350	31	8,345	-33.5		281	39.6
300	31	9,409	-41.4		283	45.5
250	31	10,624	-50.2		286	53.4
200	31	12,051	-58.8		290	55.4
175	31	12,885	-59.6		290	48.0
150	31	13,852	-58.5		286	36.5
125	31	14,995	-59.5		284	29.5
100	30	16,393	-59.8		288	24.7
80	30	17,790	-59.2		290	16.1
70	30	18,629	-58.6		305	9.1
60	30	19,600	-56.9		327	5.2
50	30	20,760	-55.2		354	2.1
40	29	22,191	-53.4		343	1.4
30	28	24,054	-50.7		40	1.7
25	27	25,249	-48.7		12	2.3
20	25	26,724	-46.0		44	.6
15	17	28,646	-43.2		329	1.7

INTERNAT. FALLS, MINN. * 973 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	4.7	77	186	1.4
1000	31	131				
950	31	552	6.3	71	221	4.1
900	31	994	4.6	66	252	7.0
850	31	1,459	2.8	62	278	8.5
800	31	1,947	.5	59	290	11.1
750	31	2,463	-2.0	59	290	12.2
700	31	3,009	-4.9	60	284	14.4
650	31	3,583	-8.1	55	283	18.3
600	31	4,206	-11.7	50	282	22.2
550	31	4,858	-15.9	45	286	23.9
500	31	5,579	-20.7	42	282	24.5
450	31	6,345	-26.1	42	286	26.6
400	31	7,191	-32.5	41	287	32.1
350	31	8,118	-39.6	40	287	35.4
300	31	9,156	-46.8		284	39.8
250	31	10,349	-52.4		278	46.0
200	31	11,779	-54.8		278	48.4
175	31	12,635	-53.8		278	41.4
150	31	13,628	-52.9		280	35.8
125	31	14,804	-53.0		282	30.5
100	31	16,240	-54.2		284	23.5
80	31	17,672	-53.8		285	18.8
70	31	18,530	-53.5		286	15.9
60	31	19,522	-52.8		291	11.7
50	31	20,698	-53.1		301	7.2
40	31	22,136	-52.8		292	5.1
30	29	24,001	-51.0		287	2.1
25	29	25,191	-49.6		315	1.4
20	28	26,655	-48.0		345	1.7
15	24	28,565	-45.2		339	1.4
10	22	31,310	-40.0		310	3.1
7	8	33,770	-33.8			

JACKSON, MISS. 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	94	18.0	88	120	1.0
1000	31	156	18.3	84	153	1.4
950	31	595	18.3	70	241	5.1
900	31	1,060	16.7	64	235	6.2
850	31	1,545	14.0	62	235	6.0
800	31	2,055	11.3	53	255	7.6
750	31	2,590	8.4	48	272	8.2
700	31	3,159	5.5	40	284	8.9
650	31	3,756	1.6	40	283	10.7
600	31	4,401	-2.4	38	280	12.2
550	31	5,078	-6.8	36	285	11.9
500	31	5,824	-11.5	36	280	20.4
450	31	6,618	-16.6	32	288	18.3
400	31	7,500	-22.7		294	21.8
350	31	8,466	-29.8		293	24.5
300	31	9,547	-38.1		297	28.0
250	31	10,777	-48.0		300	33.4
200	31	12,214	-58.3		299	39.1
175	31	13,047	-62.1		297	39.1
150	31	13,997	-63.1		293	37.3
125	31	15,120	-63.0		292	31.9
100	31	16,491	-64.5		293	22.5
80	31	17,849	-65.1		310	13.0
70	31	18,669	-63.6		344	7.2
60	31	19,617	-60.7		33	4.7
50	31	20,760	-57.3		69	6.8
40	31	22,180	-54.3		77	8.5
30	30	24,043	-50.8		75	10.7
25	30	25,236	-48.6		83	10.5
20	27	26,710	-45.5		83	9.9
15	15	28,627	-41.5		64	.8

JACKSONVILLE, FLA. 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	19.6	90	328	1.0
1000	31	163	20.1	81	305	1.6
950	31	603	19.2	71	304	2.5
900	31	1,071	16.8	69	272	2.5
850	31	1,556	13.7	67	264	3.9
800	31	2,066	10.8	60	268	5.4
750	31	2,597	7.5	59	269	4.7
700	31	3,168	3.9	50	287	5.2
650	31	3,762	.5	44	295	6.4
600	31	4,406	-3.2	39	299	8.4
550	31	5,082	-6.8	36	290	10.9
500	31	5,829	-11.2	30	291	12.4
450	31	6,621	-16.3		286	17.7
400	31	7,508	-22.8	33	294	21.8
350	31	8,473	-30.2	34	293	23.9
300	31	9,551	-38.6		295	27.4
250	31	10,778	-48.3		297	28.4
200	31	12,213	-58.5		291	30.7
175	31	13,044	-62.2		293	32.4
150	31	13,993	-62.8		293	30.3
125	31	15,114	-63.8		291	26.2
100	31	16,477	-65.2		295	19.8
80	31	17,834	-64.7		313	9.5
70	31	18,659	-62.8		341	4.9
60	31	19,608	-59.8		45	6.0
50	31	20,756	-56.8		76	8.4
40	31	22,179	-53.5		88	9.7
30	31	24,041	-50.3		88	11.3
25	30	25,237	-48.0		91	11.5
20	28	26,720	-45.3		87	11.9
15	28	28,657	-41.0		81	14.4
10	26	31,445	-35.9		92	15.5
7	17	33,975	-31.2		98	18.7
5	12	36,403	-25.7			

JOHNSTON IS., PACIFIC AREA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	25.1	87	81	13.8
1000	31	125	24.0	87	81	15.7
950	31	574	20.5	87	85	19.6
900	31	1,039	17.5	86	86	19.0
850	31	1,526	15.0	79	90	15.7
800	31	2,039	12.7	76	97	11.3
750	31	2,574	10.0	73	106	9.3
700	31	3,150	6.9	64	132	4.7
650	31	3,748	3.8	58	181	2.7
600	31	4,403	.5	53	242	5.1
550	30	5,088	-3.4	49	262	8.4
500	30	5,844	-7.7	44	259	12.8
450	30	6,650	-12.6	43	262	16.3
400	30	7,547	-18.1	41	269	21.6
350	30	8,530	-25.2	44	268	31.5
300	30	9,632	-33.3	41	270	38.3
250	30	10,886	-43.2		270	45.7
200	30	12,349	-55.5		268	50.7
175	30	13,185	-62.5		264	53.0
150	30	14,122	-69.2		270	50.5
125	29	15,195	-74.5		269	45.9
100	29	16,483	-76.8		272	29.0
80	26	17,782	-72.6		296	9.5
70	26	18,574	-68.1		60	5.1
60	26	19,507	-64.9		88	12.4
50	26	20,630	-61.4		89	23.7
40	26	22,026	-58.3		[illegible]	31.5
30	23	23,856	-53.7		88	34.0
25	21	25,030	-51.0		85	34.8
20	18	26,493	-47.9		88	34.2
15	13	28,399	-45.9		84	34.8
10	6	31,101	-42.2			
7						

KING SALMON, ALASKA 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	2.6	89	158	2.1
1000	31	103			173	3.3
950	31	520	2.8	68	150	3.5
900	31	956	.7	68	138	3.3
850	31	1,413	-1.6	64	137	2.9
800	31	1,894	-4.1	63	133	2.5
750	31	2,401	-6.9	61	106	4.9
700	31	2,936	-9.8	55	111	4.5
650	31	3,502	-12.9	49	110	4.9
600	31	4,112	-16.5	50	100	5.8
550	31	4,757	-20.2	51	97	4.3
500	31	5,461	-24.5	45	84	1.6
450	31	6,218	-29.3	40	24	1.7
400	31	7,052	-35.2	38	349	3.7
350	31	7,970	-41.6		337	6.0
300	31	9,000	-47.7		342	7.4
250	31	10,193	-51.[illegible]		330	8.7
200	31	11,643	-51.2		322	8.9
175	31	12,510	-51.1		296	6.6
150	31	13,513	-50.6		312	4.9
125	31	14,699	-51.3		289	4.5
100	30	16,146	-51.1		282	3.9
80	29	17,593	-51.4		301	3.1
70	28	18,466	-51.2		278	1.9
60	27	19,471	-51.0		277	1.0
50	24	20,660	-50.9			.0
40	24	22,112	-50.9		68	1.4
30	23	23,984	-50.2		57	1.7
25	22	25,172	-49.[illegible]		29	1.6
20	20	26,633	-48.8		51	1.6
15	17	28,521	-47.0		42	1.6
10	9	31,159	-43.3			

KOTZEBUE, ALASKA 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	-.4	85	125	4.5
1000	31	100	2.3	73	128	3.7
950	31	512	1.6	68	146	8.2
900	31	948	-.5	66	164	9.3
850	31	1,403	-2.9	64	173	9.5
800	31	1,882	-5.1	58	169	10.5
750	31	2,385	-7.4	53	172	12.4
700	31	2,922	-10.2	49	178	13.6
650	31	3,484	-13.3	48	181	14.0
600	31	4,096	-16.9	48	186	13.2
550	31	4,741	-20.9	46	184	14.8
500	31	5,442	-25.5	41	183	15.3
450	31	6,194	-30.8		184	19.4
400	31	7,025	-36.4		182	18.3
350	31	7,938	-43.2		182	17.5
300	31	8,963	-48.9		187	17.5
250	31	10,150	-52.2		198	16.9
200	31	11,593	-51.6		208	13.2
175	31	12,463	-50.0		210	11.7
150	31	13,471	-49.6		209	9.3
125	31	14,662	-50.2		212	7.6
100	30	16,124	-50.1		207	6.4
80	30	17,582	-49.7		202	4.1
70	30	18,456	-49.5		188	3.1
60	30	19,467	-49.5		144	2.5
50	30	20,662	-49.4		137	2.1
40	30	22,124	-49.4		58	2.5
30	29	24,018	-49.0		99	6.2
25	28	25,210	-48.4		86	6.0
20	24	26,693	-46.9		87	8.0
15	22	28,615	-44.2		92	10.3
10	14	31,358	-40.3		89	14.4
7	7	33,859	-36.4			

LAKE CHARLES, LA. 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	19.2	93	82	1.7
1000	31	154	21.5	82	138	3.1
950	31	598	19.3	74	178	7.4
900	31	1,063	17.2	63	184	6.2
850	31	1,549	15.2	54	194	7.8
800	31	2,061	12.6	48	205	6.0
750	31	2,600	9.9	43	223	4.7
700	31	3,171	6.8	40	261	4.3
650	31	3,776	3.0	36	277	5.2
600	31	4,420	-1.2	36	288	8.4
550	31	5,103	-5.8	38	286	11.1
500	31	5,850	-10.2	36	285	14.0
450	31	6,654	-15.6		289	15.3
400	31	7,533	-21.7		289	17.3
350	31	8,503	-28.[illegible]		290	23.1
300	31	9,587	-37.4		293	29.0
250	31	10,820	-47.4		292	34.6
200	31	12,258	-58.1		293	44.1
175	31	13,091	-62.2		292	46.8
150	31	14,040	-63.3		290	41.2
125	31	15,159	-64.6		288	30.3
100	31	16,514	-66.8		293	17.7
80	31	17,857	-68.0		316	9.7
70	31	18,675	-65.7		9	4.9
60	31	19,609	-62.1		60	7.6
50	31	20,746	-58.3		80	10.9
40	31	22,163	-54.7		84	11.1
30	30	24,019	-50.9		74	12.8
25	30	25,213	-48.5		84	13.8
20	29	26,688	-46.[illegible]		94	12.0
15	23	28,621	-43.4		79	12.4
10	14	31,370	-39.9			

LANDER, WYO. 829 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,696	6.9	65	263	4.1
1000	31	122				
950	31	553				
900	31	1,007				
850	31	1,487				
800	31	1,989	8.9	53	275	3.3
750	31	2,515	5.8	54	270	3.7
700	31	3,083	2.1	53	262	7.6
650	31	3,671	-2.0	55	260	15.0
600	31	4,309	-6.8	56	263	20.2
550	31	4,977	-11.5	49	260	24.9
500	31	5,708	-16.4	46	262	26.8
450	31	6,485	-22.0	43	264	28.6
400	31	7,349	-28.4	40	262	31.5
350	31	8,292	-35.7	37	258	37.1
300	31	9,346	-43.6		258	38.3
250	31	10,548	-52.4		261	39.8
200	31	11,966	-58.9		264	44.3
175	31	12,805	-58.2		263	43.9
150	31	13,778	-56.8		260	40.0
125	31	14,934	-56.9		261	33.2
100	31	16,343	-57.8		264	23.7
80	31	17,750	-58.0		264	14.2
70	31	18,593	-57.9		264	10.7
60	31	19,565	-57.2		270	7.8
50	31	20,723	-55.2		258	3.1
40	31	22,154	-53.5		349	2.7
30	30	24,012	-52.0		11	1.7
25	28	25,196	-50.3		337	1.7
20	26	26,664	-47.9		318	4.5
15	25	28,576	-44.6		288	3.5
10	16	31,305	-39.9		319	1.6

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1963

LAS VEGAS, NEV. 936 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	660	18.2	26	218	7.6
1000	31	83				
950	31	519				
900	31	996	20.7	24	222	6.8
850	31	1,487	17.5	25	235	6.0
800	31	2,000	13.7	28	219	9.1
750	31	2,531	9.5	28	210	11.3
700	31	3,108	5.1	30	203	12.4
650	31	3,705	.4	32	206	12.6
600	31	4,344	- 3.9	31	225	15.7
550	31	5,018	- 8.6	30	223	19.2
500	31	5,758	-13.9		229	21.8
450	31	6,543	-19.7		232	22.7
400	31	7,415	-26.3		234	26.8
350	31	8,366	-33.6		234	31.7
300	31	9,429	-41.9		239	35.4
250	31	10,641	-50.7		241	39.6
200	31	12,068	-57.9		248	43.5
175	31	12,907	-59.0		249	38.7
150	31	13,875	-58.5		250	33.8
125	28	15,018	-59.1		250	29.1
100	28	16,412	-60.7		246	21.8
80	26	17,793	-61.7		250	12.6
70	25	18,625	-61.5		260	7.0
60	23	19,578	-59.6		256	1.4
50	22	20,724	-57.4		47	2.1
40	19	22,141	-54.9		61	2.3
30	16	23,986	-51.5		45	.6
25	15	25,175	-49.1			.0
20	14	26,651	-46.0		278	1.7
15	10	28,577	-42.8			
10						
7						
5						

LIHUE, HAWAII 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	36	22.5	78	50	9.9
1000	31	161	21.6	78	57	13.2
950	31	602	18.0	82	65	16.1
900	31	1,065	14.7	82	69	14.2
850	31	1,547	11.7	80	73	12.4
800	31	2,053	9.5	69	81	9.5
750	31	2,586	7.5	53	85	5.8
700	31	3,153	5.3	38	59	1.4
650	31	3,750	2.3	34	332	1.9
600	31	4,398	- 1.3	30	301	3.1
550	31	5,078	- 5.3	32	293	5.1
500	31	5,829	- 9.7		278	10.7
450	31	6,632	-14.8	37	271	13.4
400	31	7,518	-20.8	39	271	19.0
350	31	8,490	-27.8		270	28.2
300	31	9,579	-36.0		271	34.8
250	31	10,819	-45.6		272	46.2
200	31	12,268	-57.0		271	60.4
175	31	13,100	-63.1		273	64.1
150	31	14,036	-68.4		276	59.7
125	31	15,120	-71.2		275	45.1
100	30	16,438	-71.2		278	27.6
80	30	17,766	-67.7		280	9.9
70	29	18,573	-64.5		314	1.0
60	28	19,519	-62.1		87	7.8
50	27	20,655	-59.0		94	14.4
40	27	22,064	-56.4		93	20.6
30	27	23,906	-53.0		91	22.7
25	26	25,088	-50.6		93	24.5
20	26	26,553	-47.6		89	24.5
15	24	28,470	-44.2		88	25.3
10	22	31,212	-40.8		94	22.9
7	19	33,664	-37.0		85	21.6
5	14	36,013	-33.7			

LITTLE ROCK, ARK. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	16.3	86	84	.6
1000	31	153	17.5	74	81	1.0
950	31	587	17.8	64	205	4.3
900	31	1,054	15.5	63	229	7.0
850	31	1,538	13.5	55	248	7.6
800	31	2,047	11.0	52	265	8.7
750	31	2,582	8.4	47	271	12.8
700	31	3,150	5.0	45	279	13.6
650	31	3,743	1.0	45	277	13.8
600	31	4,390	- 3.1	39	279	16.3
550	31	5,064	- 7.5	35	284	18.1
500	31	5,810	-12.2		280	19.4
450	31	6,598	-17.4		280	22.0
400	31	7,482	-23.5		286	24.9
350	31	8,444	-30.8		285	28.6
300	31	9,519	-39.2		285	32.6
250	31	10,743	-48.9		287	33.8
200	31	12,175	-58.9		285	38.7
175	31	13,006	-62.0		284	37.9
150	31	13,958	-62.4		287	34.0
125	30	15,087	-62.1		289	27.0
100	30	16,464	-63.1		293	22.7
80	29	17,834	-64.1		299	13.2
70	29	18,655	-62.8		304	8.5
60	29	19,610	-60.2		346	2.9
50	29	20,755	-57.6		53	4.7
40	29	22,173	-54.9		78	6.4
30	28	24,031	-51.3		69	6.6
25	26	25,220	-49.2		61	7.2
20	22	26,698	-46.4		67	3.7
15	17	28,633	-42.8			
10	6	31,345	-38.7			
7						
5						

MCGRATH, ALASKA 1000 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	4.0	78	226	1.7
1000	31	105			269	2.1
950	31	526	5.0	60	194	1.7
900	31	965	2.4	60	153	2.3
850	31	1,424	- .4	62	140	4.7
800	31	1,907	- 3.5	62	131	4.5
750	31	2,412	- 6.4	59	130	5.4
700	31	2,951	- 9.1	51	118	5.6
650	31	3,515	-12.2	47	110	6.0
600	31	4,130	-15.9	47	116	7.6
550	31	4,773	-20.0	48	111	8.9
500	31	5,482	-24.6	47	111	9.9
450	31	6,226	-29.6	45	109	9.5
400	31	7,072	-35.6		106	8.7
350	31	7,988	-42.1		97	9.9
300	31	9,016	-48.5		90	7.4
250	31	10,203	-52.8		98	4.5
200	31	11,643	-51.9		307	2.9
175	31	12,511	-50.5		320	3.1
150	31	13,516	-50.4		316	1.0
125	31	14,703	-50.9		264	1.2
100	31	16,156	-50.6		314	1.2
80	30	17,607	-50.7		277	.8
70	30	18,473	-50.6		306	1.0
60	30	19,481	-50.5		26	.8
50	30	20,670	-50.4		56	1.7
40	30	22,125	-50.4		64	1.9
30	28	23,990	-50.1		68	2.3
25	27	25,181	-49.4		74	3.1
20	24	26,650	-48.2		86	5.1
15	23	28,547	-45.5		77	4.3
10	8	31,257	-42.0			
7						
5						

MAJURO, MARSHALL IS. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	27.5	83	90	7.6
1000	31	87	27.0	83	87	8.2
950	31	536	24.0	81	86	10.9
900	31	1,013	21.2	79	93	11.7
850	31	1,508	18.3	77	94	11.9
800	31	2,027	15.6	74	94	11.5
750	31	2,578	12.9	70	93	11.3
700	31	3,152	9.9	68	91	9.1
650	31	3,767	6.4	68	99	8.2
600	31	4,420	2.9	65	102	5.6
550	31	5,115	- .9	61	80	2.7
500	31	5,878	- 5.2	53	160	1.0
450	31	6,696	-10.0	47	203	2.7
400	31	7,600	-15.9	43	205	3.5
350	31	8,594	-22.4	36	232	3.3
300	30	9,707	-30.8		274	4.9
250	30	10,975	-40.9		300	7.8
200	30	12,453	-53.4		295	12.6
175	30	13,299	-60.4		292	14.6
150	30	14,243	-67.8		278	15.7
125	30	15,319	-75.3		268	20.0
100	30	16,592	-80.3		272	15.3
80	30	17,855	-78.0		315	1.0
70	30	18,629	-72.2		85	10.9
60	29	19,541	-68.7		85	23.9
50	28	20,644	-63.9		86	39.2
40	28	22,028	-59.0		87	50.3
30	28	23,858	-53.2		88	59.7
25	27	25,042	-49.8		88	60.0
20	24	26,513	-46.3		88	48.8
15	18	28,438	-42.3		93	20.2
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MEDFORD, OREG. 970 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	8.3	88	270	1.6
1000	31	147				
950	31	574	10.2	74	285	3.1
900	31	1,022	8.9	69	276	2.9
850	31	1,494	6.8	69	220	2.7
800	31	1,990	4.7	61	205	4.9
750	31	2,511	1.9	56	223	10.3
700	31	3,068	- 1.4	53	229	14.0
650	31	3,650	- 5.2	50	233	15.5
600	31	4,279	- 9.3	47	237	18.1
550	31	4,942	-13.6	44	241	19.6
500	31	5,665	-18.3	41	244	20.2
450	31	6,436	-23.9	42	244	21.2
400	31	7,293	-30.2	39	247	24.1
350	31	8,230	-37.2		249	23.9
300	31	9,277	-45.1		246	24.5
250	31	10,475	-52.5		250	24.1
200	31	11,897	-58.1		249	23.9
175	30	12,745	-58.1		254	21.4
150	29	13,719	-56.0		245	20.6
125	28	14,882	-55.9		247	18.5
100	28	16,300	-56.2		245	15.9
80	28	17,719	-55.9		241	11.7
70	28	18,571	-55.9		248	8.4
60	28	19,549	-56.1		267	2.7
50	28	20,707	-55.7		61	1.6
40	28	22,131	-54.5		65	1.7
30	26	23,980	-52.7		32	2.3
25	26	25,161	-51.1		60	3.1
20	24	26,615	-49.4		43	1.9
15	22	28,509	-46.5		342	3.3
10	20	31,236	-41.0		295	5.4
7	15	33,734	-35.8		271	5.1
5	14	36,065	-32.5			

MIAMI, FLA. 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	22.0	87	51	1.6
1000	31	154	22.2	80	91	3.1
950	31	595	19.8	76	105	6.4
900	31	1,064	17.1	70	101	6.8
850	31	1,549	14.2	66	82	6.8
800	31	2,061	11.4	60	73	6.0
750	31	2,593	8.6	53	65	4.9
700	31	3,167	5.7	44	48	2.7
650	31	3,762	2.5	42	340	1.4
600	31	4,414	- 1.2	38	301	3.7
550	31	5,093	- 5.2	35	307	6.8
500	31	5,848	- 9.8	31	303	8.4
450	31	6,648	-15.1	28	295	12.2
400	31	7,535	-21.4		298	14.0
350	31	8,506	-28.7		303	16.1
300	31	9,590	-37.4		300	18.3
250	31	10,822	-47.4		292	23.1
200	31	12,263	-57.6		283	32.4
175	31	13,097	-61.9		282	31.7
150	31	14,046	-64.1		289	32.8
125	31	15,155	-66.8		292	23.9
100	31	16,500	-68.5		306	12.8
80	31	17,835	-68.1		350	4.7
70	31	18,654	-65.1		48	5.8
60	30	19,598	-60.0		68	9.1
50	30	20,746	-57.0		87	14.6
40	30	22,170	-53.8		89	16.3
30	29	24,037	-50.6		94	18.1
25	29	25,233	-48.2		88	20.6
20	28	26,715	-44.5		85	23.5
15	28	28,658	-40.9		85	22.9
10	25	31,444	-36.5		91	25.6
7	19	33,938	-31.4		111	19.0
5	5	36,351	-25.6			

MIDLAND, TEXAS * 915 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	874	17.4	81	151	5.2
1000	31	113				
950	31	557				
900	31	1,020	18.0	69	160	9.1
850	31	1,510	18.2	55	191	14.2
800	31	2,028	16.1	44	209	12.4
750	31	2,571	12.9	34	231	7.8
700	31	3,148	8.8	35	263	6.8
650	31	3,754	3.9	36	285	7.6
600	31	4,400	- 1.3	43	287	10.7
550	31	5,083	- 6.6	46	280	14.4
500	31	5,825	-11.4	41	270	16.7
450	31	6,624	-16.8	35	263	18.7
400	31	7,500	-22.9	33	260	24.3
350	31	8,464	-30.4	32	259	31.5
300	31	9,542	-38.6	32	257	35.4
250	30	10,766	-48.1		261	41.6
200	29	12,201	-58.1		266	48.6
175	29	13,035	-61.7		264	48.8
150	29	13,987	-62.3		264	43.3
125	29	15,111	-63.5		263	38.7
100	29	16,476	-65.4		264	23.3
80	29	17,824	-67.2		250	9.5
70	29	18,643	-66.3		242	5.6
60	29	19,573	-62.4		136	3.5
50	29	20,709	-58.1		97	5.4
40	29	22,121	-55.6		93	7.0
30	28	23,968	-51.8		87	8.5
25	28	25,155	-49.6		83	9.9
20	28	26,626	-46.6		82	9.9
15	27	28,556	-42.5		94	7.4
10	23	31,330	-37.8		60	7.2
7	14	33,839	-34.5		81	9.5
5	7	36,161	-30.8			

MONTGOMERY, ALA. 1012 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	18.0	88	282	1.0
1000	31	163	18.7	82	47	1.2
950	31	605	19.1	67	305	1.4
900	31	1,069	16.7	66	242	5.1
850	31	1,554	13.7	67	249	6.2
800	31	2,063	10.9	59	265	7.4
750	31	2,597	8.1	52	270	8.5
700	31	3,166	4.9	45	281	10.9
650	31	3,764	1.4	42	290	11.5
600	31	4,407	- 2.6	42	290	12.8
550	31	5,088	- 7.0	41	294	12.8
500	31	5,830	-11.5	36	291	16.5
450	31	6,626	-16.7	36	290	18.7
400	31	7,506	-22.7	35	291	22.2
350	31	8,471	-30.1	34	291	25.5
300	31	9,551	-38.4		291	31.7
250	31	10,779	-48.3		297	34.2
200	31	12,214	-58.5		302	38.5
175	31	13,046	-62.1		302	38.3
150	30	13,995	-62.4		297	36.1
125	30	15,121	-62.6		294	30.3
100	30	16,490	-64.5		293	22.5
80	29	17,854	-64.3		307	11.7
70	29	18,676	-62.6		327	6.0
60	29	19,630	-60.1		40	4.9
50	29	20,776	-57.1		69	7.0
40	29	22,199	-53.9		75	8.2
30	29	24,060	-50.6		86	10.9
25	28	25,254	-48.5		84	11.9
20	18	26,718	-46.2		71	11.7
15	7	28,629	-42.9			
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NANTUCKET, MASS. 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	10.7	84	258	2.5
1000	31	152	10.6	78	251	7.0
950	31	577	10.7	64	273	10.5
900	31	1,030	8.6	60	267	10.7
850	31	1,501	6.0	63	266	12.4
800	31	1,995	3.5	60	269	13.4
750	31	2,514	.9	55	272	17.9
700	31	3,069	- 1.7	50	271	19.8
650	31	3,650	- 4.7	46	267	24.1
600	31	4,282	- 8.4	39	266	27.0
550	31	4,947	-12.3		268	28.8
500	31	5,675	-16.9		266	32.4
450	31	6,452	-22.4		264	34.8
400	31	7,313	-28.7		264	38.3
350	31	8,255	-35.8		266	38.7
300	31	9,310	-43.1		263	47.4
250	31	10,517	-51.2		269	51.5
200	31	11,945	-56.9		270	49.7
175	31	12,789	-57.8		271	44.9
150	31	13,764	-57.3		270	34.8
125	31	14,918	-56.6		266	28.8
100	31	16,332	-56.9		267	22.5
80	30	17,744	-56.7		263	11.5
70	30	18,594	-56.0		257	6.6
60	30	19,575	-55.2		263	4.5
50	30	20,739	-54.8		356	.6
40	30	22,171	-53.3		66	1.6
30	30	24,033	-50.9		53	2.9
25	30	25,224	-49.1		47	3.7
20	30	26,698	-46.3		25	3.3
15	28	28,621	-42.9		356	3.9
10	24	31,399	-36.8		282	3.9
7	22	33,914	-31.3		278	10.1
5	14	36,362	-25.5			

NASHVILLE, TENN. 998 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	14.5	89	185	.8
1000	31	158			360	3.7
950	31	591	16.2	66	247	4.7
900	31	1,054	13.9	66	266	8.9
850	31	1,535	11.3	67	271	12.2
800	31	2,040	8.8	56	272	14.6
750	31	2,569	5.9	50	276	15.3
700	31	3,134	3.0	43	275	16.1
650	31	3,726	- .5	40	276	18.1
600	31	4,366	- 4.4	40	281	19.8
550	31	5,035	- 9.0	41	279	23.7
500	31	5,778	-13.5	39	279	25.6
450	31	6,569	-18.7	33	281	30.3
400	31	7,440	-24.7		282	34.4
350	31	8,397	-32.1		283	37.5
300	31	9,468	-40.3		282	42.7
250	31	10,686	-49.8		284	46.8
200	31	12,114	-59.4		286	48.4
175	31	12,944	-61.7		284	46.2
150	31	13,898	-61.6		284	42.2
125	30	15,031	-61.0		288	33.4
100	30	16,413	-61.9		286	25.[illegible]
80	30	17,792	-62.1		293	16.1
70	30	18,627	-61.3		303	9.5
60	30	19,578	-59.5		344	4.3
50	30	20,725	-57.0		25	2.9
40	30	22,145	-54.7		58	6.0
30	30	23,998	-51.6		70	4.5
25	29	25,182	-49.2		64	3.9
20	29	26,654	-46.6		45	3.5
15	28	28,576	-43.8		12	3.5
10	25	31,318	-39.6		296	6.2
7	21	33,810	-36.6		290	9.3
5	15	36,134	-32.8			

N. Y. INT. AP, IDLEWILD 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	12.4	74	306	4.5
1000	31	159	12.1	65	304	6.2
950	31	588	10.8	56	302	8.7
900	31	1,038	8.6	55	294	9.7
850	31	1,509	6.3	58	277	11.5
800	31	2,004	4.0	55	273	14.2
750	31	2,527	1.4	48	277	17.9
700	31	3,081	- 1.2	38	272	21.8
650	31	3,667	- 4.4		275	24.3
600	31	4,296	- 7.9		274	27.0
550	31	4,961	-11.9		273	29.3
500	31	5,691	-16.5		271	29.9
450	31	6,471	-22.2		272	32.1
400	31	7,331	-28.3		272	36.7
350	31	8,275	-35.3		277	41.4
300	31	9,331	-43.1		276	48.4
250	31	10,539	-50.9		276	52.1
200	31	11,968	-57.1		276	51.7
175	31	12,811	-57.7		282	45.5
150	31	13,786	-56.5		280	35.6
125	30	14,945	-57.1		276	28.8
100	29	16,353	-57.4		272	22.3
80	28	17,768	-56.8		283	13.4
70	28	18,624	-56.3		283	9.1
60	28	19,596	-55.8		284	5.4
50	27	20,762	-54.5		285	2.7
40	27	22,195	-52.9		332	1.2
30	26	24,054	-51.0		15	1.7
25	24	25,241	-49.2		2	2.3
20	18	26,719	-47.1		332	4.1
15	8	28,666	-42.7			
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NOME, ALASKA 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	1.6	83	50	1.7
1000	31	88	3.0	69	96	2.7
950	31	506	2.2	64	160	6.6
900	31	939	.2	70	183	9.9
850	31	1,395	- 2.0	70	190	11.1
800	31	1,876	- 4.5	66	191	12.2
750	31	2,382	- 7.1	60	194	14.4
700	31	2,917	- 9.8	52	185	14.8
650	31	3,482	-12.9	50	183	16.1
600	31	4,091	-16.5	46	179	16.3
550	31	4,736	-20.5	45	176	16.1
500	31	5,439	-25.0	44	165	17.3
450	31	6,191	-30.1		164	17.3
400	31	7,026	-35.9		153	18.7
350	31	7,940	-42.4		160	16.9
300	31	8,968	-48.2		152	17.7
250	31	10,161	-51.5		174	12.2
200	31	11,607	-51.0		177	10.7
175	31	12,480	-49.4		195	7.6
150	31	13,489	-50.0		190	5.2
125	30	14,677	-50.2		218	6.2
100	30	16,136	-49.9		209	4.5
80	30	17,594	-50.0		186	4.5
70	30	18,470	-50.1		191	1.2
60	30	19,473	-50.0		187	2.1
50	30	20,665	-49.6		184	1.2
40	29	22,124	-49.9		187	1.0
30	28	23,997	-49.6		79	2.9
25	27	25,195	-49.0		107	3.1
20	27	26,663	-48.0		99	5.1
15	27	28,566	-45.8		101	7.2
10	17	31,280	-41.5		108	8.9
7	5	33,845	-35.5			
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NORFOLK, VA. 1018 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	15.0	78	12	.6
1000	31	162	15.4	70	264	2.1
950	31	594	14.0	59	300	6.4
900	31	1,051	11.6	61	307	8.2
850	31	1,528	9.2	59	303	9.1
800	31	2,029	6.9	55	288	11.3
750	31	2,557	4.3	50	282	13.4
700	31	3,116	1.2	47	282	17.3
650	31	3,705	- 1.9	42	278	20.0
600	31	4,342	- 5.5	37	274	21.6
550	31	5,012	- 9.5	38	276	22.7
500	31	5,750	-14.4	40	275	27.2
450	31	6,531	-19.4	40	273	30.1
400	31	7,407	-25.6	38	272	34.6
350	31	8,361	-32.7	38	270	38.9
300	31	9,428	-41.0		270	42.7
250	31	10,642	-50.2		274	47.6
200	31	12,068	-58.7		279	47.6
175	31	12,900	-60.8		277	41.4
150	31	13,860	-60.0		275	35.8
125	31	14,998	-60.2		277	29.3
100	31	16,388	-60.5		279	21.2
80	31	17,783	-59.3		292	10.7
70	31	18,628	-58.1		304	5.2
60	31	19,597	-56.2		[illegible]	2.5
50	31	20,761	-54.4		54	3.1
40	29	22,194	-52.7		85	5.8
30	29	24,062	-50.2		67	5.4
25	27	25,254	-48.2		54	5.1
20	24	26,735	-45.2		20	4.3
15	11	28,675	-41.2			
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NORTH PLATTE, NEBR. 918 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	9.8	86	12	1.2
1000	31	123				
950	31	557				
900	31	1,009	11.5	75	4	.6
850	31	1,488	11.5	62	215	7.6
800	31	1,993	9.9	55	242	10.5
750	31	2,520	6.8	51	257	11.1
700	31	3,090	3.4	50	273	12.6
650	31	3,682	- .8	53	275	16.3
600	31	4,321	- 5.5	52	268	21.0
550	31	4,990	-10.6	52	274	25.1
500	31	5,724	-15.6	43	273	25.5
450	31	6,506	-21.0	37	271	28.6
400	31	7,370	-27.4		270	33.2
350	31	8,317	-34.5		268	38.5
300	31	9,376	-42.9		264	43.5
250	31	10,581	-51.9		262	48.0
200	31	12,000	-59.1		268	52.8
175	31	12,835	-59.6		269	49.4
150	31	13,802	-58.5		274	43.1
125	31	14,948	-58.7		277	32.4
100	31	16,348	-59.4		279	27.6
80	31	17,745	-59.8		277	17.3
70	31	18,589	-59.2		278	13.2
60	31	19,552	-57.5		275	7.8
50	31	20,709	-55.9		307	1.7
40	31	22,135	-54.3		294	1.4
30	31	23,989	-52.1		291	1.9
25	29	25,179	-50.1		285	2.3
20	29	26,645	-47.9		278	3.9
15	29	28,558	-44.7		265	5.2
10	28	31,300	-40.0		275	10.1
7	25	33,760	-36.3		278	12.4
5	22	36,117	-32.0			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	OAKLAND, CALIF.* 1016 MB						OKLAHOMA CITY, OKLA. 970 MB						OLYMPIA, WASH. 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	6	12.2	82	244	3.9	31	392	16.5	84	158	4.7	31	58	5.8	91	197	2.3
1000	31	140	11.6	83	240	4.5	31	132					31	147	8.2	83	202	2.3
950	31	571	9.8	79	259	6.0	31	571	17.5	74	173	10.1	31	570	8.5	71	235	2.1
900	31	1,018	10.5	58	296	7.4	31	1,035	17.3	61	202	15.7	31	1,018	6.6	64	241	3.7
850	31	1,493	9.9	36	293	6.4	31	1,522	15.7	49	213	11.7	31	1,485	4.0	61	234	4.9
800	31	1,995	8.2	31	275	6.2	31	2,034	12.9	46	238	10.5	31	1,975	1.3	54	238	5.6
750	31	2,521	5.1	34	266	6.6	31	2,570	9.8	46	247	11.9	31	2,490	- 1.3	45	240	7.0
700	31	3,085	1.3	38	254	6.4	31	3,143	5.8	46	251	12.4	31	3,039	- 4.4	43	236	9.5
650	31	3,673	- 2.2	33	250	8.2	31	3,741	1.9	46	259	13.0	31	3,614	- 8.2	43	235	11.7
600	31	4,309	- 6.5	34	253	9.9	31	4,387	- 2.6	45	272	14.2	31	4,235	-12.3	44	235	14.6
550	31	4,977	-11.1	33	249	13.8	31	5,062	- 7.8	46	274	15.9	31	4,891	-16.2	34	236	17.7
500	31	5,709	-16.3	36	244	15.5	31	5,805	-12.8	42	271	18.1	31	5,607	-20.9		237	23.1
450	31	6,486	-21.9	33	249	18.5	31	6,597	-18.2	36	266	22.2	31	6,372	-26.4		239	26.4
400	31	7,350	-27.8	34	249	22.0	31	7,471	-24.3	38	269	20.8	31	7,219	-32.5		244	29.1
350	31	8,296	-34.6	32	249	26.0	31	8,430	-31.7	36	269	31.3	31	8,146	-39.5		245	26.6
300	31	9,354	-42.7		252	30.5	31	9,502	-40.0		266	38.5	31	9,183	-47.0		248	28.4
250	31	10,560	-51.6		258	27.4	31	10,722	-49.4		264	44.9	31	10,374	-52.6		253	29.1
200	31	11,982	-58.3		256	27.4	31	12,151	-59.5		262	45.7	31	11,802	-55.9		253	27.4
175	30	12,821	-58.5		251	29.1	30	12,982	-62.2		268	49.4	31	12,654	-55.7		250	25.5
150	30	13,793	-57.3		246	27.8	30	13,933	-61.9		273	43.9	31	13,635	-54.7		246	24.1
125	30	14,946	-57.6		244	25.5	30	15,064	-61.7		276	35.2	31	14,804	-54.0		247	20.4
100	30	16,351	-58.2		245	19.0	30	16,440	-63.6		279	26.2	31	16,235	-54.0		246	16.1
80	28	17,757	-58.9		236	11.3	30	17,807	-63.9		280	13.8	31	17,667	-54.0		246	10.9
70	28	18,599	-58.8		237	7.6	30	18,636	-62.8		280	8.4	31	18,524	-53.8		250	8.0
60	28	19,564	-58.4		260	2.9	30	19,581	-60.2		270	2.7	31	19,514	-53.5		256	5.4
50	26	20,718	-56.5		29	1.7	30	20,724	-58.0		94	4.5	31	20,685	-54.0		266	2.7
40	26	22,139	-54.8		73	4.1	30	22,142	-54.7		78	5.4	29	22,121	-52.9		31	1.7
30	26	23,988	-52.6		58	2.7	28	23,993	-51.6		63	5.8	28	23,979	-51.8		48	5.4
25	26	25,170	-51.0		57	3.3	26	25,179	-49.7		74	4.5	27	25,166	-51.0		48	5.8
20	26	26,629	-48.6		353	2.1	25	26,641	-47.0		97	3.9	24	26,619	-49.4		44	3.5
15	26	28,537	-44.9		294	3.5	20	28,575	-43.3		56	3.5	17	28,499	-47.4		318	1.6
10	22	31,259	-40.2		268	11.7	6	31,393	-37.5									
7	20	33,726	-35.3		266	12.4												
5	10	36,071	-30.9															

Standard pressure surface (mb)	OMAHA, NEBR. 969 MB						PEORIA, ILL. 995 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	403	11.8	85	173	2.3	30	200	10.1	81	149	1.4
1000	31	133					30	155				
950	31	565	12.6	75	209	4.7	30	587	12.6	65	223	5.1
900	31	1,018	12.2	63	238	10.9	30	1,040	11.0	64	249	8.0
850	31	1,497	11.1	54	260	11.7	30	1,515	9.1	60	267	11.5
800	31	2,001	8.5	52	273	13.6	30	2,016	6.9	53	275	13.4
750	31	2,526	5.1	51	283	16.5	30	2,544	4.1	47	275	15.7
700	31	3,092	1.8	47	287	18.1	30	3,102	1.0	41	280	17.1
650	31	3,681	- 2.1	43	287	21.0	30	3,689	- 2.7	39	284	18.8
600	31	4,317	- 6.1	43	284	25.5	30	4,324	- 6.5		287	20.6
550	31	4,984	-10.6	38	286	27.6	30	4,990	-10.8		287	23.1
500	30	5,723	-15.3		283	28.6	30	5,724	-15.5		286	27.4
450	30	6,505	-20.8		279	29.7	30	6,502	-21.0		284	32.6
400	30	7,371	-27.2		279	36.3	30	7,370	-27.4		286	36.3
350	30	8,320	-34.3		278	39.6	30	8,317	-34.4		285	39.6
300	30	9,380	-42.2		279	46.6	30	9,376	-42.5		286	43.3
250	30	10,589	-51.3		275	51.5	30	10,584	-51.3		286	48.8
200	31	12,011	-58.9		274	54.2	30	12,007	-58.4		284	54.4
175	30	12,848	-59.3		278	50.5	30	12,845	-59.0		287	50.9
150	30	13,815	-58.7		278	42.4	30	13,813	-58.1		287	42.0
125	30	14,961	-58.2		282	36.1	30	14,960	-58.4		290	31.9
100	30	16,364	-58.8		286	27.2	30	16,360	-59.4		286	25.5
80	28	17,760	-58.7		283	19.4	30	17,760	-58.6		287	16.5
70	28	18,601	-58.6		284	14.0	30	18,608	-58.0		299	11.3
60	28	19,572	-56.9		284	8.7	30	19,575	-57.1		319	6.0
50	26	20,732	-55.5		283	3.7	30	20,733	-55.5		348	2.9
40	25	22,156	-54.1		287	2.1	30	22,160	-54.0		18	1.4
30	24	24,013	-51.4		289	3.1	30	24,018	-51.5		24	3.1
25	22	25,201	-49.8		309	1.4	30	25,207	-49.7		13	2.7
20	18	26,663	-47.7		292	2.1	30	26,676	-47.2		313	2.9
15	11	28,549	-45.0		288	3.1	28	28,587	-44.1		299	5.1
							27	31,341	-39.1		279	10.3
							24	33,822	-34.2		274	16.5
							19	36,201	-31.2			

Standard pressure surface (mb)	PITTSBURGH, PA. 977 MB						PONAPE, CAROLINE IS. 1004 MB						PORTLAND, ME. 1015 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	353	8.7	82	249	1.6	31	39	24.9	94	113	2.9	31	20	9.4	81	294	1.9
1000	31	160					31	75	25.4	91	104	3.1	31	143	9.7	69	294	3.5
950	31	585	10.7	66	251	4.3	31	521	24.4	83	97	6.6	31	570	9.2	60	304	6.0
900	31	1,037	8.7	64	280	10.9	31	1,002	21.6	82	97	7.0	31	1,016	6.8	59	298	7.2
850	31	1,509	6.6	61	286	15.2	31	1,498	18.9	81	101	7.6	31	1,483	4.3	59	290	8.9
800	31	2,005	4.3	56	283	17.9	31	2,018	16.2	81	98	6.6	31	1,975	1.6	60	281	13.2
750	31	2,523	1.8	46	279	19.0	31	2,562	13.4	80	105	6.8	31	2,491	- 1.2	55	276	17.1
700	31	3,082	- .6	38	280	21.4	31	3,146	10.2	78	106	7.8	31	3,041	- 3.8	47	270	20.6
650	31	3,666	- 3.9		279	24.1	31	3,755	6.8	75	102	7.8	31	3,616	- 6.9	45	270	23.3
600	31	4,299	- 7.6		279	26.8	31	4,416	3.0	75	101	8.2	31	4,244	-10.5	40	266	25.5
550	31	4,965	-11.8		281	29.1	31	5,111	- .7	73	108	4.9	31	4,902	-14.3		265	27.8
500	31	5,696	-16.6		280	32.8	31	5,875	- 5.0	67	104	4.7	31	5,626	-19.0		267	31.9
450	31	6,473	-21.9		281	34.2	31	6,692	- 9.7	60	105	4.9	31	6,396	-24.1		265	33.0
400	31	7,338	-28.2		280	39.1	31	7,600	-15.2	49	72	3.7	31	7,254	-30.5		267	35.4
350	31	8,282	-35.4		280	45.7	31	8,596	-21.8	46	38	2.9	31	8,190	-37.2		266	37.5
300	31	9,337	-43.3		283	50.3	31	9,713	-30.1	45	36	1.9	31	9,238	-44.5		267	43.3
250	30	10,544	-50.9		289	56.7	31	10,984	-40.4		325	4.3	31	10,440	-51.7		275	45.9
200	30	11,975	-57.0		291	59.3	31	12,464	-53.2		293	7.2	31	11,873	-55.0		272	47.4
175	30	12,817	-57.7		291	50.1	31	13,310	-60.4		287	8.4	31	12,726	-54.9		273	42.6
150	29	13,797	-57.2		288	38.3	31	14,253	-68.1		293	9.9	31	13,713	-54.0		268	35.8
125	29	14,949	-57.6		287	32.8	31	15,325	-76.0		288	12.6	30	14,875	-54.5		270	29.1
100	29	16,357	-57.6		289	25.1	28	16,598	-81.1		273	9.7	30	16,304	-54.4		271	22.0
80	29	17,765	-57.8		287	15.0	26	17,856	-78.4		26	2.1	30	17,731	-54.9		270	14.0
70	29	18,608	-57.3		298	9.1	26	18,626	-73.4		73	11.5	30	18,590	-54.4		271	10.3
60	29	19,586	-55.9		333	3.1	26	19,536	-68.9		87	24.9	30	19,575	-54.1		266	7.0
50	28	20,747	-54.9		8	3.1	24	20,640	-63.8		89	40.6	28	20,745	-53.4		270	3.7
40	28	22,179	-53.3		43	2.5	21	22,023	-59.0		93	52.1	27	22,181	-52.6		230	.6
30	27	24,038	-51.0		37	4.9	20	23,852	-52.8		89	60.8	23	24,046	-50.3		72	2.5
25	26	25,230	-49.0		28	3.5	20	25,038	-50.1		90	61.2	20	25,235	-48.5		67	3.5
20	26	26,702	-46.8		355	3.1	20	26,508	-45.6		91	49.7	12	26,720	-45.1		154	1.2
15	26	28,625	-43.3		325	4.3	16	28,428	-41.7		90	19.8	5	28,648	-42.4			
10	25	31,380	-38.6		278	8.0	10	31,211	-39.3									
7	23	33,849	-34.0		277	21.6												
5	19	36,231	-30.6															

Standard pressure surface (mb)	RAPID CITY, S. DAK. 905 MB						ST. CLOUD, MINN. 977 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	966	8.0	80	300	1.4	31	316	8.1	80	306	.6
1000	31	130					31	125				
950	31	561			288	1.9	31	549	9.1	71	272	3.3
900	31	1,012	6.8	59	298	7.2	31	997	7.2	69	258	6.0
850	31	1,486	9.6	58	268	6.4	31	1,466	5.7	66	275	9.1
800	31	1,987	7.4	54	281	8.7	31	1,961	3.9	65	286	12.2
750	31	2,512	4.4	51	282	12.2	31	2,482	1.2	63	284	16.9
700	31	3,074	.6	48	281	15.0	31	3,036	- 1.8	62	281	20.6
650	31	3,657	- 3.5	48	279	20.0	31	3,615	- 5.4	58	282	23.5
600	31	4,292	- 7.8	46	279	23.3	31	4,247	- 9.2	52	287	26.2
550	31	4,954	-12.4	43	277	26.8	31	4,905	-13.9	48	285	29.7
500	31	5,686	-17.2	37	273	30.5	31	5,632	-18.8	42	286	33.4
450	31	6,461	-22.7	37	272	33.0	31	6,400	-24.4	42	284	35.9
400	31	7,321	-29.0		271	36.3	31	7,256	-30.8	42	286	39.8
350	31	8,261	-36.3		271	38.9	31	8,191	-37.8		287	45.1
300	31	9,311	-44.6		271	44.9	31	9,237	-45.1		285	46.4
250	31	10,507	-53.3		270	50.1	31	10,437	-51.4		281	51.3
200	30	11,924	-58.3		266	50.3	31	11,868	-56.0		278	52.3
175	30	12,764	-57.6		267	46.2	31	12,717	-56.0		278	47.0
150	30	13,741	-56.6		268	40.8	31	13,699	-54.9		284	43.1
125	30	14,896	-56.9		275	32.1	31	14,866	-54.7		286	32.1
100	31	16,307	-57.4		276	23.3	31	16,289	-56.0		289	22.5
80	31	17,717	-57.6		277	16.5	31	17,707	-56.0		290	18.5
70	31	18,563	-57.3		274	11.1	31	18,564	-55.3		292	15.3
60	31	19,537	-56.2		288	7.0	30	19,546	-54.7		292	10.1
50	31	20,698	-55.1		305	3.1	30	20,714	-54.0		298	6.0
40	31	22,126	-54.0		336	2.1	30	22,149	-53.3		312	4.5
30	31	23,978	-52.3		334	1.4	30	24,007	-51.7		315	2.9
25	29	25,159	-50.6		339	1.2	29	25,193	-50.2		289	2.5
20	26	26,624	-48.3		338	1.6	29	26,657	-48.1		307	4.5
15	14	28,540	-45.0		290	5.1	27	28,571	-44.9		290	6.0
							24	31,300	-40.6		276	7.2
							22	33,760	-37.4		273	10.5
							18	36,069	-32.9			

Standard pressure surface (mb)	ST. PAUL IS., ALASKA 1010 MB						SALEM, OREG. 1011 MB						SALT LAKE CITY, UTAH 870 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	10	1.6	90	189	2.3	31	61	7.5	89	247	2.1	31	1,288	10.0	61	176	6.0
1000	31	91	1.1	87	218	5.1	31	150	9.4	77	281	1.9	31	115				
950	31	504	- 1.0	83	212	7.6	31	575	8.8	71	324	1.7	31	551				
900	31	933	- 3.1	80	215	7.8	31	1,022	7.3	68	236	2.1	31	1,009				
850	31	1,385	- 4.8	75	213	8.5	31	1,491	4.7	67	226	5.6	31	1,488	14.4	45	171	7.2
800	31	1,861	- 6.3	64	207	8.9	31	1,983	2.7	56	236	8.0	31	1,998	12.3	37	192	7.8
750	31	2,367	- 8.1	56	209	10.3	31	2,500	0.0	53	235	10.1	31	2,537	8.3	39	213	8.9
700	31	2,897	-10.6	56	212	11.1	31	3,053	- 3.3	49	234	13.8	31	3,101	4.0	42	237	10.5
650	31	3,467	-13.2	55	216	11.9	31	3,630	- 6.7	46	235	16.3	31	3,695	- 1.0	46	241	14.2
600	31	4,071	-16.5	50	226	13.0	31	4,257	-10.6	43	238	18.3	31	4,331	- 6.1	52	239	17.1
550	31	4,720	-20.2	44	228	13.6	31	4,916	-15.0		239	20.0	31	5,004	-11.2	51	239	21.0
500	31	5,421	-24.6	42	225	16.9	31	5,636	-19.6		238	23.9	31	5,731	-16.2	45	242	23.9
450	31	6,178	-29.3	39	237	13.6	31	6,402	-25.0		241	24.9	31	6,512	-21.7	38	249	26.0
400	31	7,014	-34.5		239	12.6	31	7,256	-31.3		246	26.8	31	7,373	-27.8	39	249	29.0
350	31	7,935	-40.4		240	14.4	31	8,188	-38.4		249	30.5	31	8,319	-35.0		249	30.7
300	31	8,973	-46.0		246	18.8	31	9,230	-46.1		244	30.7	31	9,375	-43.5		248	33.8
250	31	10,173	-50.1		259	23.5	31	10,424	-52.5		249	32.3	31	10,577	-52.4		254	36.1
200	30	11,626	-50.3		251	21.2	31	11,850	-56.5		249	27.8	31	11,995	-58.7		261	35.8
175	30	12,498	-50.4		246	15.0	31	12,696	-56.8		248	27.0	31	12,833	-59.0		258	36.5
150	30	13,503	-50.7		243	13.0	30	13,671	-55.5		244	27.2	31	13,801	-58.2		260	35.0
125	29	14,686	-51.7		247	10.9	30	14,835	-55.0		243	24.9	31	14,949	-58.1		256	28.4
100	29	16,131	-52.1		241	8.0	28	16,262	-54.7		242	19.2	31	16,351	-59.0		255	22.2
80	29	17,576	-51.9		246	6.6	27	17,686	-54.5		236	13.6	31	17,747	-59.9		255	13.4
70	29	18,453	-51.8		233	4.7	27	18,541	-54.5		235	9.3	31	18,591	-58.7		254	9.9
60	28	19,443	-51.8		229	2.9	27	19,529	-54.3		234	6.2	31	19,553	-58.1		246	4.5
50	28	20,624	-51.7		167	1.9	26	20,693	-54.6		248	1.4	31	20,706	-56.4		321	.6
40	28	22,071	-51.7		117	2.9	26	22,124	-53.8		60	2.1	31	22,130	-54.4		298	1.4
30	27	23,940	-51.4		107	1.4	26	23,980	-52.0		55	3.9	31	23,983	-52.1		338	1.7
25	26	25,122	-51.0		97	2.7	25	25,165	-51.1		60	4.9	30	25,169	-50.7		319	2.9
20	22	26,564	-50.0		93	3.3	21	26,614	-49.9		58	4.1	28	26,632	-48.8		317	3.1
15	18	28,448	-48.3		208	.6	18	28,504	-46.6		297	1.4	24	28,536	-44.4		278	4.5
10	11	31,151	-44.7				6	31,220	-41.3				12	31,259	-40.6			

Standard pressure surface (mb)	SAN ANTONIO, TEXAS 988 MB						SAN DIEGO, CALIF. 1001 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	243	20.5	90	126	3.1	31	124	14.1	85	262	1.4
1000	31	138					31	131			270	1.2
950	31	584	18.7	85	158	10.9	31	561	11.8	82	277	1.4
900	31	1,046	17.1	76	172	15.3	31	1,016	11.2	65	312	1.7
850	31	1,533	15.5	65	174	12.6	31	1,494	12.3	38	283	5.8
800	31	2,046	13.9	48	187	10.3	31	2,002	11.7	28	272	9.3
750	31	2,589	11.3	45	198	6.4	31	2,538	9.1	24	254	12.0
700	31	3,162	8.3	37	253	3.9	31	3,108	5.9	22	243	13.4
650	31	3,767	3.6	37	268	5.8	31	3,705	2.1		240	15.3
600	31	4,415	- .7	40	269	7.8	31	4,352	- 2.3		240	18.8
550	31	5,099	- 5.6	42	267	10.7	31	5,028	- 7.0		236	21.4
500	31	5,846	-10.5	42	267	13.6	31	5,775	-12.1		237	24.7
450	31	6,643	-15.9	42	259	17.5	31	6,564	-18.0		237	28.2
400	31	7,524	-21.9	39	270	19.0	31	7,442	-24.8		239	31.3
350	31	8,497	-28.9		277	25.5	31	8,400	-32.3		240	36.1
300	31	9,581	-37.4		276	30.3	31	9,468	-40.6		243	41.6
250	31	10,813	-47.5		277	38.3	31	10,687	-49.6		246	45.3
200	31	12,251	-58.5		275	47.6	31	12,120	-57.5		251	50.9
175	31	13,082	-62.6		277	51.7	31	12,958	-60.1		249	48.9
150	31	14,029	-64.1		275	47.6	31	13,919	-60.2		246	44.5
125	31	15,142	-65.4		274	34.0	31	15,054	-60.9		244	33.4
100	31	16,490	-67.9		277	19.6	31	16,439	-61.7		241	22.5
80	31	17,826	-69.3		287	6.4	30	17,812	-63.9		232	7.6
70	31	18,637	-67.2		70	2.7	30	18,637	-63.0		222	3.3
60	31	19,569	-62.9		79	8.0	30	19,586	-60.4		95	1.4
50	31	20,708	-58.3		92	9.1	30	20,729	-57.5		80	4.1
40	31	22,123	-55.5		88	9.3	29	22,147	-54.7		80	5.1
30	31	23,976	-51.6		81	13.0	26	24,004	-51.0		82	9.1
25	29	25,166	-49.1		83	13.4	22	25,190	-48.8		85	11.9
20	23	26,650	-46.2		83	13.4	20	26,669	-45.9		89	8.9
15	17	28,571	-43.4				6	28,554	-42.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1963

SAN JUAN, P. R. 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	24.1	85	106	3.5
1000	31	139	23.6	84	98	9.9
950	31	585	21.0	80	97	14.0
900	31	1,053	18.1	77	100	13.4
850	31	1,541	15.3	73	100	12.0
800	31	2,054	12.7	67	96	9.5
750	31	2,590	10.2	61	88	8.2
700	31	3,165	7.4	54	93	6.4
650	31	3,771	4.0	50	102	3.3
600	31	4,419	.3	48	105	1.0
550	31	5,105	-3.7	39	281	2.7
500	31	5,859	-8.0	35	272	6.0
450	31	6,664	-13.1		266	10.5
400	31	7,560	-19.1		273	13.8
350	31	8,539	-26.1		268	20.2
300	31	9,636	-34.4		268	29.0
250	30	10,884	-44.1		266	38.1
200	30	12,344	-55.3		267	46.0
175	30	13,184	-61.2		268	47.2
150	30	14,127	-67.0		274	44.7
125	29	15,213	-71.5		276	33.0
100	29	16,524	-72.9		283	17.7
80	29	17,837	-70.6		352	2.1
70	29	18,647	-66.7		73	8.4
60	28	19,576	-62.5		78	17.5
50	28	20,711	-59.1		87	23.3
40	28	22,120	-55.8		89	28.2
30	26	23,964	-51.4		94	35.2
25	26	25,156	-48.3		91	32.8
20	25	26,636	-44.9		90	30.7
15	24	28,569	-42.3		86	32.1
10	20	31,341	-37.6		92	29.5
7	13	33,793	-33.9		91	21.6
5	7	36,158	-32.0			

SANTA MONICA, CALIF. 1011 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	14.4	83	41	1.4
1000	31	132	14.0	83	117	1.0
950	31	561	12.4	80	132	1.9
900	31	1,017	11.1	73	9	1.2
850	31	1,494	11.3	50	304	3.3
800	31	2,000	10.2	31	274	6.0
750	31	2,533	7.7	24	253	7.2
700	31	3,100	4.5		252	10.3
650	31	3,696	1.1		250	13.2
600	31	4,338	-3.3		246	16.3
550	31	5,012	-8.2		244	17.7
500	31	5,754	-13.5		240	20.6
450	31	6,537	-19.4		240	24.7
400	31	7,413	-25.9		241	27.4
350	31	8,366	-33.3		243	30.5
300	31	9,430	-41.7		245	33.6
250	31	10,642	-50.6		247	41.0
200	31	12,070	-58.0		250	45.7
175	31	12,907	-59.4		250	42.0
150	31	13,870	-59.5		247	36.7
125	31	15,009	-60.4		244	31.7
100	31	16,394	-61.6		245	22.5
80	31	17,774	-62.9		235	10.1
70	31	18,601	-62.8		225	6.0
60	31	19,551	-60.6		170	1.2
50	31	20,694	-57.8		91	4.3
40	31	22,111	-55.0		77	4.1
30	31	23,962	-51.9		77	7.4
25	31	25,149	-49.7		86	6.8
20	31	26,618	-47.2		91	3.5
15	29	28,532	-44.0		67	.8
10	19	31,282	-39.6		268	4.3
7	6	33,799	-36.4			

SAULT STE. MARIE, MICH. 991 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	4.2	83	351	1.4
1000	31	143				
950	31	562	6.6	62	262	6.6
900	31	1,006	4.6	58	277	9.7
850	31	1,470	2.5	57	282	10.1
800	31	1,958	.2	56	281	12.2
750	31	2,474	-2.2	53	283	14.4
700	31	3,020	-4.5	47	287	16.3
650	31	3,599	-7.6	45	293	17.9
600	31	4,219	-11.1	44	292	21.0
550	31	4,879	-15.1	44	293	23.1
500	31	5,597	-19.8	42	292	24.9
450	31	6,365	-25.4	37	296	27.6
400	31	7,215	-31.8		290	30.3
350	31	8,146	-38.6		289	33.0
300	31	9,189	-45.9		290	35.6
250	31	10,385	-52.1		287	41.0
200	31	11,819	-54.7		286	45.7
175	31	12,673	-54.4		287	42.7
150	31	13,665	-53.0		288	35.8
125	31	14,839	-53.2		285	28.4
100	31	16,274	-54.1		285	24.1
80	31	17,704	-54.2		285	16.5
70	31	18,564	-53.8		280	12.4
60	31	19,552	-53.5		289	10.3
50	31	20,724	-53.5		296	7.6
40	31	22,161	-52.7		287	5.4
30	31	24,028	-50.5		300	3.7
25	30	25,220	-49.1		306	3.3
20	30	26,689	-47.5		351	1.7
15	29	28,604	-44.8		300	1.6
10	28	31,348	-39.6		286	3.1
7	23	33,823	-35.0		283	5.4
5	19	36,175	-30.3			

SHEMYA, ALASKA 1004 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	3.8	91	223	6.6
1000	31	67			225	8.4
950	31	481	1.3	87	232	11.3
900	31	917	-.5	82	239	11.9
850	31	1,373	-2.0	73	240	13.4
800	31	1,854	-3.6	68	248	14.6
750	31	2,360	-6.1	67	247	15.7
700	31	2,900	-9.0	63	249	19.6
650	31	3,468	-11.9	59	249	19.4
600	31	4,080	-15.5	54	250	21.6
550	31	4,728	-19.2	51	250	24.5
500	31	5,436	-23.5	49	253	26.4
450	31	6,195	-28.2	48	260	30.5
400	31	7,038	-33.6	49	261	35.8
350	31	7,963	-39.7		259	39.1
300	31	9,003	-45.5		266	43.1
250	31	10,205	-50.0		259	41.2
200	31	11,659	-51.2		259	35.8
175	31	12,527	-50.9		257	29.9
150	31	13,530	-51.2		257	28.2
125	31	14,713	-51.9		259	24.1
100	31	16,156	-52.3		253	18.3
80	31	17,598	-52.4		248	11.5
70	31	18,473	-52.1		244	9.9
60	31	19,461	-51.4		245	7.6
50	31	20,647	-50.9		249	6.4
40	29	22,092	-51.2		255	3.1
30	27	23,963	-50.9		252	4.3
25	25	25,156	-50.3		278	4.7
20	21	26,603	-49.8		306	1.0
15	14	28,516	-48.0		286	2.9

SHREVEPORT, LA. * 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	18.5	87	156	2.9
1000	31	157	18.9	82	160	4.9
950	31	602	18.9	59	197	11.5
900	31	1,063	17.3	54	214	9.5
850	31	1,549	15.5	47	231	8.0
800	31	2,061	12.6	45	244	8.0
750	31	2,598	9.4	38	253	6.8
700	31	3,168	5.8	34	274	4.7
650	31	3,769	2.0	31	274	5.4
600	31	4,411	-2.4	34	283	6.8
550	31	5,096	-6.8	31	285	11.1
500	31	5,835	-11.1	27	284	15.2
450	31	6,634	-16.5	23	278	18.3
400	31	7,513	-22.6	23	281	21.8
350	31	8,479	-30.0	24	281	25.5
300	31	9,558	-38.5	26	286	31.7
250	31	10,785	-48.2		284	38.9
200	31	12,220	-58.7		283	46.0
175	31	13,051	-62.4		286	45.1
150	30	14,003	-62.2		287	38.5
125	30	15,128	-63.3		287	32.1
100	30	16,496	-64.7		286	24.7
80	29	17,850	-65.6		295	14.0
70	29	18,673	-64.6		317	7.0
60	29	19,611	-61.2		53	4.1
50	29	20,751	-58.2		73	7.0
40	28	22,165	-55.1		81	6.8
30	28	24,017	-51.4		78	9.3
25	28	25,207	-49.2		77	9.7
20	28	26,680	-46.1		77	10.5
15	27	28,600	-42.6		79	8.4
10	25	31,374	-37.8		82	6.8
7	15	33,840	-33.8		111	6.0

SPOKANE, WASH. 932 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	6.9	72	154	3.7
1000	31	133				
950	31	562				
900	31	1,009	9.5	61	171	4.1
850	31	1,482	7.8	52	222	4.7
800	31	1,979	4.0	54	232	5.1
750	31	2,497	.1	56	239	6.6
700	31	3,050	-3.4	51	246	8.9
650	31	3,627	-6.9	45	246	12.2
600	31	4,252	-10.9	45	249	16.3
550	31	4,911	-15.3	42	250	18.1
500	31	5,629	-20.2	41	248	21.4
450	31	6,394	-25.7	44	246	27.2
400	31	7,244	-31.9	43	248	29.5
350	31	8,174	-39.0		249	33.0
300	31	9,214	-46.5		252	37.9
250	31	10,407	-52.7		254	36.5
200	31	11,833	-56.4		256	35.2
175	31	12,682	-55.5		257	31.3
150	31	13,669	-53.7		252	26.8
125	31	14,841	-53.8		254	22.2
100	31	16,275	-53.6		256	20.2
80	31	17,711	-53.4		258	12.4
70	31	18,566	-53.5		253	8.7
60	31	19,563	-53.3		263	5.2
50	30	20,739	-53.1		294	2.5
40	30	22,181	-52.0		19	3.3
30	29	24,050	-50.9		40	6.8
25	29	25,239	-49.9		57	7.0
20	27	26,712	-47.3		64	7.0
15	17	28,630	-44.7		63	2.7

SWAN ISLAND, W. I. 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	26.0	79	69	8.0
1000	31	122	25.3	79	68	10.9
950	31	572	22.1	78	76	12.6
900	31	1,041	19.2	74	82	12.0
850	31	1,532	16.5	67	85	10.1
800	31	2,046	13.6	62	85	7.8
750	31	2,589	11.0	56	85	6.8
700	31	3,162	8.1	47	83	5.6
650	31	3,768	5.0	35	79	5.1
600	31	4,420	1.9	27	39	3.1
550	31	5,110	-2.1		347	3.1
500	31	5,868	-6.5		319	5.1
450	31	6,679	-11.9		315	6.4
400	31	7,577	-17.6		315	8.7
350	31	8,563	-24.8		299	13.0
300	31	9,665	-33.3		292	18.8
250	31	10,919	-43.4		280	23.5
200	31	12,383	-54.8		273	32.8
175	31	13,224	-61.1		275	33.8
150	30	14,167	-67.1		279	30.1
125	29	15,253	-72.3		289	22.5
100	29	16,555	-75.2		325	12.4
80	29	17,848	-74.1		47	9.3
70	29	18,642	-69.6		86	14.2
60	29	19,565	-64.9		93	17.9
50	29	20,691	-59.8		86	24.7
40	29	22,099	-55.7		86	31.7
30	28	23,947	-51.4		91	34.0
25	28	25,137	-49.1		95	34.0
20	28	26,611	-46.1		91	32.4
15	20	28,541	-42.9		86	32.4

TAMPA, FLA. 1018 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	20.3	92	78	3.9
1000	31	163	20.8	83	79	3.1
950	31	604	19.5	69	47	1.4
900	31	1,071	17.3	63	206	.8
850	31	1,558	14.2	66	195	.8
800	31	2,067	11.1	62	120	.6
750	31	2,599	7.9	57	27	.8
700	31	3,171	4.9	50	283	1.4
650	31	3,766	1.6	43	294	2.5
600	31	4,414	-1.7	36	294	5.2
550	31	5,095	-5.5	31	303	7.6
500	31	5,844	-10.1	30	297	10.5
450	31	6,646	-15.5		294	12.2
400	31	7,528	-21.9		300	15.2
350	31	8,497	-29.2		299	19.0
300	31	9,579	-37.7		293	22.2
250	31	10,809	-47.6		296	24.5
200	31	12,244	-58.4		291	28.0
175	31	13,076	-62.0		292	31.3
150	31	14,024	-63.4		293	30.3
125	31	15,139	-65.6		296	26.0
100	30	16,490	-67.3		308	15.3
80	30	17,833	-66.7		339	6.2
70	30	18,652	-64.0		4	5.8
60	30	19,596	-60.3		52	8.4
50	29	20,742	-57.3		84	10.7
40	29	22,163	-53.8		92	11.9
30	28	24,030	-49.8		92	14.6
25	26	25,233	-47.2		89	14.4
20	22	26,719	-44.1		89	14.8
15	6	28,711	-39.3			

TATOOSH IS., WASH * 3/ 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	9.1	87	144	2.9
1000	31	147	9.1	78	163	3.3
950	31	568	7.4	68	196	3.3
900	31	1,014	5.3	60	211	4.5
850	31	1,479	2.6	50	215	6.0
800	31	1,967	.1	43	211	8.4
750	31	2,477	-2.7	37	220	9.3
700	31	3,025	-5.8	34	219	11.7
650	31	3,595	-9.3	35	226	12.8
600	31	4,216	-13.4	33	229	14.4
550	31	4,866	-17.7	33	232	15.9
500	31	5,580	-22.6	28	235	18.5
450	31	6,336	-27.9	32	236	22.3
400	31	7,181	-33.8	32	241	25.8
350	31	8,104	-40.4	32	246	30.3
300	31	9,139	-47.3		248	34.6
250	31	10,328	-52.6		248	36.5
200	31	11,758	-55.4		249	31.5
175	31	12,610	-54.9		248	29.1
150	30	13,604	-54.2		248	25.6
125	30	14,776	-53.7		246	21.2
100	29	16,207	-53.3		248	16.9
80	28	17,652	-53.6		247	11.5
70	28	18,519	-53.3		244	9.7
60	28	19,503	-53.3		255	6.8
50	27	20,674	-53.5		274	3.1
40	27	22,112	-52.5		49	1.4
30	26	23,980	-51.4		46	3.1
25	26	25,165	-50.8		62	5.8
20	25	26,620	-49.5		55	4.1
15	25	28,516	-46.8		45	4.7
10	23	31,218	-41.7		39	6.2
7	20	33,679	-35.3		60	5.1
5	9	36,082	-29.3			

TOPEKA, KANS. 985 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	13.9	87	151	3.5
1000	31	138				
950	31	572	15.0	69	172	6.0
900	31	1,030	13.6	61	200	5.1
850	31	1,511	12.0	51	263	6.4
800	31	2,017	9.4	49	274	9.1
750	31	2,544	6.3	51	274	12.2
700	31	3,112	2.9	49	272	16.1
650	31	3,703	-.8	49	277	18.8
600	31	4,343	-5.1	46	280	22.7
550	31	5,016	-9.7	42	282	23.5
500	31	5,750	-14.6		282	25.3
450	31	6,533	-20.3		281	29.7
400	31	7,402	-26.4		277	33.8
350	31	8,354	-33.1		277	39.1
300	31	9,417	-41.9		276	43.3
250	31	10,628	-51.1		275	49.7
200	31	12,050	-59.7		273	54.6
175	31	12,882	-61.1		277	52.5
150	31	13,841	-60.0		279	42.9
125	31	14,980	-60.1		281	34.4
100	31	16,370	-61.0		281	25.8
80	30	17,754	-61.3		281	16.3
70	29	18,592	-59.7		281	11.1
60	29	19,553	-58.4		287	5.2
50	29	20,704	-56.7		328	2.1
40	28	22,121	-54.9		339	1.6
30	28	23,970	-52.1		353	.8
25	27	25,153	-50.0		309	1.0
20	26	26,615	-47.4		291	3.7
15	22	28,515	-44.8		289	5.8
10	19	31,241	-39.8		278	10.3
7	17	33,697	-35.6		256	20.0
5	13	36,042	-32.1			

TRUK, CAROLINE IS. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	2	26.7	88	81	1.7
1000	31	79	26.6	86	91	2.7
950	31	526	24.3	84	96	5.2
900	31	1,007	21.5	82	106	5.2
850	31	1,502	18.8	82	109	5.6
800	31	2,022	16.1	79	115	6.4
750	31	2,572	13.4	76	111	6.8
700	31	3,150	10.3	74	111	5.2
650	31	3,767	6.9	72	102	4.7
600	31	4,420	3.2	70	103	4.5
550	31	5,116	-.8	69	90	3.5
500	31	5,879	-5.2	68	112	1.7
450	31	6,694	-10.0	62	97	2.5
400	31	7,602	-15.4	52	50	1.9
350	31	8,597	-22.0	45	18	1.6
300	31	9,713	-30.4	42	10	2.3
250	31	10,982	-40.7		345	4.5
200	31	12,462	-53.0		322	4.3
175	31	13,309	-60.0		319	3.3
150	31	14,254	-67.8		293	5.2
125	31	15,331	-75.0		300	10.9
100	30	16,604	-80.9		294	7.6
80	29	17,861	-78.1		83	7.4
70	28	18,632	-73.6		92	14.6
60	28	19,545	-68.8		98	24.3
50	28	20,649	-63.7		96	40.2
40	28	22,034	-58.6		96	49.9
30	26	23,867	-52.9		96	55.2
25	26	25,051	-49.9		95	60.2
20	25	26,520	-46.0		96	50.3
15	18	28,458	-41.0		97	20.8
10	13	31,221	-39.7			

TUCSON, ARIZ. 923 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	789	17.5	23	156	6.6
1000	31	95				
950	31	539				
900	31	1,008	21.9	22	178	4.3
850	31	1,501	19.4	21	263	2.3
800	31	2,019	15.8	23	228	4.7
750	31	2,556	11.8	23	216	8.7
700	31	3,135	7.6	25	218	13.0
650	31	3,732	3.3	29	223	16.7
600	31	4,385	-1.2		222	20.6
550	31	5,064	-6.1		226	22.9
500	31	5,813	-11.1		236	25.5
450	31	6,605	-16.7		242	27.8
400	31	7,490	-23.2		244	31.9
350	31	8,453	-30.7		247	34.8
300	31	9,528	-39.3		248	40.8
250	31	10,751	-48.9		252	45.7
200	31	12,184	-58.1		258	56.7
175	31	13,017	-61.3		257	49.9
150	31	13,972	-61.8		253	44.5
125	31	15,099	-62.7		250	35.2
100	30	16,469	-64.4		247	25.1
80	30	17,826	-66.0		238	8.9
70	30	18,649	-64.2		203	3.3
60	30	19,589	-60.8		115	2.5
50	30	20,732	-57.7		83	5.2
40	29	22,148	-54.2		73	7.2
30	29	24,009	-50.5		86	9.7
25	29	25,204	-47.9		85	12.2
20	28	26,684	-44.9		92	10.7
15	27	28,620	-41.3		81	7.2
10	25	31,390	-36.4		81	8.9
7	16	33,875	-32.0		108	6.2
5	5	36,277	-25.9			

WAKE IS., PACIFIC AREA 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	25.9	83	71	15.2
1000	31	132	24.8	83	74	18.3
950	31	579	21.3	83	81	19.6
900	31	1,050	18.3	83	90	18.5
850	31	1,538	15.5	78	94	15.3
800	31	2,052	13.4	67	96	12.4
750	31	2,589	10.9	52	93	10.5
700	31	3,167	7.9	43	95	8.2
650	31	3,770	4.6	36	94	5.2
600	31	4,423	.6	36	75	1.9
550	31	5,111	-3.1		310	1.4
500	31	5,866	-7.6		285	4.1
450	31	6,672	-12.8		288	7.8
400	31	7,567	-18.7		286	11.1
350	31	8,550	-25.5		284	16.9
300	31	9,648	-34.0		277	24.5
250	31	10,899	-43.9		272	31.9
200	31	12,360	-54.9		273	42.0
175	31	13,202	-61.1		275	43.9
150	31	14,145	-67.0		277	38.7
125	29	15,232	-71.7		284	28.2
100	29	16,538	-74.4		296	13.4
80	28	17,840	-72.0		36	5.2
70	28	18,635	-67.8		76	9.1
60	28	19,571	-63.6		84	14.2
50	28	20,699	-60.2		87	22.3
40	27	22,102	-57.0		90	27.4
30	26	23,942	-52.1		89	32.8
25	26	25,129	-49.5		90	32.1
20	26	26,600	-46.2		83	33.2
15	26	28,527	-42.6		84	33.4
10	25	31,277	-40.4		92	28.8
7	21	33,738	-37.1		98	23.7
5	15	36,073	-33.6		85	28.6

WASHINGTON, D. C. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	84	10.7	81	253	.8
1000	31	161	12.0	72	257	1.7
950	31	595	12.3	60	292	6.8
900	31	1,043	9.8	62	294	9.9
850	31	1,517	7.5	60	293	14.0
800	31	2,014	5.3	55	292	17.7
750	31	2,543	3.2	50	285	18.1
700	31	3,096	.1	44	279	19.6
650	31	3,686	-3.2	37	275	21.2
600	31	4,315	-6.9		276	23.9
550	31	4,987	-11.0		275	25.8
500	31	5,715	-15.8		276	29.3
450	31	6,502	-21.1		276	32.6
400	31	7,361	-27.2		274	35.8
350	31	8,309	-34.4		273	39.4
300	31	9,369	-42.5		274	44.1
250	31	10,577	-50.9		276	50.5
200	31	12,003	-58.1		276	50.3
175	31	12,841	-59.3		276	42.9
150	31	13,808	-58.3		280	34.8
125	31	14,952	-58.9		275	28.6
100	29	16,355	-59.2		281	22.5
80	28	17,755	-58.4		287	13.2
70	28	18,609	-57.5		289	8.0
60	28	19,572	-56.2		298	3.7
50	28	20,733	-55.2		325	2.9
40	28	22,162	-53.8		12	2.9
30	28	24,021	-51.0		30	1.7
25	27	25,216	-48.8		342	2.1
20	24	26,678	-46.9		284	5.6
15	15	28,583	-43.2		276	11.7
10	15	31,350	-36.9		272	21.6
7	13	33,863	-32.2		276	26.6
5	11	36,249	-28.1			

WINNEMUCCA, NEV. 869 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,310	8.7	70	160	1.2
1000	31	123				
950	31	556				
900	31	1,015				
850	31	1,491	11.1	54	238	1.7
800	31	1,996	8.8	51	251	4.3
750	31	2,523	5.0	53	254	6.0
700	31	3,086	1.0	54	248	9.1
650	31	3,673	-3.3	57	241	11.3
600	31	4,306	-7.7	55	233	16.1
550	31	4,970	-12.1	49	237	18.3
500	31	5,700	-17.0	46	241	18.5
450	31	6,475	-22.6	43	238	20.2
400	31	7,335	-29.0	41	240	23.3
350	31	8,276	-36.0	38	244	25.8
300	31	9,328	-44.1		246	29.9
250	31	10,527	-52.6		251	29.7
200	31	11,945	-58.4		250	29.5
175	31	12,784	-58.2		243	30.5
150	31	13,756	-57.2		245	28.4
125	31	14,910	-57.3		245	25.3
100	30	16,316	-57.9		244	21.2
80	30	17,723	-57.9		251	10.3
70	30	18,569	-58.6		262	5.2
60	30	19,536	-57.2		262	2.1
50	28	20,696	-56.0		358	.8
40	26	22,120	-54.2		44	1.7
30	25	23,975	-52.1		24	2.5
25	18	25,162	-50.6		330	2.5
20	18	26,626	-47.7		323	2.7
15	[illegible]	28,529	-44.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

MAY 1963

Standard pressure surface (mb.)	WINSLOW, ARIZ. 852 MB						YAKUTAT, ALASKA 1014 MB						YUCCA FLAT, NEV. 880 MB						YUMA, ARIZ. 994 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,492	9.9	32	200	4.3	31	12	4.6	92	96	3.1	30	1,196	8.9	38	188	2.5	30	131	18.5	29	41	2.1
1000	30	132					31	126	6.3	85	99	3.9	30	114					30	82				
950	30	568					31	545	5.2	70	123	6.6	30	544					30	524	23.4	26	279	6.2
900	30	1,026					31	987	2.5	64	133	8.0	30	1,002					30	997	21.3	19	269	6.4
850	30	1,511	11.2	29	200	4.3	31	1,447	- .5	64	134	9.3	30	1,487	15.5	26	218	2.3	30	1,488	18.6	17	233	7.9
800	30	2,023	14.8	21	241	8.9	31	1,929	- 3.6	64	137	10.3	30	1,998	12.7	25	207	8.0	30	2,004	15.1	13	217	9.9
750	30	2,560	11.0	24	241	13.2	31	2,434	- 7.1	66	130	10.5	30	2,525	8.6	26	219	10.5	30	2,541	11.3	18	209	11.7
700	30	3,135	6.5	27	236	15.7	31	2,971	-10.6	67	128	10.3	30	3,101	4.1	28	210	9.1	30	3,118	7.3	17	212	15.3
650	30	3,732	1.8	29	228	16.5	31	3,536	-13.7	63	135	8.7	29	3,693	- .5	30	216	10.7	30	3,718	3.1	19	220	17.9
600	30	4,378	- 3.0		225	18.7	31	4,143	-17.1	61	143	8.7	29	4,334	- 4.9	32	208	12.2	30	4,365	- 1.4	20	222	18.8
550	30	5,055	- 7.7		230	21.2	31	4,790	-20.9	59	152	8.5	29	5,003	- 9.8	35	221	15.7	30	5,045	- 6.5	24	228	22.3
500	30	5,796	-12.8		229	23.7	31	5,490	-25.4	54	153	10.3	29	5,742	-14.3		230	19.4	30	5,789	-11.8	24	233	26.4
450	30	6,583	-18.6		238	24.5	31	6,241	-30.6	51	148	9.1	29	6,522	-19.9		229	23.3	30	6,580	-17.5	27	235	29.7
400	30	7,459	-25.0		241	29.1	31	7,075	-36.5		144	11.1	29	7,395	-26.7		228	25.■	30	7,459	-24.2	28	236	36.5
350	30	8,415	-32.1		246	33.2	31	7,989	-42.5		135	11.9	29	8,344	-33.7		233	27.■	30	■,418	-31.7	32	239	43.9
300	30	9,485	-40.4		250	41.6	31	9,015	-49.0		127	12.8	29	9,406	-42.0		234	30.7	30	9,488	-40.1	32	240	49.4
250	30	10,703	-49.8		251	48.0	31	10,199	-52.7		135	10.1	28	10,609	-51.1		240	35.0	30	10,708	-49.3		241	57.1
200	30	12,132	-58.5		252	51.3	31	11,641	-51.3		130	4.1	28	12,037	-57.1		245	38.3	30	12,140	-57.9		246	62.8
175	30	12,966	-60.7		251	48.0	31	12,511	-50.3		183	1.9	28	12,879	-58.0		245	37.7	30	12,975	-60.4		247	58.7
150	29	13,928	-60.6		248	43.5	31	13,518	-50.2		260	2.1	28	13,851	-57.8		246	32.8	27	13,925	-60.1		244	52.1
125	29	15,061	-61.0		250	33.4	31	14,706	-50.9		282	2.5	27	15,003	-58.3		247	28.2	22	15,059	-61.0		241	36.7
100	29	16,441	-63.5		246	22.5	30	16,157	-51.3		297	2.1	27	16,403	-59.4		251	24.1	18	16,444	-62.5		236	29.0
80	27	17,802	-64.2		240	13.6	30	17,606	-51.3		272	2.1	27	17,795	-60.2		254	14.0	17	17,816	-64.7		227	16.3
70	27	18,632	-63.1		236	6.8	30	18,478	-51.2		310	2.1	27	18,624	-60.1		277	7.6	15	18,633	-63.8		219	5.8
60	27	19,574	-60.7		218	1.9	30	19,475	-51.0		320	2.1	27	19,593	-58.9		323	2.1	14	19,579	-61.4		67	3.5
50	27	20,717	-57.9		82	2.1	30	20,661	-51.■		7	1.0	25	20,745	-55.5		105	.6	14	20,720	-58.0		103	8.5
40	25	22,134	-55.0		83	3.3	30	22,113	-50.8		154	1.2	25	22,173	-53.6		6	2.3	13	22,136	-55.5		85	10.1
30	23	23,982	-51.9		65	5.4	30	23,992	-49.4		72	1.4	25	24,034	-50.9		350	2.5	12	23,988	-51.8		79	15.7
25	20	25,177	-49.6		82	6.2	30	25,189	-48.6		77	1.9	25	25,226	-48.6		329	2.3	12	25,177	-49.2		97	14.2
20	16	26,652	-46.8		103	4.7	29	26,661	-47.4		76	4.1	23	26,702	-46.1		308	5.4	12	26,649	-46.5		99	8.7
15	10	28,588	-42.9				26	28,577	-45.4		66	6.0	16	28,609	-43.1				11	28,572	-44.2		80	8.0
10							24	31,291	-41.0		75	12.0							7	31,305	-39.6			
7							15	33,707	-37.5		92	16.1												

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning May 21, 1963
2/ beginning May 28, 1963
3/ beginning April 26, 1963

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. MAY 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A M 78.7°	75.7°	70.7°	60.0°	*	P M 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
May									
1	----	----	0.69	0.97	----	1.16	0.97	0.82	----
2	0.81	0.90	1.04	1.20	1.38	1.17	1.03	.91	0.81
3	.90	.98	1.12	1.27	1.44	1.21	(1.04)	(.88)	----
4	.85	.96	1.07	1.24	1.39	1.17	.99	.85	.76
5	.79	.91	1.06	1.21	1.37	----	----	----	----
6	.76	.87	.99	1.14	1.37	1.19	1.02	.91	.79
7	.84	.95	1.05	1.19	----	----	----	----	----
8	.72	.83	.96	----	----	----	----	----	----
9	----	.74	.91	1.11	----	----	----	----	----
10	.71	.82	.93	1.07	----	----	----	----	----
12	.84	.94	1.05	1.17	1.34	1.10	.94	.83	.71
13	----	----	----	----	1.36	----	----	----	----
14	.87	.98	----	----	----	----	----	----	----
16	.76	.84	.99	1.18	1.37	1.16	1.04	.92	.78
17	.69	.79	.92	1.08	1.33	1.08	.92	.78	.66
18	(.42)	(.62)	(.78)	(.93)	(1.19)	(1.01)	(.87)	(.76)	(.61)
19	.77	.86	----	1.12	----	----	----	----	----
25	.77	.85	.99	1.15	----	----	.99	----	----
26	----	----	1.08	1.21	1.38	1.11	----	----	----
27	.73	.81	.95	1.13	1.35	1.15	.97	----	----
28	.79	.88	1.01	1.16	1.35	----	----	----	----
30	.66	.77	.91	1.05	----	----	----	.81	.74
31	.75	.85	.97	1.09	1.36	1.13	.98	.87	.78
Averages	0.78	0.87	0.98	1.14	1.37	1.15	0.99	0.86	0.75

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
May									
1	----	----	----	----	----	1.08	0.81	0.65	0.50
3	0.82	0.91	1.11	1.27	1.41	1.13	.90	.75	.60
4	.71	.77	.89	1.06	----	----	----	----	----
6	.77	.87	.99	1.16	1.39	1.23	1.00	.87	.74
7	.70	.79	1.08	1.23	1.36	----	----	----	----
12	.77	----	----	----	----	1.13	.96	.84	.75
13	.82	.90	1.04	1.21	1.39	----	----	----	----
17	.49	.60	.77	----	----	----	----	----	----
19	----	----	----	1.05	1.33	----	----	----	----
21	.79	.87	.99	1.15	----	----	----	----	----
23	----	----	----	----	1.42	1.17	1.00	.87	.77
24	.84	.94	1.06	1.20	1.35	1.12	.87	.71	.62
25	.75	.84	.96	1.13	----	.95	.79	.66	.58
26	.62	.71	.84	.99	----	----	----	----	----
27	.75	.87	1.01	1.16	1.39	1.21	1.04	.90	.72
28	.83	.89	1.01	1.20	----	----	----	----	----
31	.35	.44	.59	.75	----	----	.81	.63	.54
Averages	0.72	0.80	0.95	1.12	1.38	1.13	0.91	0.76	0.65

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observation due to cloudiness								

MADISON, WIS.

Date	Sun's zenith distance: A M. 78.7°	75.7°	70.7°	60.0°	*	P. M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
May									
13	----	----	----	----	S 1.34	S 1.18	S 0.98	S 0.82	S 0.75
18	----	0.80	0.94	1.10	----	----	----	----	----
23	M 0.78	M 0.86	S .96	S 1.23	----	----	----	----	----
24	M .54	M .66	M .80	M 1.03	----	----	----	----	----
30	S .75	S .84	S .98	S 1.12	----	----	----	----	----
Averages	0.69	0.79	0.92	1.12	1.34	1.18	0.98	0.82	0.75

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
May									
1	0.80	0.90	1.00	1.20	----	----	----	----	0.80
2	.90	1.00	1.10	1.30	----	----	----	----	.80
3	.90	1.00	1.10	1.30	----	----	----	1.00	.90
4	.80	.90	1.00	----	----	----	1.10	1.00	.90
5	.90	1.00	1.10	1.20	----	----	----	----	.80
6	.80	.90	1.00	----	----	----	----	----	.30
7	.70	.90	1.00	----	----	----	----	----	----
11	.70	.80	.90	----	----	----	1.00	.90	.70
12	.80	.90	1.00	----	----	----	1.00	.90	.80
15	----	----	----	----	----	----	----	----	.70
16	.80	.90	1.00	1.20	----	----	----	.80	.70
17	.80	.90	1.00	----	----	----	----	----	----
18	.80	.90	1.00	----	----	----	----	----	----
25	.90	1.00	1.10	1.30	----	----	----	----	----
26	.90	1.00	1.10	1.20	----	----	1.10	.90	.80
27	.90	1.00	1.10	----	----	----	----	----	----
28	----	----	1.00	1.20	----	----	----	.90	.80
29	----	1.00	1.00	----	----	----	----	1.00	----
30	.80	.90	----	1.30	----	----	----	----	----
31	----	----	1.00	----	----	----	----	----	----
Averages	0.83	0.88	1.00	1.20	----	----	1.00	0.90	0.80

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
May									
10	----	----	----	----	1.12	HM 0.80	HM 0.59	HM 0.42	HM 0.29
13	HS 0.57	HS 0.68	HS 0.84	HS 1.03	HS 1.22	HS .92	HS .67	HS .50	HS .36
17	----	HS .46	HS .69	----	HS 1.40	----	----	----	----
18	----	----	----	HS .96	----	----	----	----	----
20	HS .65	HS .73	HS .86	HS 1.01	----	----	----	----	----
22	HS .59	HS .63	HS .80	HS .98	HS 1.21	HS 1.01	HS .81	HS .67	----
28	----	----	----	----	----	----	----	HM .54	----
29	HM .59	HM .66	HM .74	HM .87	----	----	----	----	----
Averages	0.60	0.63	0.79	0.97	1.24	0.91	0.69	0.53	0.33

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
May									
1	----	----	1.31	1.42	1.53	----	----	----	----
8	0.99	1.09	1.22	1.36	----	----	----	----	----
9	1.03	1.12	1.24	1.37	----	----	----	----	----
16	1.00	1.09	1.20	1.34	----	----	----	----	----
18	1.04	1.13	1.23	----	----	----	----	----	----
20	1.04	1.14	1.30	1.35	----	----	----	----	----
27	1.01	----	----	----	----	----	----	----	----
Averages	1.02	1.11	1.25	1.37	1.53	----	----	----	----

( ) Clouds present
S Slight haze - indeterminable
M Moderate haze - indeterminable
HS Slight haze
HM Moderate haze
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8 No. 2, page 63 of this publication

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MAY 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	615	740	756	754	685	738	723	726	489	670	604	782	746	683	238	769	756	---	---	---	501	642	560	592	671	771	779	745	700	695	793	676
AMES IOWA	668	301	283	---	---	---	---	---	---	---	---	---	---	---	---	---	---	688	---	---	385	739	722	585	386	214	202	217	710	678	717	---
ANNETTE ALASKA	364	628	673	602	373	119	117	502	541	663	700	703	98	271	563	627	720	678	627	700	666	155	575	530	779	842	601	210	407	237	365	504
APALACHICOLA FLORIDA	699	375	470	704	673	610	660	659	690	604	645	442	653	478	630	601	637	558	648	689	568	611	441	423	628	603	693	619	294	590	572	586
ASTORIA OREGON	736	---	---	140	336	228	606	763	563	629	515	669	753	428	657	771	767	738	679	706	484	557	582	253	523	402	787	797	403	315	455	560
ATLANTA GEORGIA	763	729	723	719	717	630	697	672	575	678	697	417	112	400	633	626	588	711	606	369	600	699	479	737	440	99	377	455	451	585	643	569
BARROW ALASKA	307	380	450	342	452*	454	422	485	390	382	392	454	442	428	490	466	471	608	606	614	424	548	363	509	488	665*	761	781	505	506	464	485
BISMARCK N.DAK.	633	676	554	400	516	604	463	347	310*	170*	65	51	504	702	577*	533	645	523	506	328	534	753	738	730	691	163	663	477	736	559	421	502
BLUE HILL MASS.	483	66	717	676	345	706	721	402	462	207	186	592	717	437	421	705	494	77	711	561	700	642	648	753	724	582	767	650	174	392	693	529
BOISE IDAHO	633	208	183	432	534	303	236	491	371	522	501	710	484	679	557	758	743	732	757	751	725	583	571	715	785	760	754	774	642	702	393	580
BOSTON MASSACHUSETTS	458	70	706	659	372	700	709	369	489	195	163	477	692	449	411	703	501	71	724	566	699	611	624	749	704	605	757	586	186	379	675	518
BROWNSVILLE TEXAS	296	468	546	432	208	133	305	561	503	518	481	647	666	673	674	586	559	471	611	525	512	553	287	562	684	688	652	599	545	682	717	527
CANTON ISLAND P.I.	573	593	561	595	453	604	568	476	557	560	593	573	568	514	547	563	565	527	545	472	536	457	553*	553	530	542	534*	543	525	496	565	543
CAPE HATTERAS N.C.	252	749	680	457	424	327	495	678	670	655	467	692	679	271*	657	126	585	678	694	435	103	654	122	773	514	143	471	624	552	240	583	498
CARIBOU MAINE	89	105	125	---	697	717	600	209	499	672	330	695	674	214	676	694	653	521	271	224	642	312	404	750	717	727	717	622	202	146	729	488
CHARLESTON S.C.	752	752	624	676	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	220*	506	143	176	421	530	425	442	618	---
COLUMBIA MISSOURI	750	653	619	203	609	607	641	680	671	511	645	603	549	674	---	176	316	712	249	767	670	805	792	214	107	427	438	315	769	736	739	555
DAVIS CALIFORNIA	671	718	670	433	717	524	502	159	508	275	547	756	483	734	754	752	734	710	722	600	298	388	656	735	738	760	745	475	716	708	471	602
DODGE CITY KANSAS	---	---	---	---	---	---	---	---	---	---	583	708	720	554	492	530	741	128	114	595	159	256	139	506	411	395	419	727	345	587	517	---
E. LANSING MICHIGAN	717	693	541	361	710	680	561	552	278	93	704	579	299	491	326	645	371	621	543	680	473	439	745	671	578	726	471	249	234	735	771	533
EL PASO TEXAS	764	784	782	778	788	706	710	767	741	754	682	793	783	663	433	761	746	740	597	490	709	667	642	544	728	726	761	645	772	710	821	709
ELY NEVADA	759	679*	---	709	752	671	335	536	630	755	549	659	---	518*	651	804	794	716	643	569	672	---	324	495	526	437	700	543	668	686	---	621
EPPLEY,NEWPORT R.I.	562	85	673	644	532	678	693	440	314	447	180	629	710	346	556	674	641	95	673	410	557	660	632	708	737	477	725	648	130	571	690	533
FAIRBANKS ALASKA	353	312	456	250	609	319	300	632	427	417	519	536	408	569	440	430	676	683	637	676	680	654	726	727	714	657	---	---	735	600	476	538
FLAMING GORGE UTAH	426	666	509	---	---	---	---	221	746	737	736	484	765	657	616	716	732	739	670	---	---	364	375	591	336	763	697	482	735	575	553	596
FORT WORTH TEXAS	399	412	536	693	421	186	688	701	492	670	663	565	606	663	694	623	684	706	595	509	424	92	557	314	524	677	698	708	698	275	---	549
FRESNO CALIFORNIA	720	702	692	689	698	582	495	499	761	595	629	762	622	484	745	731	750	691	721	734	730	653	525	468	659	670	521	345	663	722	565	639
GAINESVILLE FLORIDA	985	425	230	536	700	589	615	528	644	604	505	545	416	496	377	510	557	560	577	574	414	377	468	451	626	487	507	467	390	663	570	529
GLASGOW MONTANA	210	572	288	518	405	529	288	579	119	225	93	278	539	458	519	660	635	448	708	723	726	753	748	715	413	607	372	587	743	693	713	512
GRAND JUNCTION COLO.	550	783	733	714	797	669	522	319	677	747	747	826	805	539	832	765	833	797	786	834	622	730	473	603	571	844	776	707	739	771	764	706
GREAT FALLS MONTANA	511	371	340	340	428	467	417	377	133	596	99	---	---	665	609	678	677	237	724	652	733	727	718	533	353	687	501	691	689	710	558	525
GREENSBORO N.C.	730	751	728	701	659	648	565	628	673	580	638	389	310	513	636	300	170	711	680	490	324	655	755	702	377	183	142	218	301	617	600	528
GRIFFIN EXP.STA.GA.	817	800	768	787	771	726	751	668	676	711	725	309	183	282	079	666	721	690	640	407	703	721	512	779	568	176	524	516	511	720	704	620
INDIANAPOLIS INDIANA	773	722	665	614	302	749	730	655	704	346	519	198	496	772	189	358	170	753	655	799	733	733	801	750	694	623	109	440	561	819	812	589
INYOKERN CALIFORNIA	818	815	824	827	817	---	577	623	852	867	885	875	856	830	875	870	866	781	766	852	773	775	761	867	840	843	591	746	868	830	776	805
LAKE CHARLES LA.	---	441	611	615	585	537	541	677	540	582	629	551	616	640	692	689	487	510	334	365	525	357	653	526	503	635	649	383	558	663	607	557
LANDER WYOMING	433	653	632	656	638	456	532	301	716	639	647	570	675	490	533	594	711	618	524	743	717	313	485	582	424	766	616	737	432	693	510	582
LARAMIE WYOMING	471	252	532	336	575	531	453	226	586	609	543	667	706	486	598	348	689	639	479	641	625	381	289	511	459	545	686	569	548	569	369	513
LAS VEGAS NEVADA	736	733	746	750	745	692	652	424	771	777	788	784	671	765	775	768	758	776	706	710	642	627	729	743	766	706	574	725	772	669	558	711
LITTLE ROCK ARKANSAS	607	539	492	516	408	554	---	---	---	430	469	613	490	513	587	618	608	644	607	402	543	115	630	444	299	604	363	547	679	552	679	520
LOS ANGELES CALIF.	495	559	326	530	689	670	502	601	551	713	724	718	696	704	658	640	410	254	178	554	341	459	402	460	471	400	248	261	704	400	177	500
LOS ANGELES CALIF. U	547	529	251	377	739	679	535	652	562	714	800*	770*	726	724	755	720	591	266	175	525	279	380	310	297	399	379	257	186	333	284	158	481
MANHATTAN KANSAS	619	376	473	475	365	472	625	620	630	414	520	435	670	510	397	131	648	268	143	570	272	687	354	33	107	259	441	559	528	444	214	428
MATANUSKA ALASKA	589	601	576	383	596	186	216	500	229	247	240	402	386	450	488	541	586	646	480	685	688	323	267	495	740	674	691	705	681	215	325	478
MAUNA LOA OB.HAWAII	824	805	836	532	460	370	313	624	552	493	335	415	269	266	208	356	328	403	449	406	623	683	704	477	533	485	409	475	453	428	381	480
MEDFORD OREGON	428*	248	344	312	266	134	393	422	592	366	311	546	660	646	716	720	704	699	722	633	382	370	409	757	756	754	767	740	735	745	723	548
MIAMI FLORIDA	331	180	84	591	571	710	697	665	726	688	688	687	531	598	687	704	710	580	691	514	273	483	398	441	681	574	442	631	498	469	555	551
MIDLAND TEXAS	520	690	709	644	568	600	658	659	672	696	673	675	633	635	616	639	610	431	684	460	277	135	206	391	701	718	721	627	452	473	611	574
NASHVILLE TENNESSEE	729	647	603	601	612	645	673	648	613	379	252	587	126	519	374	458	342	674	027	413	602	232	735	362	110	119	370	204	558	676	656	489
NORTH OMAHA NEBRASKA	676	288	482	461	358	416	593	621	642	692	123	422	739	399	248	93	733	705	448	628	672	773	661	308	162	151	271	556	607	670	397	484
OAK RIDGE TENNESSEE	659	621	632	624	530	618	624	603	540	518	619	516	142	458	423	420	271	586	026	445	511	443	685	487	94	69	200	293	554	671	620	487
OKLAHOMA CITY OKLA.	567	245	531	618	259	552	646	677	614	651	620	429	424	615	530	527	683	652	---	500	561	169	186	215	415	478	690	671	615	305	197	495
PAGE ARIZONA	597	676	676	647	684	---	514	269	727	634	725	720	651	---	---	673	662	666	574	547	428	498	485	640	677	618	625	636	674	601	640	613
PHOENIX ARIZONA	698	718	735	729	733	696	664	617	539	550	737	745	727	632	695	725	722	722	494	667	689	501	529	743	766	757	679	733	764	759	622	680

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NOTE: The above data for this page for March 1963 are in error - data for dates 1-15 should be for 17-31; 17-Avg. should be for 1-16. Column under 16th is the Avg.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MAY 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PORTLAND MAINE	395	129	621	650	239	706	697	202	567	407	145	541	700	467	521	---	687	117	676	375	709	498	468	758	734	716	250	632	288	356	723	499
PROSSER WASHINGTON	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	776	769	543	776	---
RAPID CITY S.DAK.	559	494	608	459	642	524	453	482	469	663	84	422	694	466	397	518	689	438	659	638	738	731	603	671	488	205	544	582	640	486	397	530
RIVERSIDE CALIFORNIA	539	560	304	581	725	719	627	643	673	676	761	770	692	764	755	716	712	385	517	638	456	570	566	648	660	619	327	261	313	503	410	584
SAINT CLOUD MINN.	691	356	507	537	641	484	585	469	322	463	158	74	255	325	652	649	680	632	400	444	295	660	575	554	667	243	153	134	492	568	291	450
SALT LAKE CITY UTAH	513	687	750	693	750	642	217	319	632	756	575	573	739	523	710	793	813	803	809	820	721	595	368	450	491	822	789	579	633	620	782	644
SAN ANTONIO TEXAS	122	213	494	509	311	239	641	429	578	647	588	523	472	677	586	442	554	466	349	435	594	397	466	375	600	649	588	502	603	558	558	489
SANTA MARIA CALIF.	726	727	707	448	728	694	399	511	553	591	764	769	745	747	760	753	467	205	294	297	249	234	145	285	228	227	108	323	427	560	531	490
SAULT STE MARIE MICH	784	692	581	540	825	874	292	454	827	287	---	507	150	257	721	750	519	272	187	846	---	---	799	783	754	763	718	337	202	753	699	578
SAYVILLE NEW YORK	---	204	537	515	479	536	566	454	197	388	203	410	537	386	521	542	468	89	564	350	260	521	558	596	621	245	588	434	79	477	563	430
SEATTLE WASH. UNIV.	265	553	518	352	205	276	442	455	618	651	564	542	685	501	372	696	690	683	677	685	766	342	547	413	85*	---	141*	692	621	204	483	491
SEATTLE TACOMA WASH.	305	499	669	313	186	242	650	660	641	672	531	712	730	519	545	725	---	715	720	734	726	418	489	442	540	666	735	731	701	332	490	568
SHREVEPORT LOUISIANA	580	480	580	645	576	522	578	678	424	636	656	623	548	679	680	605	---	595	582	346	568	291	723	596	565	694	459	519	723	579	703	581
SPOKANE WASHINGTON	542	537	408	311	312	116	241	377	521	439	729	510	832	698	606	735	926	724	753	746	741	731	698	574	739	654	741	740	745	673	568	602
STATE COLLEGE PENN.	194	742	708	657	310	728	706	595	434	591	609	759	436	461	541	729	243	351	755	285	367	618	648	770	443	452	503	96	351	556	768	529
STERLING VIRGINA	257	734	724	694	621	705	729	628	504	589	619	655	549	336	729	623	148	574	705	545	136	550	729	768	700	531	377	252	243	670	700	559
STILLWATER OKLAHOMA	590	257*	603	627*	465	614	668	694	653	672	618	441	398	619	548	500*	693	526	327	658	433	286	252	226	447	419	703	721	600	273	202	508
SWAN ISLAND W.I.	684	691	691	691	685	639	587	648	435	698	662	705	704	684	606	628	554	508	709	695	677	604	688	660	699	693	594	547	565	675	662	644
TAMPA FLORIDA	379	498	247	658	743	717	625	650	659	614	705	564	570	575	665	586	688	676	677	600	651	716	618	592	513	706	617	473	548	579	667	606
TUCSON ARIZONA	723	753	746	745	747	698	723	694	582	656	738	757	674	663	467	739	725	734	531	654	694	620	539	505	772	775	760	745	776	776	711	691

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month MAY 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	17	163	143	213	273	280	186	275	79	134	12	152	375	324	407	370	388	137	412	267	425	426	423	407	144	253	240	443	464	321	437	277

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

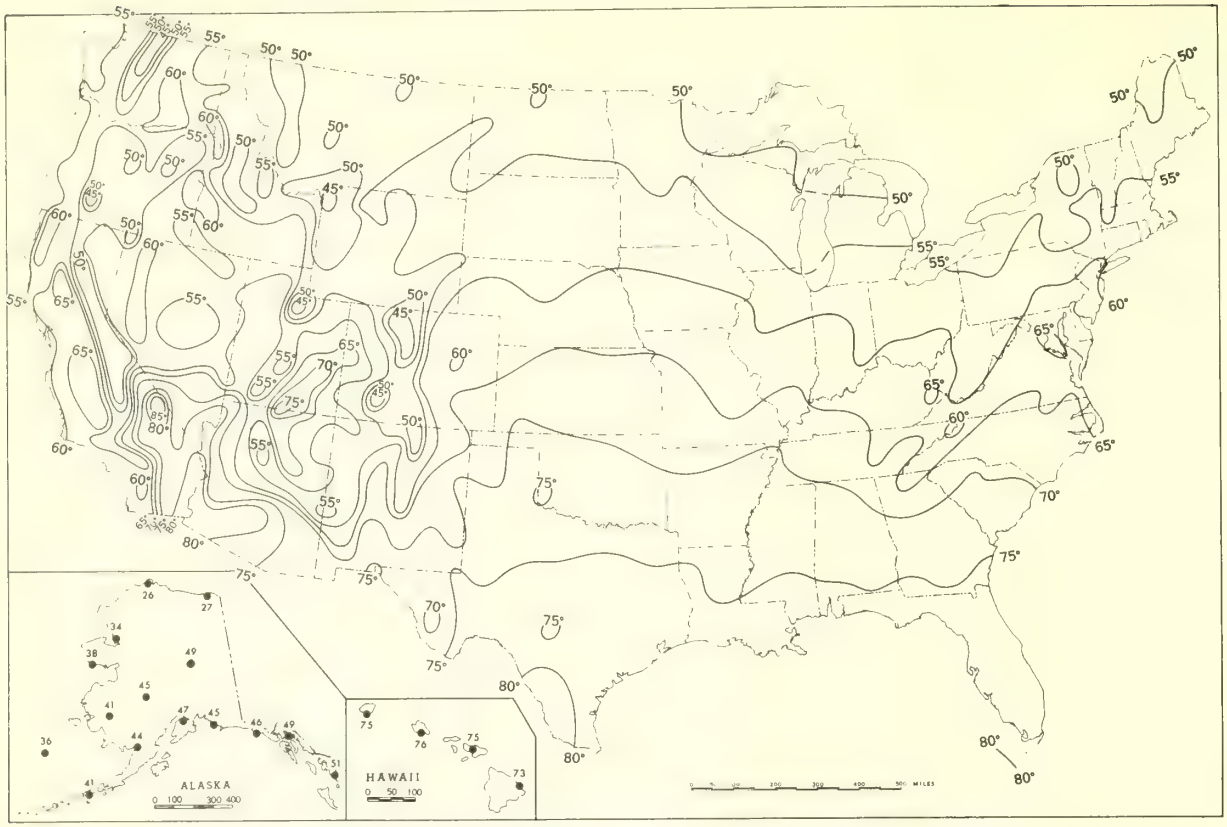
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code ₄s Ω Ω Ω defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units Milli-atmo-cms.

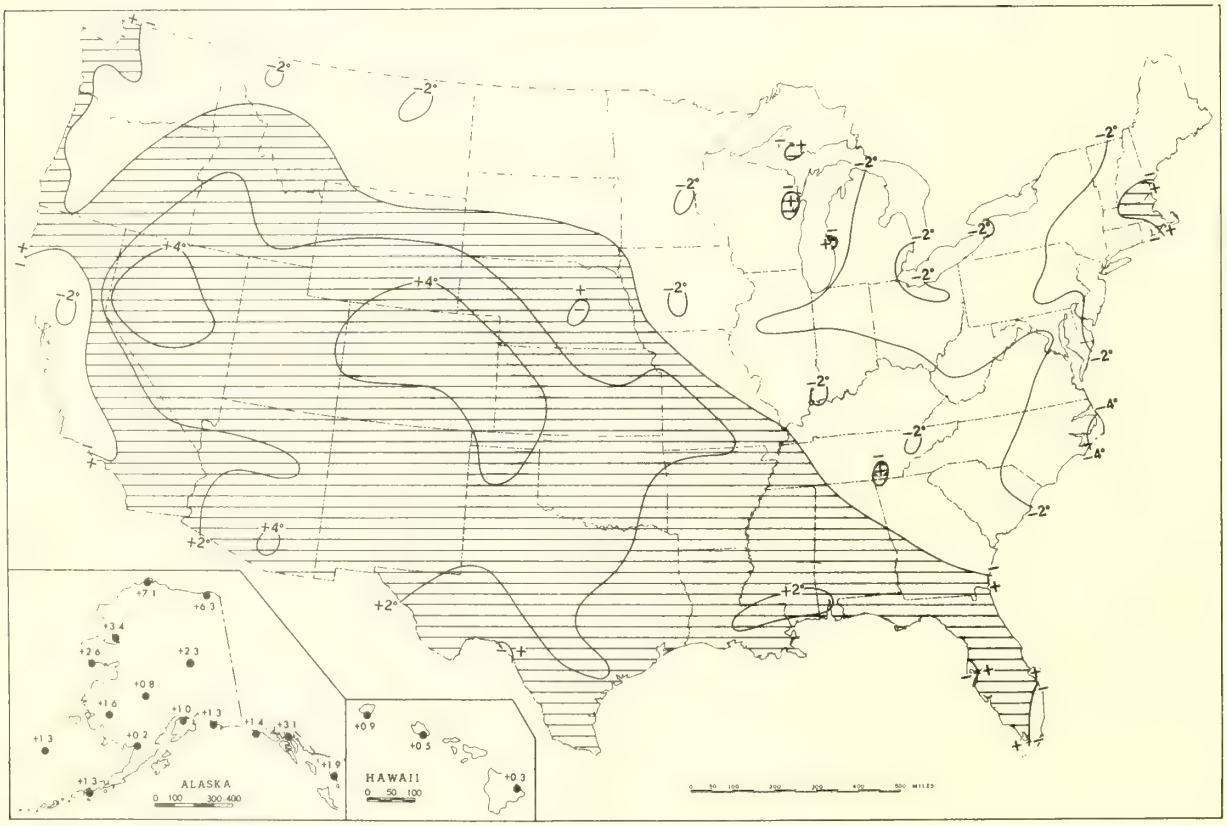
Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean O_3
Bismarck, N. Dak.	00397	00459	00392	05327	00385	00343	00348	04330	05385	05350	3637■	-----	35367	00361	00371	00358	06429	00405	06408	05459	05446	00396	00400	00364	00362	05370	00360	00410	00357	00375	34372	382
Caribou, Maine	-----	05493	04466	00408	00405	00441	00461	06405	00444	00353	04343	00400	00424	05442	00410	00405	00404	00398	00387	06408	05374	05402	00477	00423	00411	00423	00401	00347	04393	05411	00379	411
Green Bay, Wis.	00388	35392	00428	04414	00372	00386	00363	00343	05341	05379	00347	35326	00341	35383	35407	00377	33410	00438	35419	00420	36489	05490	00430	00450	00396	00387	00380	06424	00411	00385	00375	395
Mauna Loa, Hawaii	00305	-----	00293	-----	-----	-----	-----	00317	00311	-----	-----	00290	-----	-----	-----	00302	00292	00288	-----	00281	-----	-----	00286	-----	00306	-----	00289	-----	-----	-----	-----	297
Midland, Texas	00298	00333	00309	00295	06298	00313	00300	00304	00292	00282	00296	00279	00282	03277	04266	00302	00299	05313	00315	05305	05307	05330	05311	35287	00294	00298	00299	00301	00311	00292	06298	300
Nashville, Tenn.	00387	00390	00375	00366	00337	00361	00366	00332	00344	00322	04341	00305	05339	00312	00343	00328	-----	00343	00355	04374	00366	05374	00398	00370	-----	-----	-----	-----	00366	00355	00349	354
Sterling, Va.	05440	00382	00381	00391	00349	33354	00387	35357	05319	33336	00316	00325	00309	35350	00354	36365	36426	00350	00344	36358	35391	00347	36387	00396	-----	-----	35404	J■386	36352	36374	00370	366

The spectrophotometer measures the total amount of ozone in the atmosphere, i e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station The amount of ozone in this column (coded Ω Ω Ω) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code ₄s designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, May 1963.



B. Departure of Average Temperature from Normal (°F.), May 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

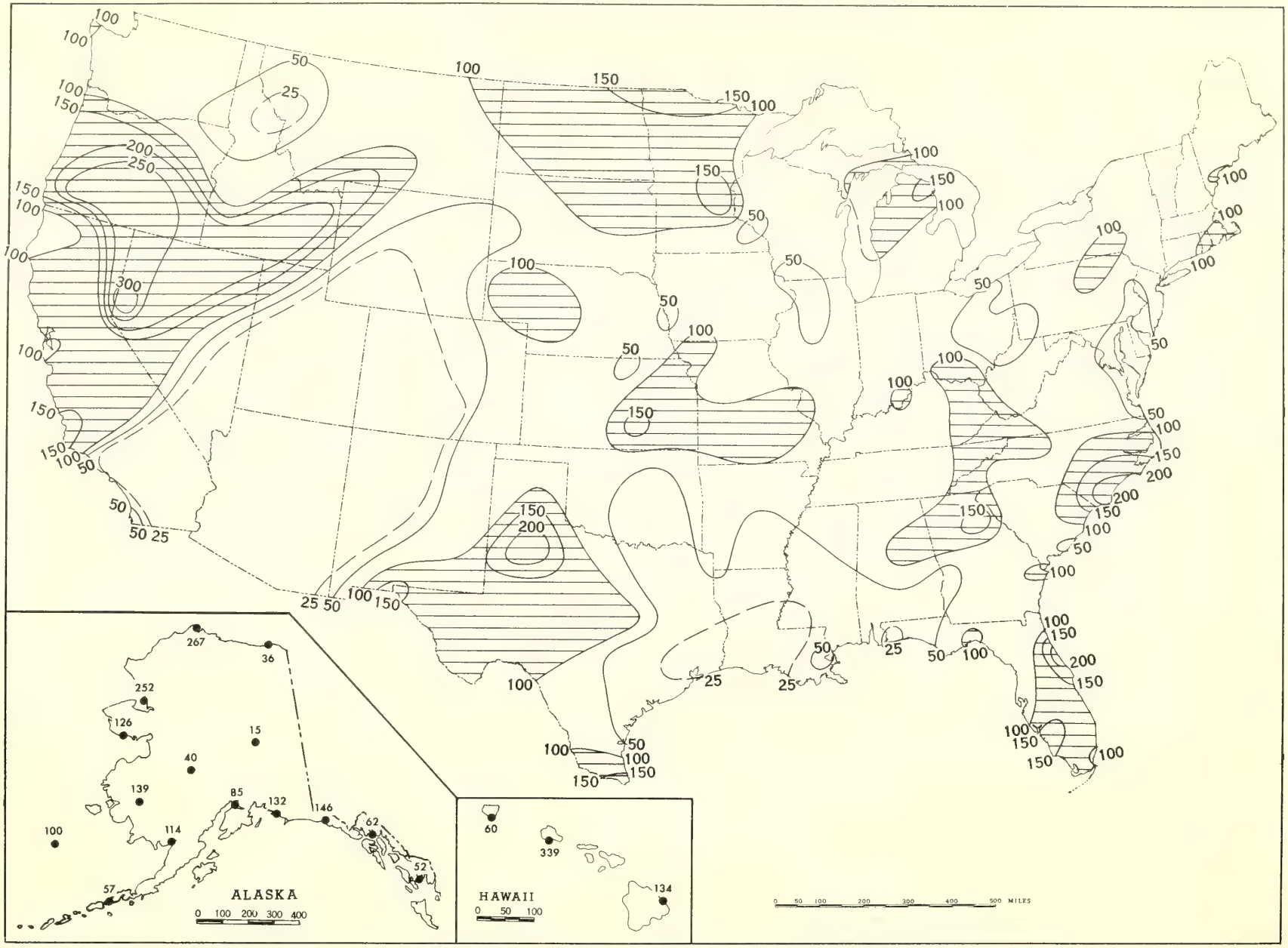
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), May 1963.



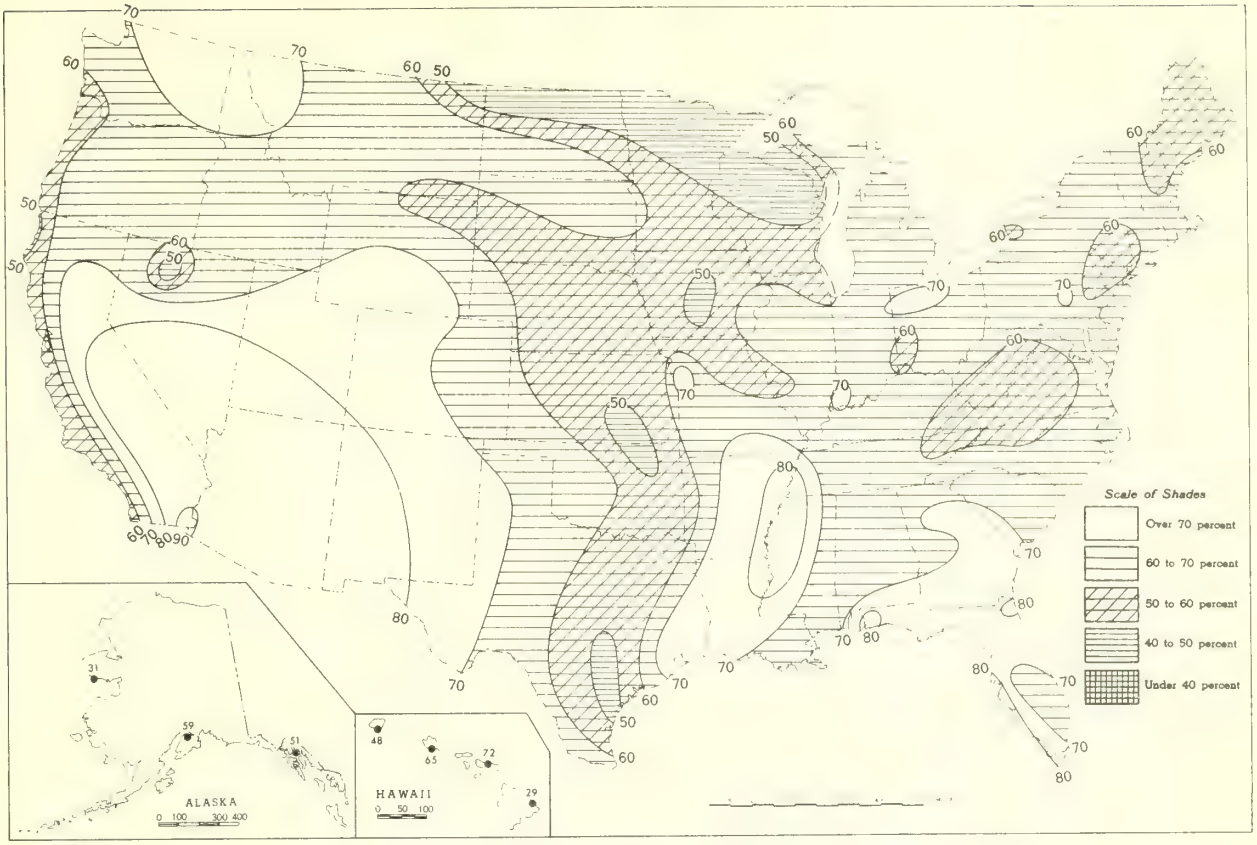
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, May 1963.

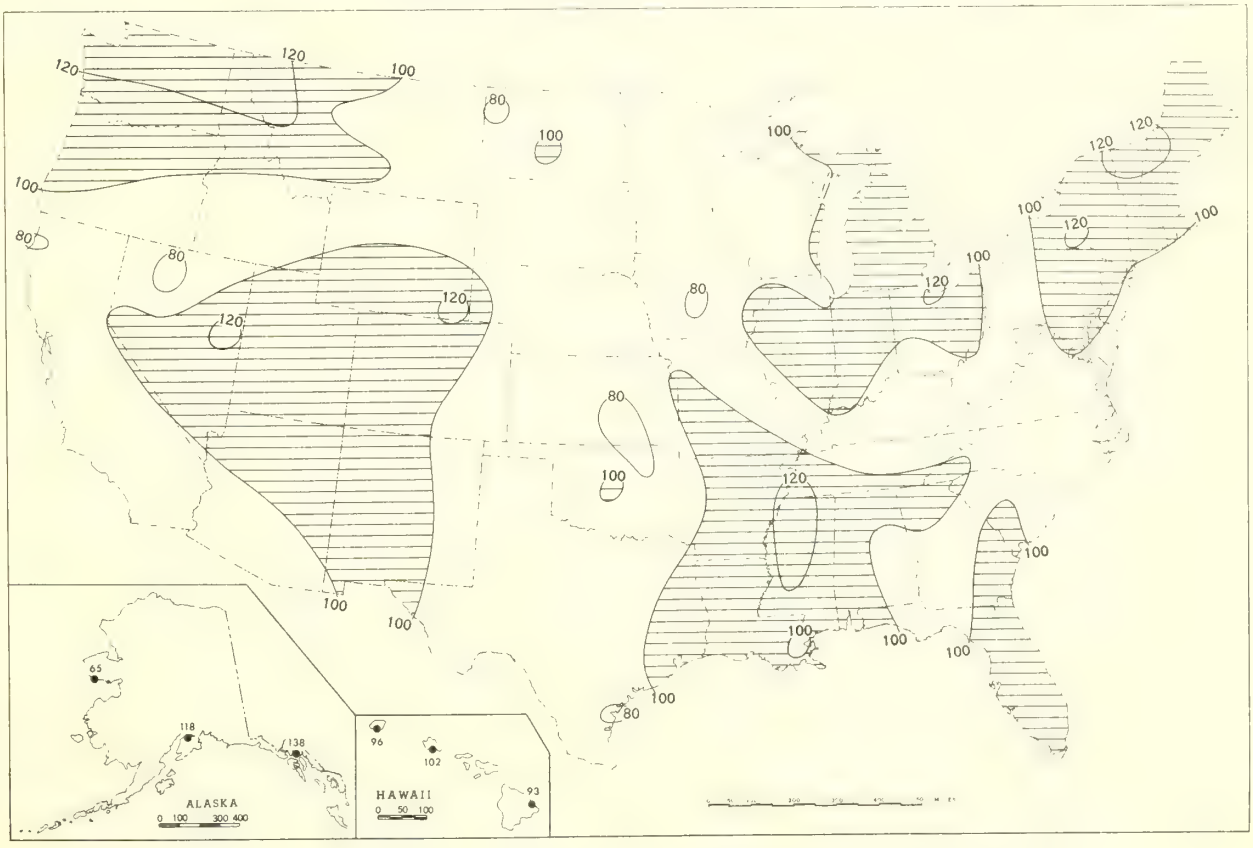


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, May 1963.

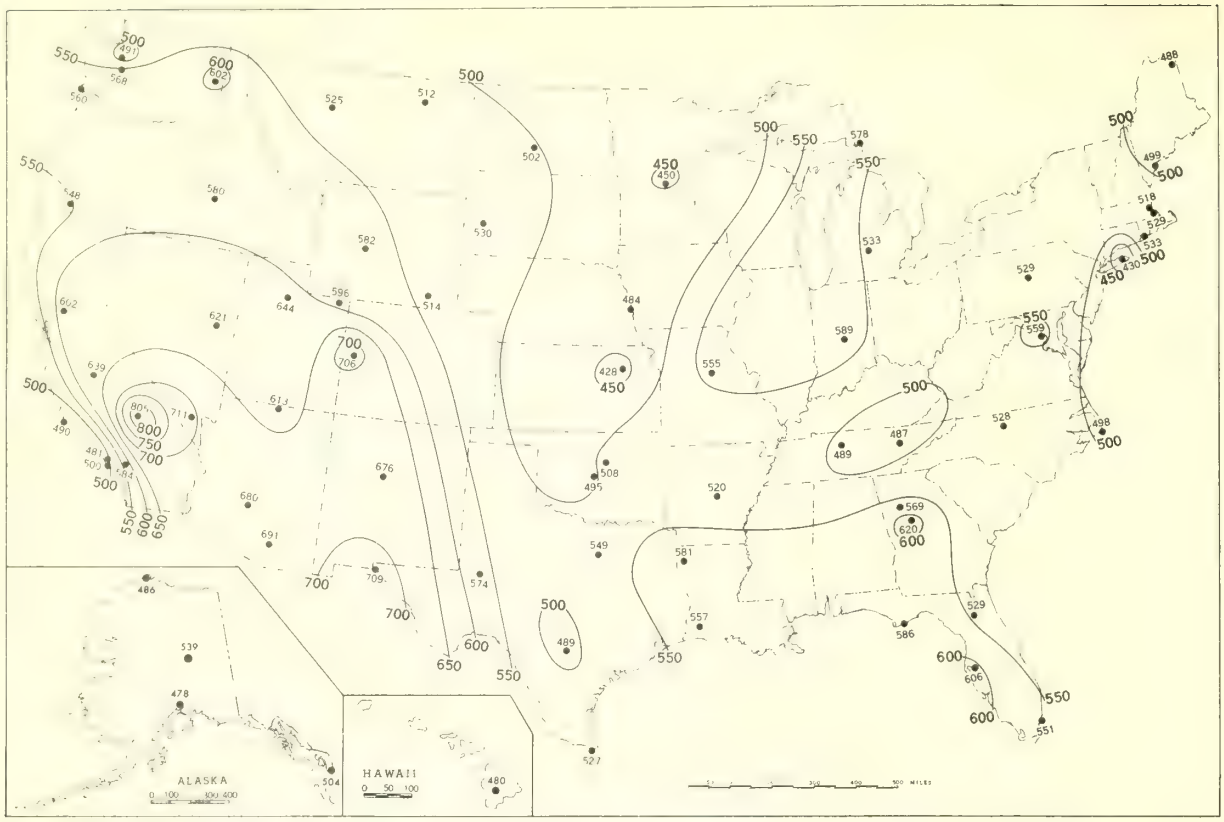


B. Percentage of Mean Monthly Sunshine, May 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, May 1963.

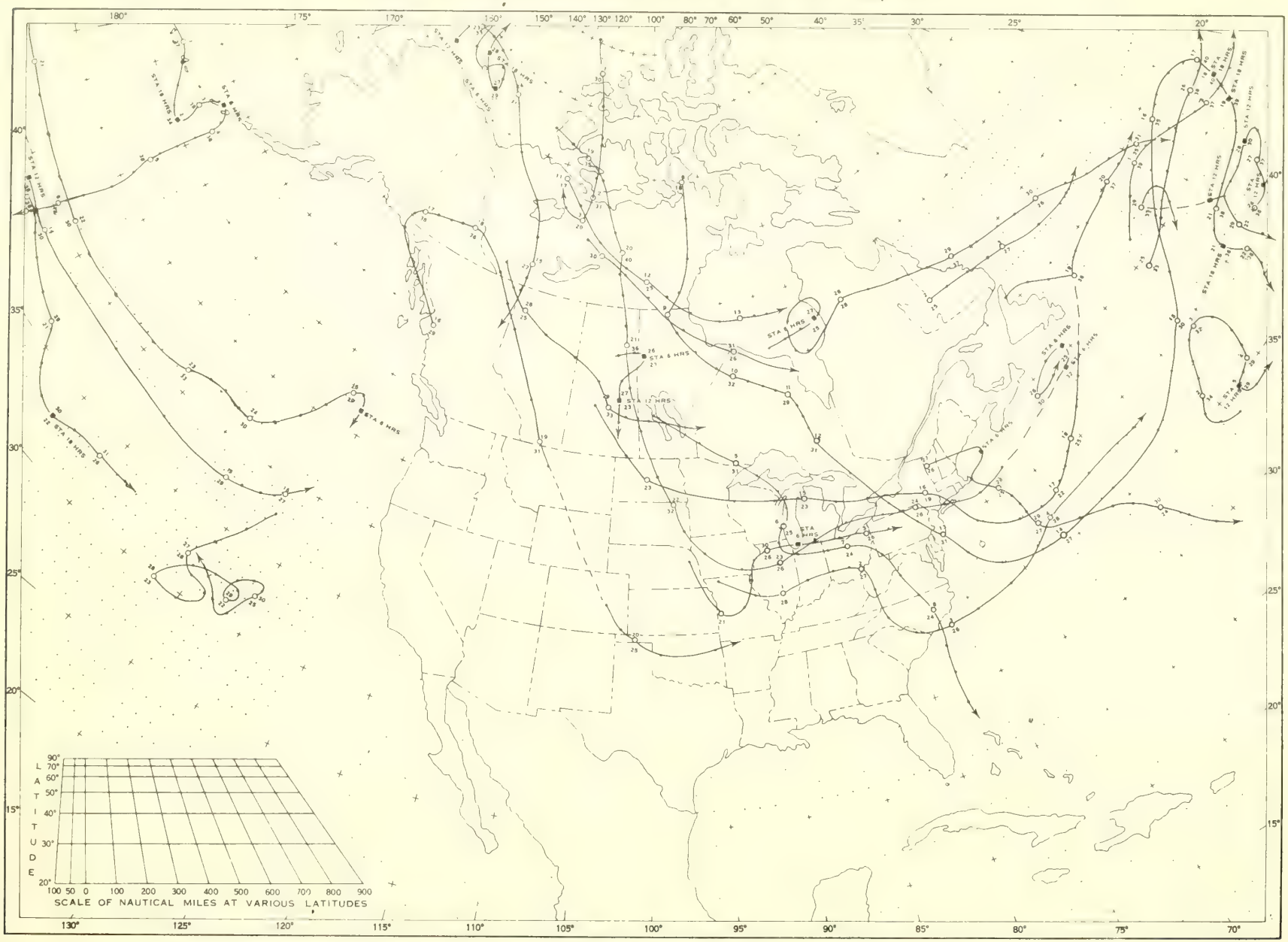


B. Percentage of Mean Daily Solar Radiation, May 1963.



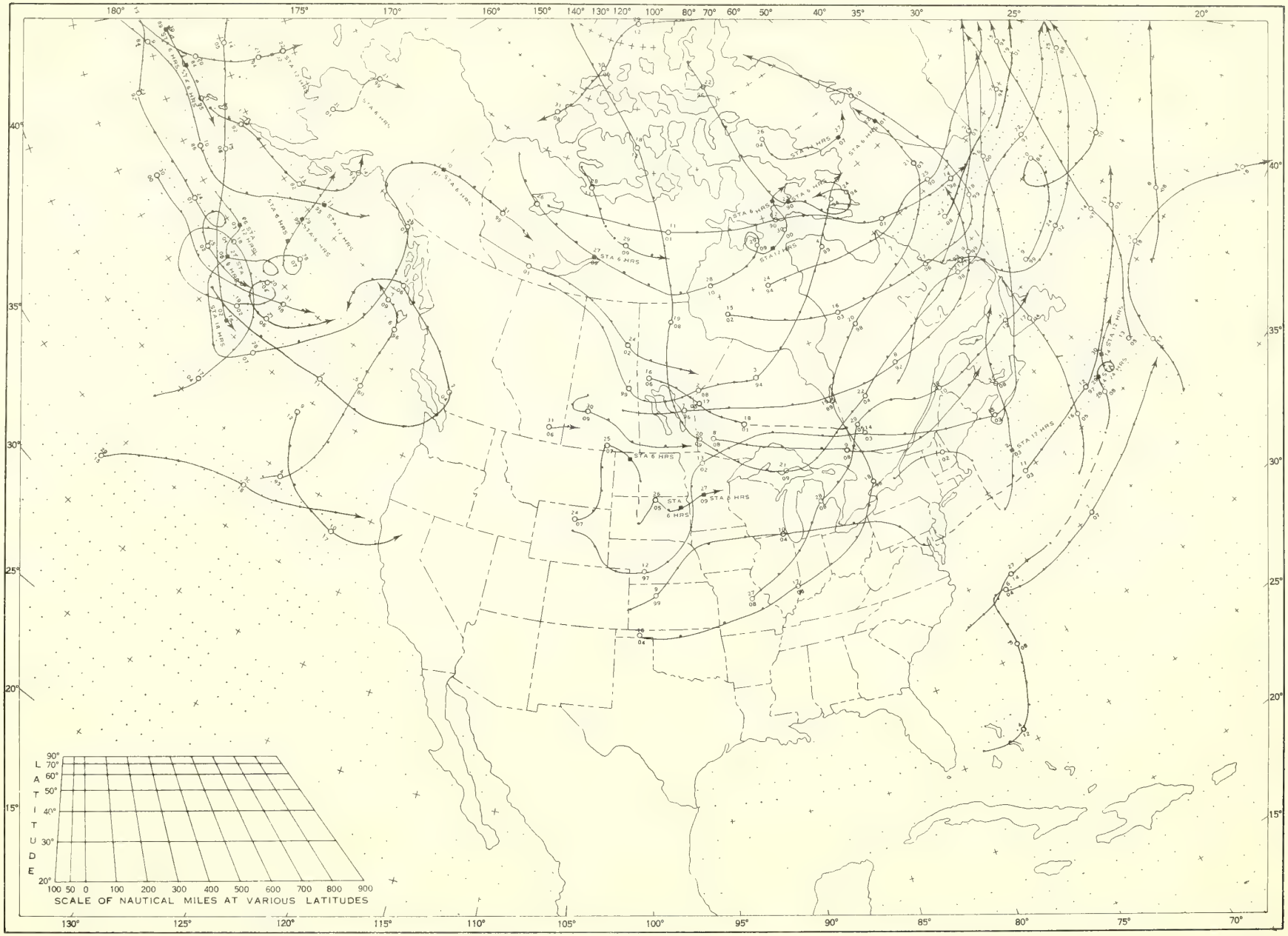
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII Tracks of Centers of Anticyclones at Sea Level, May 1963.



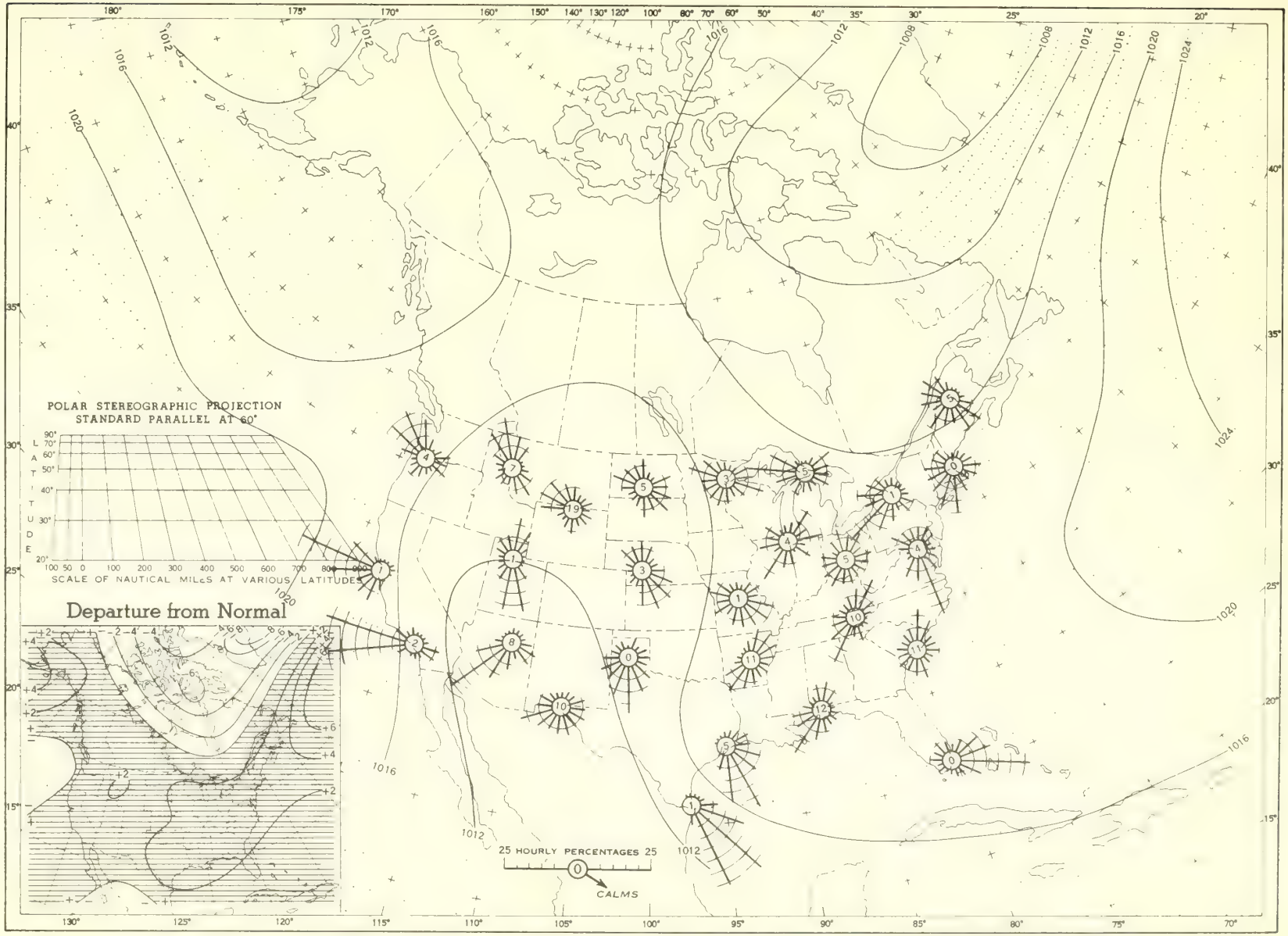
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, May 1963.



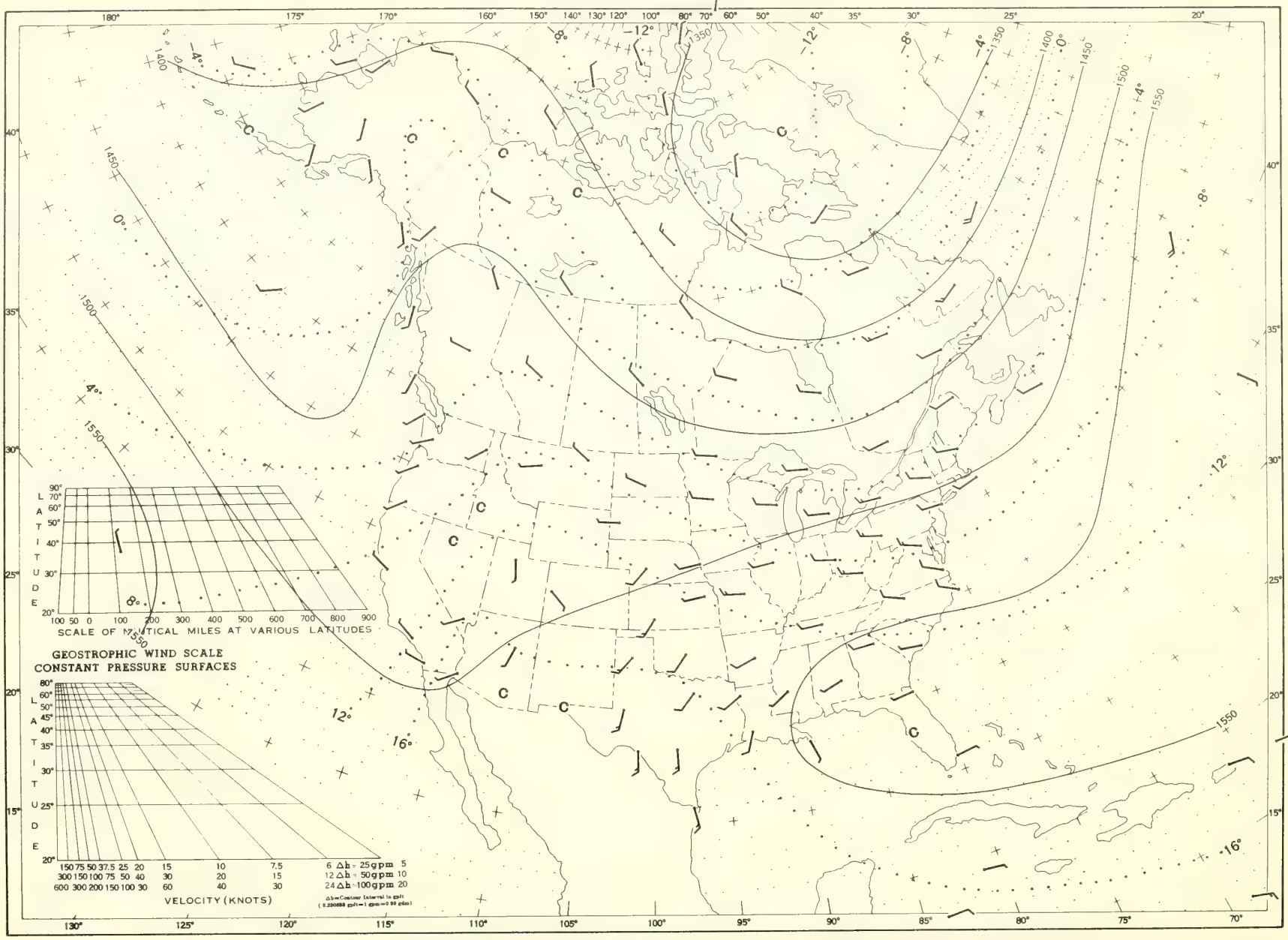
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, May 1963. Inset: Departure of Average Pressure (mb.) from Normal, May 1963.



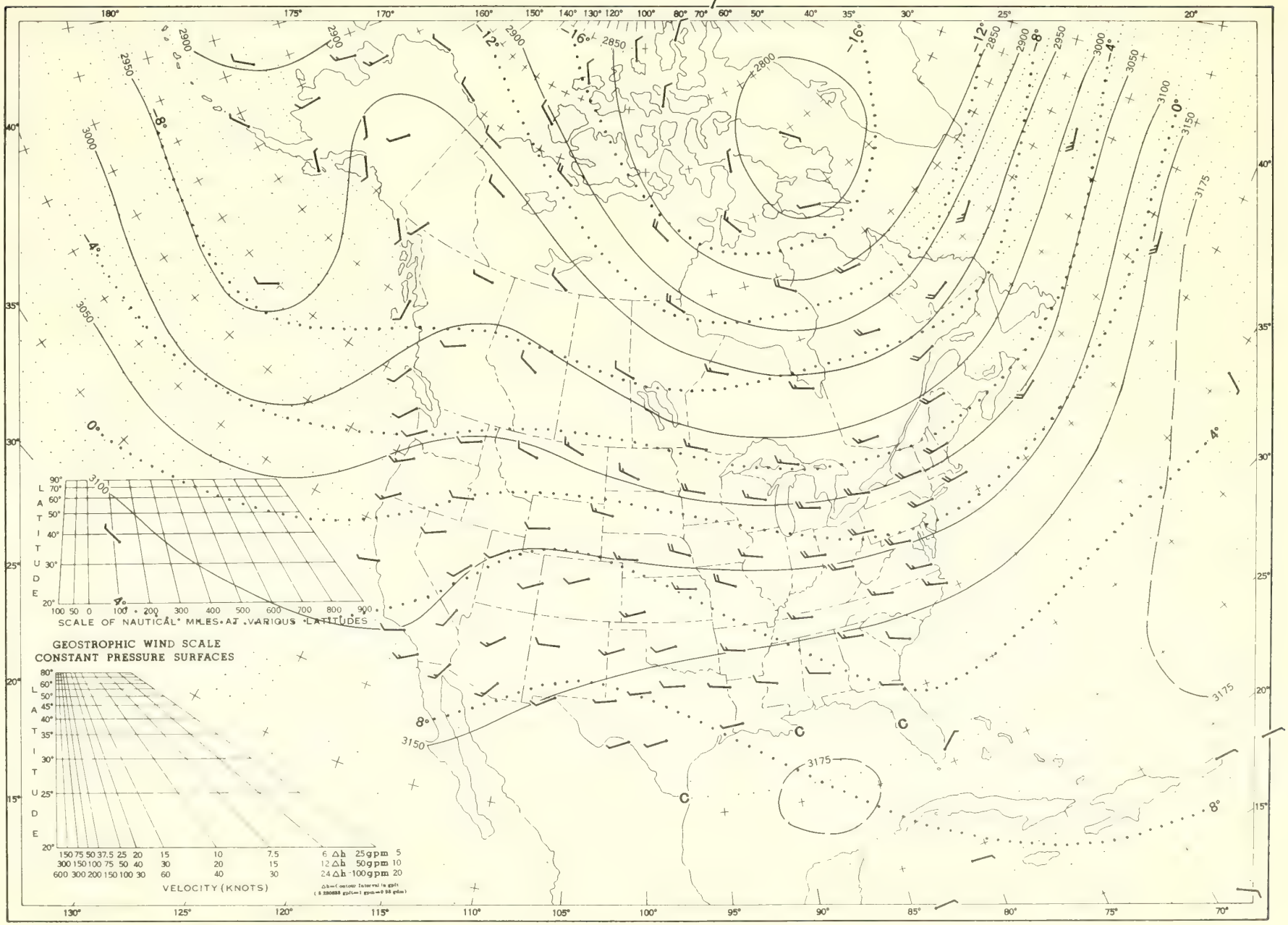
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.



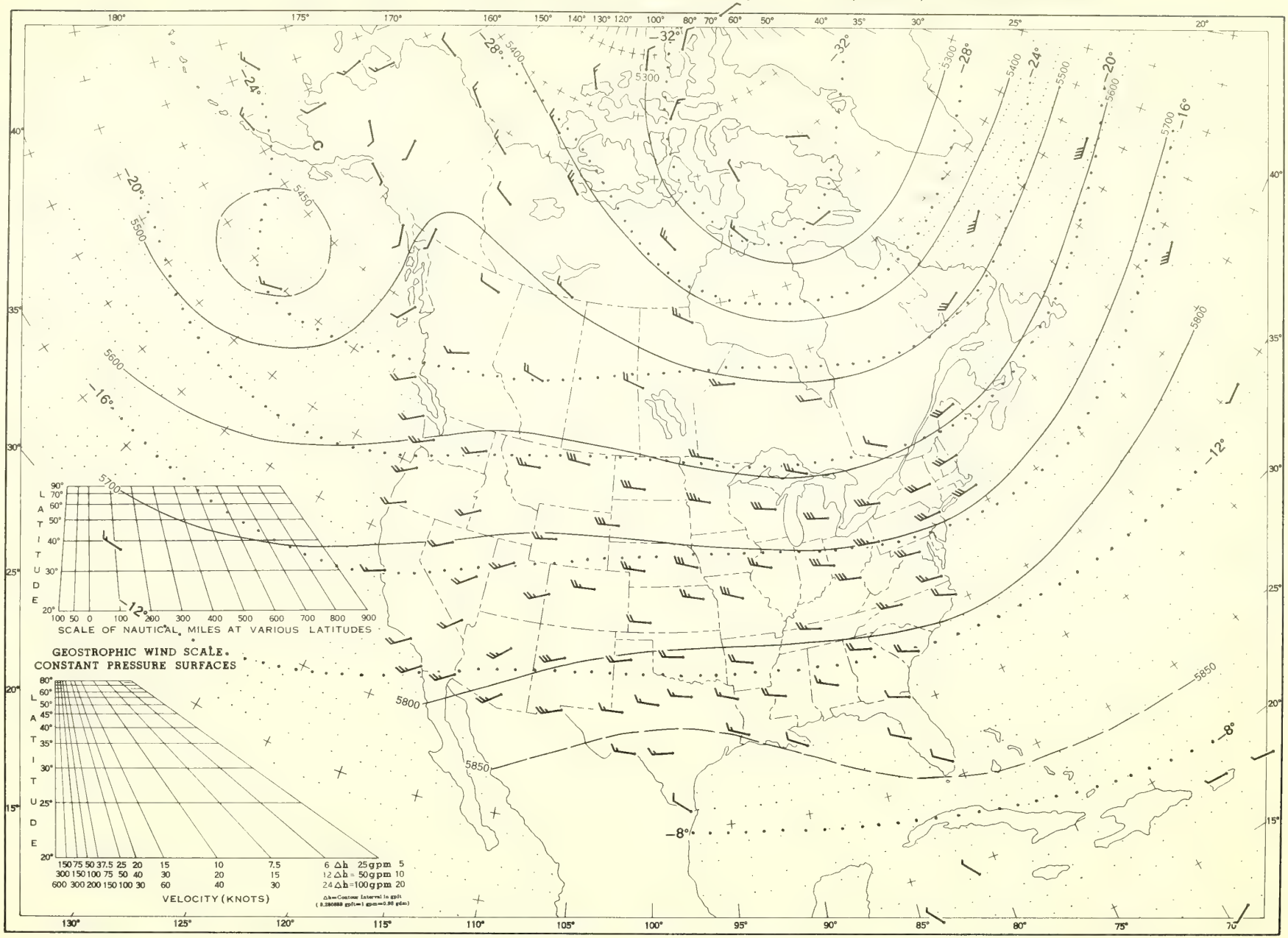
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.



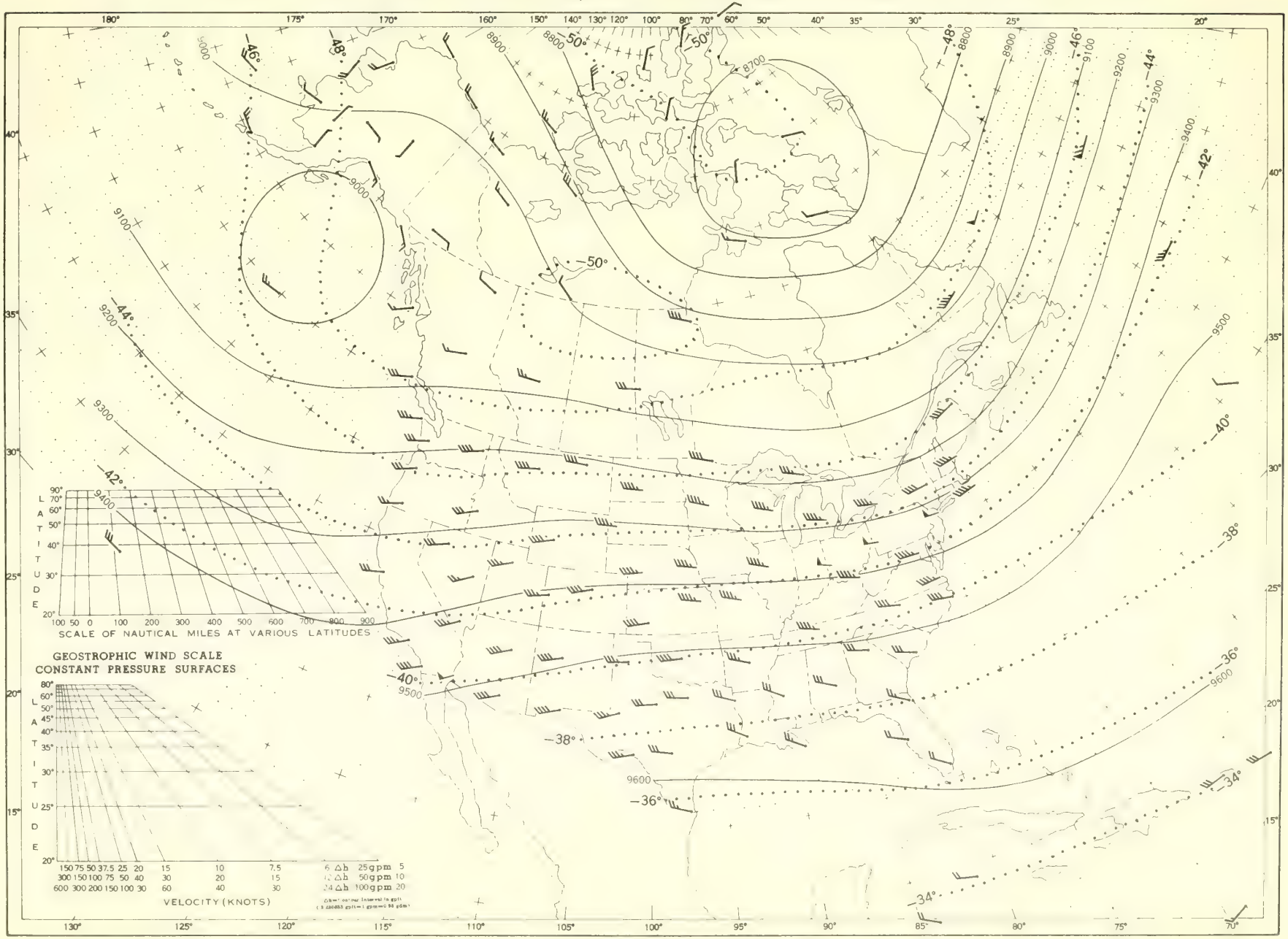
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.



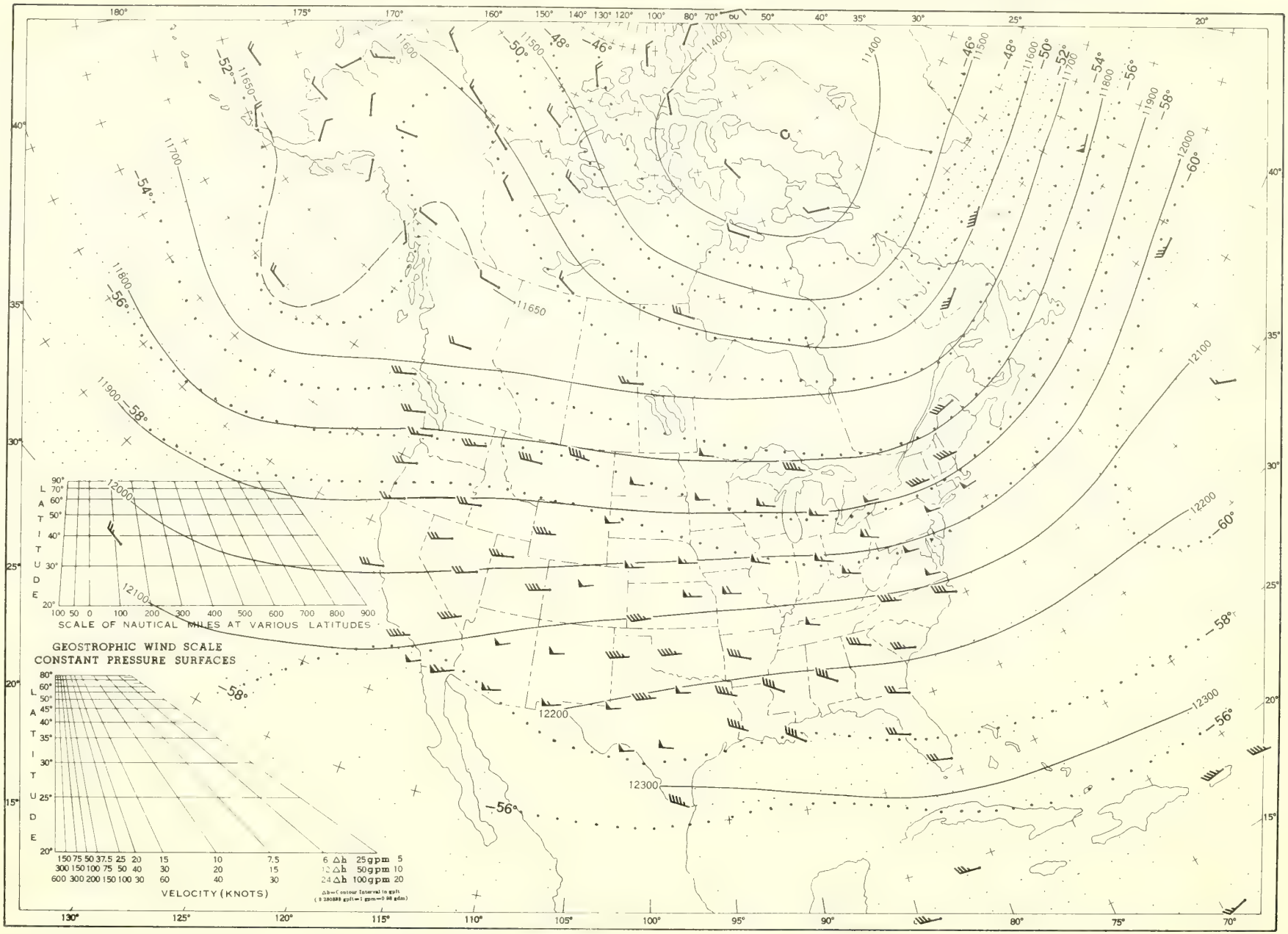
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.



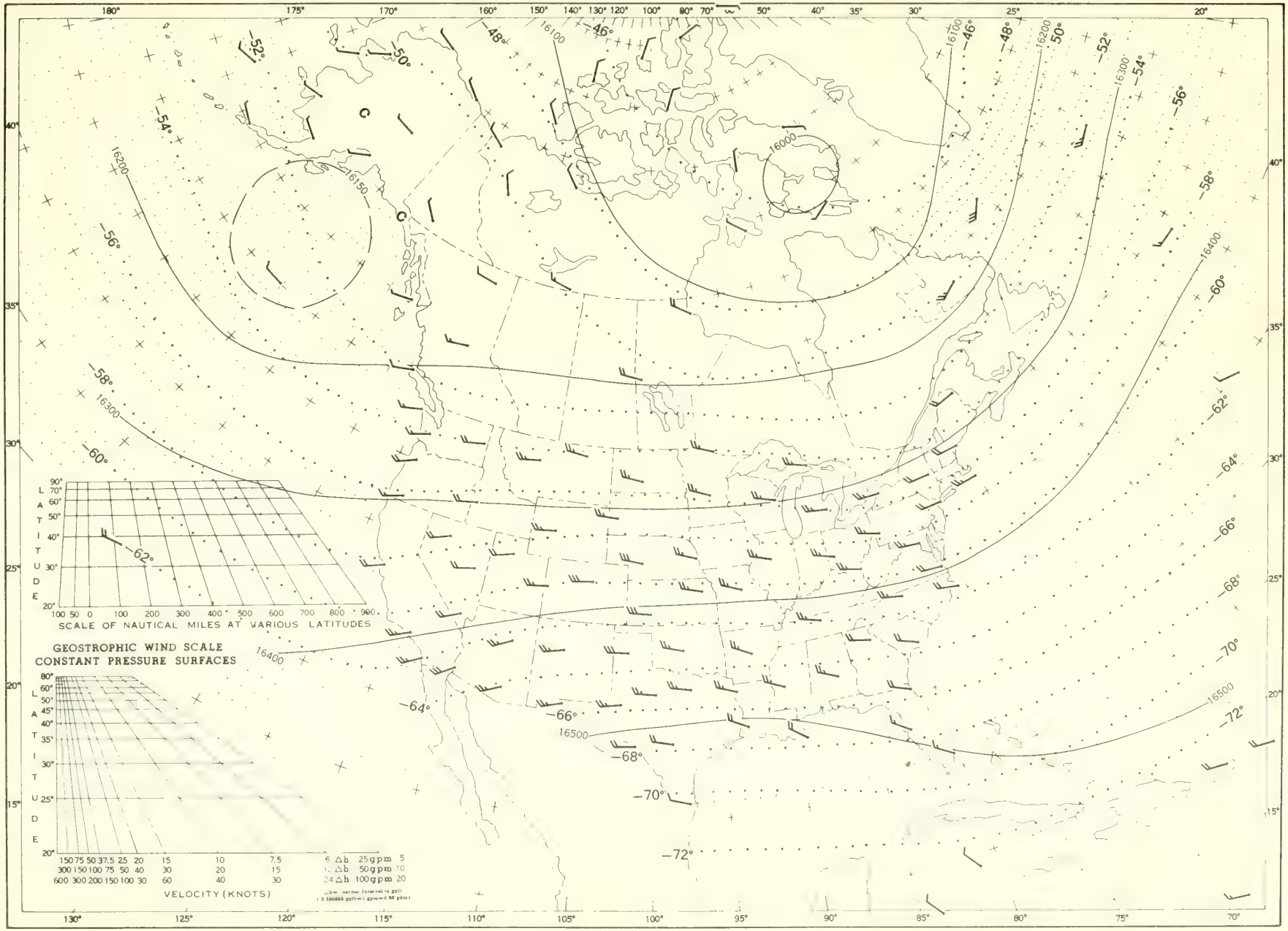
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.



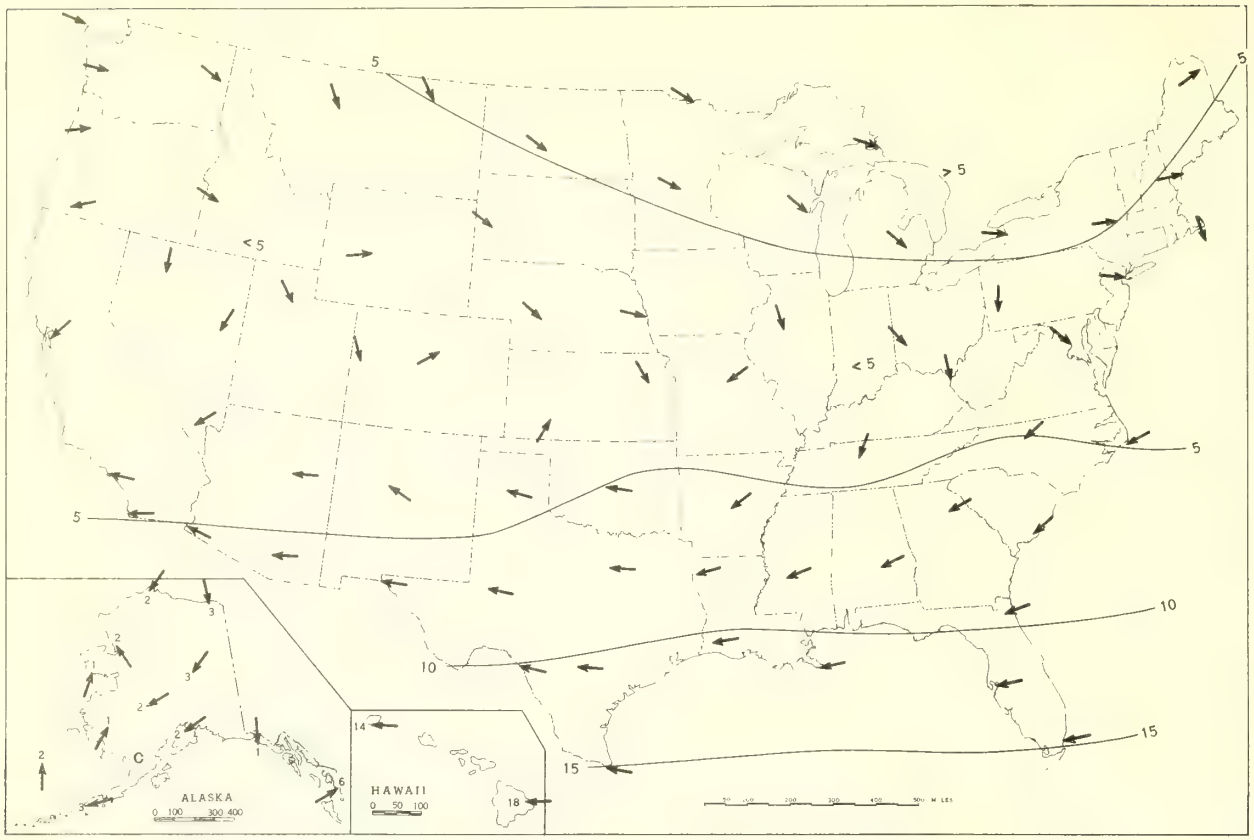
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, May 1963. Average Height and Temperature, and Resultant Winds.

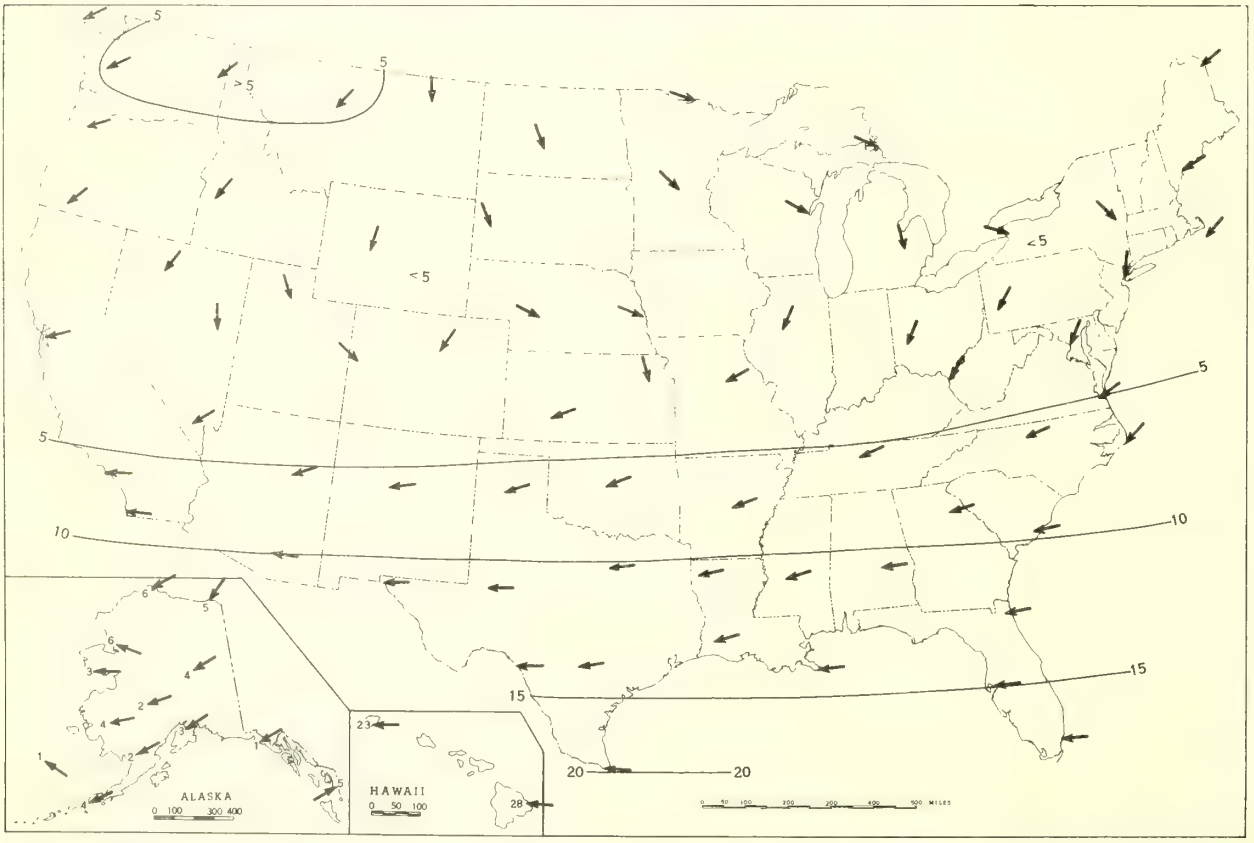


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, May 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, May 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

JUNE 1963
Volume 14 No. 6

ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 6 JUNE 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

Temperatures remained below normal during much of June in the Far West, but fluctuated widely east of the Rockies. Precipitation was abnormally heavy in much of the Southeast where record-breaking amounts for June were recorded locally, and along the Gulf coast where rainfall was extremely short in May. Precipitation was much above normal in large areas of the Far West, but was much below normal in Arizona and New Mexico. At the end of the month many sections in an area extending eastward and northeastward from the middle Mississippi Valley needed rain.

TEMPERATURE.--Average temperatures for June were a few degrees below normal in the Far Southwest and from the lower Appalachian region to the middle Atlantic coast, and above normal along the Canadian Border and in the Great Plains. Below-normal temperatures were rather persistent in the Far Southwest, but changes of considerable magnitude occurred east of the Rockies. From the Ohio and upper Mississippi Valleys to the Atlantic coast the first 10 days were unusually warm, the 2 following weeks were well below normal, and the last week was again unusually warm. From Texas to the Atlantic coast, the first half of the month was unusually warm and the second half abnormally cold. Extremes for the month both occurred in California, 11° on White Mountain on the 4th and 119° at El Centro on the 30th.

In north-central areas, temperatures during a hot period the first 10 days reached 90° or above in the Great Lakes region. Chicago, Ill., registered 96° and Traverse City, Mich., 91°. In many areas east of the Rockies, however, the highest temperatures occurred during the closing days of the month when highs reached 100° or higher in all states except Delaware, New York, and the New England states where highs were in the 90's. On the 30th 101° at Marquette, Mich., equaled the highest ever recorded in June and was the first time the temperature had reached 100° since 1948 and the third time in 90 years. On the same date 91° at Sault Ste. Marie, Mich., was the first time the temperature reached 90° or more there since June 13, 1956, and 98° at Saint Cloud, Minn., was the highest there in any month since July 28, 1955. Port Arthur, Tex., had 99° on the 12th, the highest there so early in June.

A cold air mass moved into the North Central Interior near the end of the third week, reducing temperatures to near record low levels, with frost as far south as northern Illinois and Indiana. Milwaukee, Wis., recorded 38° on the 22d which was the lowest temperature there so late in June since records began in 1870; 38° at Toledo, Ohio, equaled the lowest ever recorded there in June; and 39° on the 22d at Pittsburgh (airport), Pa., was the lowest so late in June there.

PRECIPITATION.--In the Gulf States rather dry weather the first half of the month was followed by frequent showers the latter half. Accumulations were more than twice normal in parts of the Southeast. A cooperative station in Athens, Ga., recorded 19.07 inches for the month, the greatest amount there for any month in more than 85 years of record. Also, a 24-hour record amount of 7.98 inches was measured at Athens at 8 a.m. on the morning of the 27th. Other unusually heavy monthly amounts included Jacksonville, Fla., 12.49 inches; Thomasville, Ga., 10.52; Charleston, S. C., 10.34; Birmingham, Ala., 8.44; Abbeville, Ala., 13.71; Glen St. Mary, Fla., 14.16; and Beaufort, S. C., 16.26 inches. Also, Savannah, Ga., recorded 14.39 inches for the most for June during a record dating back to 1876. The statewide average of near 8 inches for Georgia has not been exceeded since 1900.

The heavy rains in the Southeast caused serious flash floods in Athens and Savannah, Ga. In Athens several homes and businesses were flooded; also 8 persons were drowned when an automobile ran out of control into the swollen Oconee River. At least 30 families were evacuated in Savannah during the flooding. The heavy rains caused some damage to watermelons, tobacco plantings, unharvested grain, and maturing vegetables, but benefited corn, peanuts, and pastures. Grass and weeds became a problem in some sections during the prolonged wet spell. Droughty conditions were relieved in parts of Mississippi, Louisiana, and eastern Texas.

Most of the above-normal precipitation in the Far West fell during the first half of the month. Several stations reported near record amounts for June. Monthly totals ranged up to more than 6 inches in Idaho, 8 inches in Montana, 6 inches in Nevada, 5 inches in Utah, and 6 inches in Wyoming. The total amount for April, May, and June at Reno, Nev., 4.81 inches, was the greatest amount on record for the period. The rains benefited pastures and increased irrigation water supplies. In Nevada, water was going over the spillways at several reservoirs at the end of the month, an almost unheard of event in that State. This turn of events was in sharp contrast to the gloomy outlook for water supplies earlier in the season.

Dry weather was causing concern for crops in several northern sections at the end of the month. Rain was needed in Iowa and several other sections of the middle Mississippi Valley. In parts of Iowa rainfall had been subnormal for 7 weeks, and 1.13 inches at Des Moines was the least for June there in 30 years. Erie, Pa., recorded 0.85 inch, the least for June in 91 years; Rochester, N. Y., 0.22 inch, the least for June during a record back to 1830; and Concord, N. H., 1.22 inches, the least since 1913. Trenton, N. J., recorded 3.64 inches for the April-May-June period and 12.19 inches for January through June, both amounts the least of record for the respective periods.

DESTRUCTIVE STORMS.--The usual hail damage occurred in the midcontinent area. One of these storms seriously damaged sugar beets in the vicinity of Huntley, Mont., on the 20th. Another with high winds destroyed 500,000 acres of cotton in the south plains of Texas. On the 15th flood and hail damage at Denver, Colo., was estimated near $1 million.

Numerous flash floods occurred during the month. The one at Amarillo, Tex., on the 16th was responsible for one death. Flood damage was estimated in the neighborhood of $70 million in the Big Horn Mountains, and near $200 million in the vicinity of Lander, Wyo.

CONDENSED CLIMATOLOGICAL SUMMARY

JUNE 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	3 Stations	106	14+	Heflin	47	1	Abbeville 1NNW	13.71	Gainesville	2.07
Alaska	NWAC	82	7	Barter Is. WBAP	16	2	Whittier	16.17	Wainwright	.07
Arizona	Gila Bend	113	18	Maverick	20	9	Wahak Hotrontk	.68	135 Stations	.00
Arkansas	Nimrod Dam	103	14	Narrows Dam	50	19	Salem	6.54	Natural Dam	.71
California	El Centro 2SSW	119	30	White Mountain 2	11	4	Meyers 4SW	6.93	95 Stations	.00
Colorado	Eads	110	29+	Hermit 7ESE	19	11	Hawthorne	6.28	Cimarron 3SE	T
Connecticut	Norwich Pub Util Plt	98	28	Coventry	35	2	Salisbury	5.80	Groton	1.24
Delaware	4 Stations	96	27+	Georgetown 5SW	40	15	Milford 3WNW	5.73	Lewes 1SW	2.49
Florida	2 Stations	102	14	De Funiak Springs	51	3	Glen St. Mary Nurseries	14.16	Marathon Shores	.73
Georgia	do	103	14	2 Stations	45	2	Athens	19.07	Cairo 2NNW	2.77
Hawaii	Nana 1026, Kauai	90	29	Mauna Loa Slope Obs	29	7	Puohokamoa 2 343 Maui	24.95	5 Stations	.00
Idaho	3 Stations	99	19+	Atlanta 3	23	30	Dixie	6.44	Cambridge	1.07
Illinois	Quincy	102	28	2 Stations	35	22	Flora 2NW	6.20	Avon 5NE	.03
Indiana	Paoli	101	27	3 Stations	36	22	Newberry	5.73	Richmond Airport	.39
Iowa	Keosaugua	102	30	Elkader	38	21	James 1NE	10.98	Williamsburg	.00
Kansas	2 Stations	108	29+	3 Stations	43	10	Deerfield 10NNW	9.73	2 Stations	.86
Kentucky	5 Stations	98	14+	Jackson	42	22	Heidelberg Lock 14	7.75	Jeremiah	.91
Louisiana	Winnsboro	108	16	2 Stations	55	1	Morgan City	15.82	Koran	1.13
Maine	2 Stations	95	27+	3 Stations	31	10	Brunswick	3.31	Agusta FAA AP	.58
Maryland	Conowingo Dam	106	28	2 Stations	34	23+	Baltimore WBAP	9.16	Frederick WBAP	2.67
Massachusetts	Provincetown 1N	98	27	3 Stations	39	22+	Washington 2	5.74	Salem CG Air Station	.86
Michigan	Marquette WB City	101	30	Vanderbilt Trout Sta	28	22	Higgins Lake	6.86	Fife Lake 2S	.55
Minnesota	2 Stations	103	30	Bigfork	26	12	Bird Island	7.65	Caledonia	1.26
Mississippi	Merrill	108	15	Edinburg	51	3	Rockport	10.72	Senatobia	1.14
Missouri	2 Stations	101	30+	Richwoods	38	12	Fisk	9.80	Gregory Landing	.18
Montana	Loma 1WNW	97	18	2 Stations	25	30+	Volborg	8.39	Haugan	1.35
Nebraska	Imperial FAA AP	110	29	Wallace 1ENE	37	17	David City	10.98	Imperial FAA AP	.54
Nevada	2 Stations	108	19	2 Stations	24	29	I L Ranch	6.50	2 Stations	.00
New Hampshire	do	96	27+	do	31	10	Fabyan	3.60	Portsmouth	.95
New Jersey	Hammonton 2NNE	102	28	Long Valley	37	22	Audubon	6.41	Long Branch	.47
New Mexico	2 Stations	107	30	3 Stations	21	11+	Clovis 13N	8.26	9 Stations	.00
New York	Hempstead Malverne	99	27	Lake Placid Club	28	11	Parishville 1WNW	6.37	Barker 4NE	.17
North Carolina	Hamlet	101	10	2 Stations	39	2	Highlands 2S	10.11	Reidsville	1.23
North Dakota	Fort Yates	105	29	Turtle Lake	32	30	Bismarck 12ENE	9.93	Colgate	1.01
Ohio	Toledo Blade	100	28	Millport 2NW	34	23	Cambridge State Hosp	10.53	Eaton	.40
Oklahoma	Waurika	106	29+	Kenton	48	10	Alva	10.21	Pontotoc	.44
Oregon	Arlington	104	16	3 Stations	23	6+	Brightwood	5.76	Arlington	.03
Pennsylvania	Bethlehem Lehigh Univ.	104	27+	Clermont 4NW	28	22	McConnellsburg	6.54	New Stanton	.45
Puerto Rico	2 Stations	96	17+	Lares	60	2	Maricao Fish Hatchery	14.39	Melania Dam	.22
Rhode Island	3 Stations	93	28+	2 Stations	43	22+	Woonsocket	3.91	Block Island WBAP	.94
South Carolina	Tilghman Forest Nursery	105	11	Caesars Head	50	2	Beaufort 7SW	16.26	Loris	2.15
South Dakota	Oahe Dam	109	30	Deerfield 5NW Natl Mem	31	6	Mt. Rushmore	8.53	La Delle 7NE	1.43
Tennessee	Samburg Wild Life Rfg	99	14+	2 Stations	43	3+	Copperhill	8.02	Sparta 2NW	1.67
Texas	Armstrong	110	16	Cornudas Service Sta.	46	10	Houston Alief	13.01	Humble Pump Station	.00
Utah	Cisco	102	27	Strawberry Reservoir	21	7	Silver Lake Brighton	5.70	3 Stations	.00
Vermont	Rutland	97	26	2 Stations	32	11+	Salisbury	4.04	Bethel 4N	.74
Virginia	Halifax 2SSE	100	11	Floyd 2NE	36	2	Mount Weather	12.06	Appomattox 3W	.73
Washington	John Day Dam	104	16	Rainier Paradise RS	26	3	Tolt South Fork Rsvr	7.72	2 Stations	T
West Virginia	Martinsburg FAA AP	96	27	Canaan Valley	30	23+	Fairmont	7.72	do	1.28
Wisconsin	Brule Island	101	30	Couderay 2W	27	12	Madison WBAP	8.15	Readstown	.63
Wyoming	2 Stations	101	28	2 Stations	19	30+	Buffalo 15SW	6.88	Dixon	.13

+ And a... [illegible] dates

NOTE: Dates and hour in the Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No of days							No of days				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0.3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In	In.	M p.h.		M p.h.							°°
ALABAMA																																
BIRMINGHAM	610	990.8	1015.7	88	67	77.3	- 0.6	98	14+	57	3	12	0	67	74	8.44	4.43	3.30	10	8	0.0	0	6.3	E	29	SW	20	9	9	12	6.2	57
HUNTSVILLE	605	992.7	1015.5	88	66	76.9	- 1.7	97	14+	59	2	12	0	65	69	6.54	3.17	2.36	12	9	0.0	0	6.3	ESE	40*	WSW	20	9	8	13	6.1	
MOBILE	211	1012.4	1014.6	90	71	80.4	0.4	100	14	62	2	15	0	70	78	7.16	0.93	2.34	13	20	0.0	0	6.7	SW	28*	WNW	22+	10	13	7	5.5	
MONTGOMERY	195	1007.0	1015.0	90	70	79.9	0.5	100	15+	58	3	14	0	68	72	4.46	0.29	2.62	7	9	0.0	0	6.7	ENE	27	NW	21+	12	5	13	5.4	63
ALASKA												8														8					
ANCHORAGE	90	1005.6	1010.6	58	45	51.6	- 2.9	66	8	38	6	0	0	40	67	1.82	0.84	0.56	11	0	0.0	0	6.9	SSE	18*	SSE	9+	2	7	21	8.2	36
ANNETTE	110	1011.5	1015.6	58	47	52.4	- 1.4	76	30	39	7	1	0	46	81	8.34	2.67	2.46	19	6	0.0	0	7.6	SSW	26*	ESE	3	0	7	23	8.6	
BARROW	22	1010.0	1010.7	38	30	33.8	0.7	50	18	22	1	0	28	31	91	0.08	- 0.28	0.08	1	0	T	2	12.0	ENE	30*	E	27	1	8	21	8.3	
BARTER ISLAND	39	1007.7	1009.6	38	30	33.9	- 0.3	54	23	16	2	0	25	32	90	0.14	- 0.37	0.07	4	3	0.3	9	9.4	ENE	25*	ENE	27	1	4	25	8.5	
BETHEL	125	1006.0	1007.6	55	39	47.1	- 4.5	74	17	31	5+	3	3	41	80	3.32	2.14	1.00	16	0	2.2	T	11.7	SW	30*	S	29	1	10	19	8.1	
COLD BAY	94	1006.2	1010.0	50	42	45.9	0.6	56	26+	33	28	0	0	41	84	1.06	- 0.89	0.26	18	3	0.0	0	17.1	SSE	40*	SSE	21	1	2	27	9.2	
CORDOVA	40	1010.4	1012.1	56	41	48.2	- 2.0	71	29	34	25+	1	0	43	80	7.28	3.80	2.39	19	4	0.0	0	6.9	E	18*	ESE	2	3	5	22	7.9	
FAIRBANKS	436	990.9	1008.0	64	43	53.4	- 5.0	72	21	31	6	6	1	41	64	2.00	0.61	0.84	16	1	0.0	0	6.8	SW	27*	SSW	4	0	6	24	8.5	
JUNEAU	17	1012.2	1013.8	57	44	50.4	- 1.9	76	30	35	7	1	0	43	78	4.53	1.14	1.09	23	0	0.0	0	9.1	ESE	30*	ESE	23	1	3	26	9.0	27
KING SALMON	43	1010.0	1009.9	56	39	47.6	- 3.8	71	29	33	8+	1	0	40	77	1.58	0.18	0.30	17	6	T	T	12.1	SW	37*	E	2	2	1	27	9.0	
KOTZEBUE	10	1006.6	1007.2	50	38	43.8	0.0	65	21	29	1	0	6	38	82	0.55	0.06	0.22	11	0	2.4	T	13.2	WNW	31*	N	1	7	6	17	6.9	
MC GRATH	334	994.1	1007.9	60	42	50.9	- 5.6	70	18	32	5	1	1	40	67	1.05	- 0.61	0.17	17	1	0.5	0	7.7	SSW	31	SSW	22	1	4	25	8.6	
NOME	13	1005.8	1006.6	49	38	43.2	- 2.7	67	18	28	2	0	10	36	79	0.87	- 0.06	0.25	8	3	T	T	13.1	W	30*	W	30+	6	8	16	7.0	25
ST. PAUL ISLAND	22	1006.7	1007.7	44	36	40.2	- 0.6	50	23	30	7+	0	6	37	90	2.19	1.04	0.59	14	0	T	T	16.6	SE	37*	N	2	0	4	26	9.2	
SHEMYA	122	1005.9	1010.0	46	39	42.5	0.7	50	26+	35	3	0	0	39	90	1.52	0.28	0.80	12	0	0.0	0	13.1	SW	33*	ENE	16	1	2	27	9.3	
YAKUTAT	28	1011.4	1013.6	54	42	48.3	- 2.2	64	30	35	2	0	0	45	85	12.63	7.57	3.41	26	0	0.0	0	7.6	ESE	29*	SE	2	1	6	23	8.3	
ARIZONA																																
FLAGSTAFF	6993	789.6	1011.2	75	38	56.3	- 3.2	84	30+	28	11	0	6	22	28	T	- 0.69	T	0	1	0.0	0	9.2	SSW	24*	S	23	23	5	2	1.7	
PHOENIX	1117	969.0	1007.1	99	64	81.7	- 3.9	108	18	56	9+	29	0	36	19	0.00	- 0.09	0.00	0	0	0.0	0	7.9	W	23*	WNW	13+	29	1	0	0.4	99
PRESCOTT	5014	845.0	1009.2	83	51	67.4	- 3.0	94	26+	41	7	10	0	26	23	0.00	- 0.32	0.00	0	1	0.0	0	12.1	SW	35	S	12	25	3	2	1.3	92
TUCSON	2584	921.7	1007.4	97	64	80.5	- 1.7	104	30+	53	9	26	0	26	15	T	- 0.29	T	0	1	0.0	0	10.0	SW	32	W	1	29	1	0	0.4	98
WINSLOW	4880	849.2	1009.3	91	51	70.9	- 3.9	102	30	42	8+	17	0	24	19	0.02	- 0.24	0.02	1	1	0.0	0	11.3	SW	29*	SSW	7+	24	5	1	1.6	
YUMA	199	1002.5	1007.4	100	69	84.3	- 3.4	111	17	58	7	26	0	41	26	0.00	- 0.01	0.00	0	0	0.0	0	7.8	SSE	30	SE	3	27	3	0	0.6	99
ARKANSAS																																
FORT SMITH	449	997.0	1013.6	93	69	80.5	1.9	101	13+	63	1	21	0	68	70	4.08	- 0.27	2.78	5	6	0.0	0	6.6	ENE	38	W	10	7	16	7	5.4	66
LITTLE ROCK	257	1001.4	1014.3	93	68	80.4	1.5	102	15	60	3+	22	0	66	66	1.25	- 2.36	0.75	6	6	0.0	0	7.0	ENE	31	N	11	12	13	5	4.5	81
TEXARKANA	361	1000.2	1013.8	92	71	81.2	1.8	98	13	61	1	23	0	69	72	5.00	1.11	3.28	4	3	0.0	0	7.3	S								
CALIFORNIA																																
BAKERSFIELD	494	993.6	1011.1	87	63	74.8	- 2.3	103	17	54	29+	10	0	48	41	0.28	0.19	0.21	4	3	0.0	0	7.4	NW	21*	NNW	10+	23	4	3	2.0	
BISHOP	4108	870.9		83	48	65.3	- 4.5	99	19	37	4	9	0			0.55	0.46	0.26	6	5	0.0	0						19	3	8	3.4	
BLUE CANYON	5280	838.1		65	47	56.0	- 3.2	79	16	37	22	0	0			1.86	0.93	0.81	7	6	0.0	0	8.3	ENE	38	ENE	12	16	8	6	4.1	
BURBANK	699	987.3	1013.0	73	57	64.8	- 3.2	83	25	53	11+	0	0	54	72	0.31	0.26	0.21	4	0	0.0	0	6.6	S	16*	S	13+	11	8	11	5.2	
EUREKA U	43	1015.4		59	50	54.4	- 1.1	65	29	46	10+	0	0			0.33	- 0.41	0.27	3	0	0.0	0	9.6	NW*	30	N	10	9	12	9	5.6	71
FRESNO	326	999.1	1010.8	88	58	73.2	- 0.7	104	17	49	29	13	0	47	43	0.03	- 0.04	0.03	1	1	0.0	0	8.8	NW	33	NW	3	24	2	4	2.0	93
LONG BEACH	34	1012.2	1013.7	75	59	67.1	0.0	85	30	54	29+	0	0	55	70	0.52	0.49	0.52	2	0	0.0	0	6.9	S	18*	SW	10	10	14	6	4.7	
LOS ANGELES	97	1009.5	1013.2	72	60	65.6	0.9	78	30+	55	7+	0	0	57	76	0.24	0.19	0.22	3	0	0.0	0	8.6	WSW	21*	WNW	23	6	14	10	5.5	
LOS ANGELES U	312			74	59	66.4	- 1.6	86	30+	55	11	0	0	69	54	0.14	0.08	0.11	3	0	0.0	0	5.9	W#	19	S	11+	13	10	10	5.2	56
MT SHASTA R	3544	891.6		71	45	58.1	- 2.2	87	18+	31	29	0	1			1.86	0.61	0.72	8	2	T	T						15	13	2	3.6	
OAKLAND	3	1013.6	1013.8	70	53	61.7	- 1.1	80	17	49	29	0	0	49	69	0.03	- 0.09	0.03	1	0	0.0	0	10.9	WNW	32*	W	20	18	9	3	3.2	
POINT ARGUELLO R	367	1000.7		63	50	56.5	- 0.4	69	13	42	4	0	0			0.05	0.00	0.04	2	0	0.0	0	8.3		23*	NW	29	4	10	16	7.0	
RED BLUFF	341	998.6	1011.2	88	61	74.6	- 1.6	103	17+	50	29	11	0	44	37	0.15	- 0.30	0.12	2	2	0.0	0	10.1	NNW	34	NW	16	19	6	5	3.2	90
SACRAMENTO	17	1010.8	1011.7	86	54	70.1	- 2.4	103	17	49	11	7	0	51	58	T	- 0.10	T	0	0	0.0	0	8.2	SSW	34	NW	3	25	3	2	1.9	97
SACRAMENTO U	23			84	56	69.8	- 1.7	101	17	52	29+	6	0			0.02	- 0.10	0.02	1		0.0	0										
SANDBERG R	4517	861.1		69	50	59.4	- 5.4	88	16	38	6	0	0			0.54	0.51	0.49	4	1	0.0	0	13.0	NNW	36*	S	10+	23	3	4	2.2	
SAN DIEGO	13	1010.3	1013.3	71	59	64.7	- 1.0	79	30+	54	7	0	0	56	75	0.28	0.23	0.27	3	0	0.0	0	7.4	SW	21	S	11	8	7	15	6.5	48
SAN FRANCISCO	8	1013.8	1014.5	68	50	58.6	- 2.7	76	25	46	6	0	0	49	76	T	- 0.11	T	0	0	0.0	0	12.2	W	37	W	4+	21	6	3	2.6	
SAN FRANCISCO U	52			64	52	58.1	- 1.0	71	25	49	9	0	0			T	- 0.14	T	0	0	0.0	0	10.6	W#	31	W	20					78
SANTA CATALINA	1568	957.2		66	54	60.4		79	29+	51	8+	0	0			0.28		0.22	4	0	0.0	0						8	11	11	5.3	
SANTA MARIA	238	1008.9	1014.6	67	50	58.7	- 0.9	75	17	42	4	0	0	51	80	0.03	- 0.11	0.02	2	0	0.0	0	9.2	WNW	29*	WNW	28+	14	11	5	4.2	
STOCKTON	28	1005.0	1012.0	87	56	71.5		103	17	50	29	10	0	48	49	0.13		0.13	1	1	0.0	0	9.7	W	29*	E	10	26	3	1	1.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: 01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In	M p.h.		M.p.h							%
COLORADO																																
ALAMOSA	7536	771.7		78	40	58.7	- 1.3	88	30+	28	9	0	3			0.69	0.20	0.51	7	5	0.0	0						16	13	1	3.0	
COLORADO SPRINGS	6173	810.8	1009.7	84	54	69.0	4.8	98	28	47	10+	10	0	34	35	1.22	- 0.37	0.77	6	6	0.0	0	11.4	S	33*	W	3	15	11	4	3.8	
DENVER	5283	835.3	1008.3	83	51	66.7	- 0.3	96	28	45	17	8	0	42	47	3.59	2.15	2.17	7	6	0.0	0	9.3	S	42	SE	13	14	12	4	4.2	72
GRAND JUNCTION	4849	855.7	1007.3	86	57	71.4	0.1	99	27	51	8+	12	0	26	23	0.61	0.19	0.37	6	6	0.0	0	8.1	SE	33	SW	21	12	11	7	4.4	69
PUEBLO	4639	853.1	1007.3	90	56	72.9	1.8	103	29+	46	1	16	0	37	33	3.46	- 0.76	0.24	5	7	0.0	0	10.9	SSE	49	SE	26	17	10	3	3.5	82
CONNECTICUT																																
BRIDGEPORT	7	1014.2	1015.2	76	59	67.5	- 0.5	93	28	52	22+	3	0	58	74	2.68	- 0.72	1.55	7	2	0.0	0	11.1	WSW	28*	NW	21	11	8	11	5.8	
HARTFORD	169	1008.1	1014.0	80	56	68.1	0.5	95	28	46	22	5	0	57	72	4.25	0.55	1.50	12	3	0.0	0	6.8	S	24	W	22	6	10	14	6.7	60
NEW HAVEN	6	1013.7	1014.2	76	57	66.3	0.1	91	28+	50	17+	2	0			4.35	0.82	2.10	13	4	0.0	0	6.5		23	SW	22	9	10	11	5.9	63
DELAWARE																																
WILMINGTON	78	1011.2	1014.6	82	60	70.8	- 0.6	95	28+	48	22	5	0	60	72	3.26	- 0.81	1.55	10	5	0.0	0	5.6	WNW	23*	NE	3	8	11	11	5.8	
DIST.OF COLUMBIA																		1														
WASHINGTON U	72			85	64	74.1		97	27+	55	22	10	0			8.39		2.40	12													
WASH NATL AP	14	1010.4	1015.0	83	64	73.7	- 0.5	96	10	54	22	7	0	60	64	6.87	3.66	2.10	12	7	0.0	0	7.3	S	42	NNE	14	9	8	13	5.7	68
FLORIDA																																
APALACHICOLA U	13	1013.3		86	74	80.2	0.0	90	16+	68	3+	3	0			7.25	1.95	3.81	14	13	0.0	0	6.9		34	N	9	4	17	9	6.1	68
DAYTONA BEACH	31	1014.9	1016.5	90	72	81.2	2.8	98	14	66	29	16	0	70	71	7.42	1.61	2.94	16	15	0.0	0	8.5	WSW	37*	N	28	3	12	15	6.9	
FORT MYERS	13	1015.5		90	74	81.9	1.1	94	30	70	5+	18	0			7.70	- 1.26	1.93	19	20	0.0	0	6.2		23*	E	23	5	18	7	5.8	
JACKSONVILLE	24	1014.4	1015.7	90	71	80.5	- 0.3	97	15+	64	3	18	0	71	78	12.49	6.16	2.68	17	18	0.0	0	8.4	SW	52	NW	12	3	13	14	6.9	69
KEY WEST	5	1014.9	1015.9	88	79	83.4	1.6	90	30+	71	4	7	0	73	71	4.29	0.32	1.41	12	11	0.0	0	10.3	SE	29	SW	12	5	16	9	6.1	69
LAKELAND U	214			90	72	80.9	0.3	95	19	65	5	19	0			5.12	- 2.08	0.97	15	18	0.0	0	6.8					2	17	11	6.2	58
MIAMI BEACH	9			88	77	82.4	1.3	92	13	69	5	4	0			4.20	- 1.43	2.14	9	6	0.0	0						1	20	9	6.2	61
MIAMI	7	1015.1	1016.3	87	74	80.6	- 0.2	90	12	69	7+	1	0	73	79	6.80	- 0.57	1.21	17	17	0.0	0	8.8	ESE	30*	WNW	5	2	16	12	6.9	
ORLANDO	106	1011.9	1016.3	93	72	82.4	2.1	98	19+	66	7	24	0	70	73	6.67	- 0.29	3.92	13	13	0.0	0	9.2	SW	29*	W	28	3	17	10	6.2	
PENSACOLA U	13			87	74	80.2	- 0.3	95	10	67	3	7	0			8.24	3.02	2.78	15	12	0.0	0	7.7	SW	24	NE	9					58
TALLAHASSEE	58	1013.2	1015.8	89	70	79.7	- 0.5	95	14+	61	3	12	0	71	79	9.23	2.69	1.68	19	21	0.0	0	8.6	S	42*	NNW	28	1	17	12	7.1	
TAMPA	19	1015.5	1016.4	89	73	80.7	0.1	94	19	66	6	14	0	71	76	4.34	- 2.94	1.52	16	15	0.0	0	11.3	SW	35*	ESE	23	3	13	14	6.5	82
WEST PALM BEACH	15	1015.8	1016.8	89	73	81.3	0.3	94	12	67	6	15	0	72	76	2.92	- 4.61	0.71	14	15	0.0	0	7.4	ESE	23*	SW	17+	5	12	13	6.7	
GEORGIA																																
ATHENS	803	987.8	1016.4	84	65	74.6	- 3.0	96	10	57	2	9	0	65	77	12.22	8.34	5.41	14	10	0.0	0	6.9	ENE	21*	E	1	9	5	16	6.3	
ATLANTA	1005	974.5	1015.8	83	66	74.3	- 2.5	94	14	59	1	8	0	65	77	6.68	2.85	1.73	12	6	0.0	0	6.3	ENE	29*	N	21	10	6	14	6.0	62
AUGUSTA	143	1008.3	1014.9	88	67	77.4	- 1.5	100	10	58	3+	13	0	67	74	4.77	1.73	1.69	12	10	0.0	0	6.9	NE	32*	SSW	21	8	6	16	6.6	
COLUMBUS	385	1001.3		89	68	78.2	- 1.2	101	14	55	3	12	0			4.30	0.62	1.85	10	8	0.0	0	7.1		29*	SW	20	11	5	14	6.1	
MACON	356	1002.1	1015.5	89	69	78.9	- 1.8	102	14	56	3	14	0	66	70	4.70	1.36	2.19	11	6	0.0	0	7.0	NW	27	SW	20	11	5	14	5.9	58
ROME	637	993.2		85	63	74.1	- 2.3	97	10	52	2	9	0			5.80	2.04	1.94	16	11	0.0	0						7	7	16	6.7	
SAVANNAH	48	1012.8	1015.3	89	69	79.1	- 0.6	98	14	62	3+	15	0	69	77	14.39	9.30	4.06	13	15	0.0	0	8.9	SW	34	N	11	8	5	17	6.7	60
THOMASVILLE U	283			88	69	78.8	- 2.0	97	15	62	3+	13	0			10.54	5.72	1.94	17	12	0.0	0						2	13	15	7.3	
HAWAII																																
HILO	31	1015.7	1017.4	82	67	74.5	0.2	84	28+	64	14+	0	0	66	79	10.91	4.12	2.83	28	0	0.0	0	8.8	WSW	21	ENE	22+	2	8	20	7.7	31
HONOLULU	7	1016.6	1017.0	86	73	79.2	1.3	87	28+	67	14	0	0	65	65	0.33	0.00	0.14	8	1	0.0	0	11.6	ENE	33	NE	20	8	17	5	5.2	71
KAHULUI	44	1014.0	1016.7	85	68	76.6		89	26	62	14	0	0	65	70	0.06		0.02	4	0	0.0	0	21.8	ENE	44*	ENE	3	13	13	4	4.6	79
LIHUE	115	1012.9	1018.3	84	71	77.8	1.2	86	3	64	14	0	0	67	73	1.95	0.49	0.50	18	0	0.0	0	13.4	NE	33	E	31	1	18	11	6.9	58
IDAHO																																
BOISE	2838	916.5	1011.4	76	52	63.9	- 0.9	93	18	42	3+	4	0	44	54	1.90	1.01	0.86	12	3	0.0	0	7.9	WNW	29	NW	25	6	11	13	6.3	57
IDAHO FALLS 42NW R	4790			70	43	56.8	- 3.0	85	27	31	30	0	1			2.80	1.56	0.84	10				9.3	SSW	38A	SSW	21					
IDAHO FALLS 46W R	4933	846.4		70	44	57.0	- 2.8	84	28+	32	30	0	1			2.84	1.75	1.15	13	4	0.0	0	7.7	SW	28A	SW	21					
LEWISTON	1413	960.9		77	55	65.8	1.0	96	18+	45	23	5	0			1.39	- 0.34	0.82	8	3	0.0	0						5	11	14	6.7	
POCATELLO	4444	861.2	1012.3	72	46	59.1	- 3.7	87	27	37	30	0	0	43	61	2.74	1.78	0.71	15	9	0.0	0	7.9	SW	33	W	28	10	5	15	6.1	53
ILLINOIS																																
CAIRO U	314	1001.7		89	69	78.7	0.8	100	9	58	21	14	0			2.30	- 1.83	0.99	6	4	0.0	0	6.3	S#	40	NW	10	9	17	4	4.9	79
CHICAGO O HARE	658	990.3	1014.8	82	56	69.0		92	30+	36	22	7	0	54	60	2.30		0.69	6	5	0.0	0	8.3	SW	41*	N	8	9	17	4	4.8	
CHICAGO MIDWAY	610	992.4	1014.9	84	62	73.4	2.7	97	30	46	22	10	0	55	56	2.39	- 1.68	0.86	7	6	0.0	0	8.5	SW	49	N	8	8	18	4	4.7	76

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature									Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
ILLINOIS	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MOLINE	582	992.5	1014.4	87	60	73.5	2.1	98	8+	45	22+	14	0	60	65	1.02	- 3.35	0.81	4	4	0.0	0	8.2	E	33	N	7	6	16	8	5.4	69
PEORIA	652	993.3	1015.5	86	60	73.0	1.3	96	30	46	21	13	0	58	61	1.53	- 2.55	1.47	4	6	0.0	0	7.9	S	29	W	5	6	19	5	5.3	80
ROCKFORD	728	987.9	1014.8	83	59	71.1	1.4	95	7	46	22+	8	0	57	64	4.27	- 0.03	1.12	9	8	0.0	0	8.4	SSW	46*	NNW	7	9	15	6	5.0	
SPRINGFIELD	588	991.3	1014.2	88	62	75.3	2.3	99	9+	46	21	16	0	60	61	1.30	- 3.15	0.60	6	6	0.0	0	9.1	SW	49	NW	10	10	16	4	4.6	80
INDIANA																																
EVANSVILLE	381	999.4	1015.1	89	60	74.5	- 0.3	97	9+	45	22	14	0	61	65	1.23	- 2.51	0.52	7	4	0.0	0	6.8	NW	40	NW	10	11	12	7	4.6	85
FORT WAYNE	791	984.5	1015.3	84	58	70.8	0.7	94	28+	43	22	7	0	57	63	2.88	- 1.29	1.04	10	10	0.0	0	6.8	NW	45	SW	10	11	13	6	4.7	78
INDIANAPOLIS	793	985.8	1015.4	84	59	71.3	0.2	93	28	47	22	9	0	60	69	5.30	0.68	3.80	7	6	0.0	0	5.2	N	36*	NW	10	8	17	5	5.0	73
SOUTH BEND	768	987.2	1015.0	82	57	69.5	0.5	94	30	42	22	5	0	56	64	1.81	- 1.77	0.82	6	6	0.0	0	7.9	NNW	35*	SW	10	8	18	4	4.4	
IOWA																																
BURLINGTON	694	989.3	1014.6	87	63	75.3	3.2	97	30	50	22	13	0	59	59	0.97	- 4.04	0.59	5	2	0.0	0	8.6	SSW	36	SW	5	7	16	7	5.5	86
DES MOINES	948	983.0	1013.8	85	63	74.0	2.1	96	30+	49	21	9	0	61	66	1.13	- 3.58	0.38	9	7	0.0	0	9.6	S	60	NE	28	9	11	10	5.5	69
DUBUQUE	1065	989.1		83	59	70.8	2.9	95	30	43	21	6	0			2.75	- 1.46	1.75	6	7	0.0	0			25*	WNW	10+	6	15	9	5.6	
SIOUX CITY	1095	971.2	1011.6	85	64	74.7	3.8	96	8	53	11	7	0	62	68	5.74	1.41	3.14	14	13	0.0	0	10.0	SSE	40	NW	26	9	11	10	5.3	68
WATERLOO	868	982.6	1014.1	85	59	72.3	2.7	98	7	46	21	9	0	60	65	4.52	- 0.31	2.29	9	8	0.0	0	9.5	S	43*	NNW	8	8	14	8	5.6	
KANSAS																																
CONCORDIA	1470	961.9	1010.7	90	65	77.2	2.6	101	7	56	17+	16	0	62	64	4.17	- 0.03	1.21	12	13	0.0	0	13.2	SSE	38	NW	11+	12	11	7	4.3	64
DODGE CITY	2594	924.4	1010.4	88	63	75.6	1.2	98	30+	55	17+	15	0	59	60	2.18	- 0.85	1.08	8	11	0.0	0	13.7	SSE	40	SE	24	13	9	8	4.3	72
GOODLAND	3645	884.5	1008.3	90	58	74.2	4.5	107	29	43	10	17	0	50	51	1.36	- 1.30	0.98	6	5	0.0	0	16.9	S	44*	SSE	21	18	9	3	3.2	
TOPEKA	877	977.4	1012.4	88	66	77.3	2.6	98	7	54	18	12	0	65	68	2.71	- 1.80	1.13	10	8	0.0	0	12.3	S	38	N	20	10	9	11	5.5	74
WICHITA	1321	963.7	1011.2	90	68	78.8	2.3	100	30+	58	18	17	0	64	64	4.51	0.30	1.67	8	10	0.0	0	11.6	S	42	S	8	12	8	10	4.8	71
KENTUCKY																																
COVINGTON	869	983.7	1015.2	82	56	69.2	- 3.6	91	30+	44	13+	3	0	58	72	1.59	- 2.30	0.75	9	8	0.0	0	5.5	SSW	46*	NW	10	7	13	10	5.9	
LEXINGTON	979	980.5	1015.8	82	62	72.0	- 1.6	91	10	53	12	2	0	60	69	3.27	- 1.45	1.00	11	8	0.0	0	6.5	SSW	29*	NNW	10+	7	16	7	5.5	
LOUISVILLE	474	996.2	1015.1	84	62	73.0	- 0.4	93	10	51	22	6	0	62	70	4.18	0.19	1.62	8	7	0.0	0	5.4	S	43	N	10	8	14	8	5.6	61
LOUISIANA																																
ALEXANDRIA	92	1010.0	1014.4	92	67	79.6		99	13	56	1	22	0	69	77	1.34		0.30	9	10	0.0	0	4.5	SW	32	WNW	16	10	14	6	5.1	
BATON ROUGE	64	1011.7	1014.8	92	70	81.0	0.6	100	15+	64	1	20	0	71	76	4.11	0.02	1.22	11	12	0.0	0	6.4	SW	29	S	19	9	13	8	5.4	
LAKE CHARLES	14	1013.1	1014.4	89	72	80.5	- 0.7	95	15	66	1	12	0	72	78	4.60	- 0.12	1.99	8	15	0.0	0	7.0	SSW	31*	E	2	6	17	7	5.6	
NEW ORLEANS	3	975.5	1014.8	89	70	79.5	- 0.1	97	14	64	1	13	0	73	81	4.16	- 0.27	1.55	13	12	0.0	0	5.9	SW	22*	W	21	12	10	8	5.0	
NEW ORLEANS AUDUBON	6	1008.2		89	73	80.9		95	14+	67	1	14	0			8.45		2.52	15	15	0.0	0	3.0	SW	13	NE	2+	13	7	10	5.4	58
SHREVEPORT	252	1005.1	1014.3	93	71	82.1	1.5	100	15+	62	1	26	0	69	69	2.65	- 0.69	1.75	4	8	0.0	0	8.1	S	37	SSE	30	12	14	4	4.5	75
MAINE																																
CARIBOU	624	987.9	1011.1	75	49	61.9	2.9	92	30+	37	10	2	0	49	65	1.68	- 2.39	0.64	8	4	0.0	0	10.2	WSW	44*	NNW	30	4	13	13	6.8	
PORTLAND	61	1008.7	1012.8	76	50	63.1	1.0	93	27	40	11	3	0	54	72	1.95	- 1.23	0.94	7	3	0.0	0	8.2	S	33	NW	27	4	17	9	6.0	62
MARYLAND																																
BALTIMORE	146	1010.0	1014.7	84	62	73.1	0.6	98	27	51	22	8	0	59	66	9.16	5.87	3.35	12	5	0.0	0	8.6	W	35	N	10	9	14	7	5.4	65
BALTIMORE U	14			84	66	75.1	0.4	98	27	58	22	10	0			4.84	0.97	2.18														
FREDERICK	294			82	58	70.2	- 1.1	95	27	46	23+	7	0			2.67	- 0.93	1.55	9		0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	989.6	1012.7	77	56	66.2	1.1	92	27+	45	8	2	0		71	1.39	- 2.36	0.33	13		0.0	0	12.2	SSW	43	W	22					63
BOSTON	15	1008.5	1013.2	79	60	69.5	1.7	95	27+	49	8	4	0	53	61	1.92	- 1.56	0.69	11	3	0.0	0	12.7	SSW	32	W	22	6	14	10	6.1	69
NANTUCKET	43	1013.5	1014.2	71	55	63.3	2.5	88	26	45	8	0	0	56	82	1.80	- 1.12	1.27	7	0	0.0	0	11.2	WSW	30	NW	16	9	6	15	6.4	67
PITTSFIELD	1170			76	51	63.5	0.4	89	28	41	1	0	0			3.98	- 0.30	1.27	13		0.0	0										
WORCESTER	986	977.5	1013.7	76	55	65.5	1.0	88	28+	45	22+	0	0	52	64	2.48	- 1.36	0.62	11	3	0.0	0	8.6	W	28*	W	22	6	12	12	6.1	
MICHIGAN																																
ALPENA	689	989.4		77	49	63.1	1.0	94	30	35	23	3	0			3.78	1.11	1.03	11	8	0.0	0	6.5	SW	24	E	10	9	11	10	5.4	71
DETROIT	619	988.6	1015.0	83	59	70.8	1.6	94	27+	46	21	7	0	55	58	3.10	0.27	2.03	6	6	0.0	0	7.6	SE	43	NW	9	11	12	7	4.7	75
DETROIT M WAYNE CO	633	991.2	1015.1	82	55	68.2	- 0.2	94	27	40	21	4	0	58	72	2.59	- 0.72	1.62	6	6	0.0	0	5.3	WSW				9	13	8	5.1	
DETROIT WILLOW RUN	711	987.0	1015.0	82	54	68.0	- 1.6	93	27+	40	21	7	0	55	66	2.01	- 1.27	1.38	5	4	0.0	0	8.4	SW	46*	SSW	10	11	14	5	4.6	
ESCANABA U	594	991.8		71	53	62.2	1.1	86	30+	39	21	0	0			1.45	- 1.71	0.73	9	6	0.0	0	8.9		30	NW	11	7	14	9	5.5	64

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days					No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
FLINT	766	988.1	1015.7	81	54	67.4	0.2	93	27	37	22	5	0	55	67	1.79	- 1.33	1.25	6	5	0.0	0	7.3	WSW	52*	WNW	10	12	9	9	4.9	
GRAND RAPIDS	689	990.2	1015.2	82	56	69.1	1.7	96	30	41	22	6	0	54	61	2.71	- 0.60	1.94	7	6	0.0	0	8.2	WNW	32	SW	10+	11	14	5	4.6	85
LANSING	852	983.3	1014.9	81	55	68.2	0.8	92	30+	38	22	6	0	54	62	6.09	2.75	4.35	6	5	0.0	0	9.7	S	63	SE	9	13	8	9	4.7	72
MARQUETTE U	677	988.5		72	51	61.3	1.2	101	30	38	11	3	0			3.99	0.53	1.03	14	8	0.0	0	7.1	NW#	32	SW	8	9	6	15	6.0	67
MUSKEGON	627	992.0	1015.0	79	54	66.6	1.4	91	27	37	22	1	0	55	70	2.63	- 0.07	1.45	8	6	0.0	0	8.1	NW	32*	NW	8	14	11	5	3.9	
SAULT STE MARIE	721	991.7	1014.4	74	48	61.2	2.7	91	30	39	21+	1	0	51	72	1.61	- 1.69	0.60	11	4	0.0	0	8.1	WNW	29*	SE	10	10	9	11	5.7	73
MINNESOTA																																
DULUTH	1426	972.9	1014.3	74	49	61.3	2.0	92	30	33	12	1	0	52	76	4.04	- 0.23	1.47	12	7	0.0	0	9.8	ESE	40	SW	25	4	11	15	7.0	57
INTERNATIONAL FALLS	1179	972.1	1013.0	76	52	64.0	4.1	90	27	38	12	1	0	54	73	2.08	- 1.79	0.51	12	8	0.0	0	6.7	SE	25*	ENE	7	4	9	17	7.0	
MINNEAPOLIS	822	980.2	1013.3	81	59	69.8	2.5	99	30	45	12+	5	0	58	68	1.91	- 2.09	0.64	13	11	0.0	0	9.8	SSE	32	SE	28+	10	10	10	5.7	74
ROCHESTER	1297	966.8	1014.2	82	57	69.5	3.0	95	30	43	21	3	0	58	69	3.37	- 1.09	1.49	12	13	0.0	0	11.9	S	38*	SE	8	10	11	9	5.5	
ST CLOUD	1034	974.3		80	57	68.5	3.3	98	30	41	12	3	0			2.51	- 1.98	0.86	11	8	0.0	0						8	9	13	6.0	
MISSISSIPPI																																
JACKSON	305	1002.6	1014.5	91	70	80.7	1.3	101	15+	60	3	19	0	67	68	3.29	- 0.56	1.77	11	6	0.0	0	6.6	ESE	37	W	16	9	13	8	5.4	72
MERIDIAN	292	1001.5	1015.1	90	67	78.5	- 1.0	103	14	56	3	16	0	67	74	3.97	- 0.10	1.18	9	10	0.0	0	5.2	S	20*	S	19	8	12	10	5.9	
VICKSBURG U	234	1005.3		89	71	79.9	0.2	97	14+	65	22	13	0			2.41	- 1.05	0.75	10	9	0.0	0	6.2		26	SW	30	14	9	7	4.9	73
MISSOURI																																
COLUMBIA	778	985.5	1013.3	87	65	76.2	2.2	98	13	56	18+	13	0	63	65	1.26	- 3.08	0.58	8	6	0.0	0	8.9	SSE	32	N	28	12	13	5	4.6	70
KANSAS CITY	742	978.5	1012.6	89	70	79.3	3.9	99	13	60	18+	14	0	65	62	3.21	- 1.36	0.99	10	8	0.0	0	9.2	S	37	NE	28	7	14	9	5.4	84
ST JOSEPH	809	982.7		89	68	78.2	4.2	99	30+	54	17	15	0			1.11	- 4.82	0.52	7	5	0.0	0	9.1	SSW	23*	ENE	28+	13	10	7	4.5	
ST LOUIS	535	994.3	1014.8	87	64	75.4	- 0.2	96	10	50	21	12	0	62	65	3.87	- 0.42	1.36	6	4	0.0	0	8.6	WSW	45	W	12	10	14	6	4.9	77
ST LOUIS RFC	465			88	68	77.9	1.3	96	28+	53	21	13	0			2.66	- 1.26	1.34	5		0.0	0										
SPRINGFIELD	1265	967.6	1014.0	89	67	78.1	3.9	100	14	56	22	14	0	67	70	6.65	1.63	4.10	10	9	0.0	0	8.8	SSE	43	NW	12	10	11	9	5.3	76
MONTANA																																
BILLINGS	3567	888.3	1010.9	73	51	62.1	- 1.5	90	27+	45	23+	2	0	49	67	3.16	0.61	0.80	15	8	0.0	0	10.5	SW	35	W	21	8	10	12	5.5	67
GLASGOW	2277	936.4		74	53	63.6	1.3	88	27	44	23	0	0			5.36	2.38	1.79	9	9	0.0	0						8	9	13	6.3	
GREAT FALLS	3662	885.6	1011.2	73	50	61.4	1.0	90	18	38	23	1	0	44	58	2.88	- 0.02	0.78	16	4	0.0	0	11.2	SW	38	SW	29+	4	10	16	7.0	51
HAVRE	2582	923.6		76	50	63.3	2.3	95	18	38	23	4	0			1.88	- 0.85	0.39	15	9	0.0	0	9.4	SW#	46	SW	28	4	10	16	7.3	52
HELENA	3893	871.9	1012.0	71	49	60.0	0.5	88	18	40	26+	0	0	43	58	2.59	0.36	0.66	17	11	0.0	0	8.3	WNW	40	W	25	4	10	16	6.9	46
KALISPELL	2965	909.1		72	46	58.7	0.1	89	18	36	2	0	0			3.94	1.73	1.09	17	7	0.0	0	6.3					6	8	16	6.9	
MILES CITY	2629			79	55	66.8	1.2	93	27	47	23	2	0			4.78	2.07				0.0	0	9.1	SW	35*	W	21					
MISSOULA	3190	899.9	1013.1	72	47	59.1	0.6	90	18	32	23	1	1	45	63	3.29	1.38	0.73	17	7	0.0	0	6.8	NNW	27	SW	29	4	7	19	7.3	45
NEBRASKA																																
GRAND ISLAND	1841	945.6	1010.6	88	61	74.1	1.6	105	28	50	17+	11	0	60	66	3.22	- 0.57	1.54	10	9	0.0	0	12.7	SSE	35*	SSW	5	14	8	8	4.5	
LINCOLN U	1150			89	67	77.6	4.5	100	29+	57	17+	12	0			6.80	2.30	5.38	10	7	0.0	0	13.2	S#	36	SE	24+	8	13	9	5.4	68
NORFOLK	1544	956.2		86	63	74.6	3.7	100	29	52	11	10	0			4.14	- 0.12	1.25	9	12	0.0	0						10	11	9	5.0	
NORTH PLATTE	2779	911.4	1008.2	87	59	72.9	3.8	104	28	46	17	9	0	57	61	1.82	- 1.43	1.21	9	10	0.0	0	11.8	SSE	45	S	6	15	11	4	4.2	82
OMAHA	978	972.7	1011.8	87	66	76.3	3.2	97	7	56	21	14	0	62	63	4.67	0.14	1.41	10	9	0.0	0	10.9	SSE	44	N	5	8	18	4	4.6	76
OMAHA N OMAHA AP	1323	964.7		85	64	74.4	3.6	94	7	53	11	9	0			6.97	2.35	2.17	12	9	0.0	0						8	15	7	5.0	
SCOTTSBLUFF	3950	875.6	1008.5	84	55	69.8	2.9	98	29+	47	6	11	0	51	58	3.56	0.46	1.59	10	11	0.0	0	10.8	SE	38*	SE	23	11	13	6	4.6	
VALENTINE	2587	920.1		85	58	71.4	3.9	105	28	49	6	6	0			2.76	- 0.35	0.87	10	10	0.0	0	11.7	S#	65	S	21	9	9	12	5.8	59
NEVADA																																
ELKO	5075	843.1	1012.6	69	41	55.0	- 5.0	84	26	31	30	0	1	40	60	2.61	1.90	0.64	17	6	0.0	0	7.0	SW	25*	WSW	8	5	11	14	6.4	
ELY	6257	807.0	1010.6	69	39	53.7	- 4.9	83	20	32	10+	0	4	35	58	3.53	3.03	1.50	17	13	T	T	8.1	SSE	38	SW	28	10	8	12	5.5	71
LAS VEGAS	2162	942.6	1007.4	93	64	78.6	- 4.8	106	19	56	24+	19	0	32	20	0.15	0.11	0.15	1	1	0.0	0	13.0	SW	38*	NNW	1	19	8	3	2.4	92
RENO	4404	861.1	1013.1	75	43	59.0	- 1.1	86	19+	29	29	0	1	43	58	1.10	0.73	0.50	7	8	T	T	6.6	WNW	36	NW	28+	13	9	8	4.7	75
WINNEMUCCA	4299	865.7		73	45	58.9	- 2.6	87	26+	33	30+	0	0			2.58	1.82	1.09	13	7	0.0	0	8.1	NE	57	W	9	8	10	12	6.0	42
NEW HAMPSHIRE																																
CONCORD	339	1001.8	1013.1	81	52	66.4	1.9	96	26	40	11	6	0	53	65	1.22	- 2.38	0.62	9	3	0.0	0	6.7	S	26	W	22+	6	16	8	6.1	66
MT WASHINGTON OBS	6262	806.8		54	40	46.8	1.9	65	4	20	10	0	5		81	4.99	- 1.51	1.44	13	3	T	T	23.3	W	90Y	W	22	4	14	12	6.7	50
NEW JERSEY																																
ATLANTIC CITY	58	1012.8	1015.0	81	60	70.5	0.5	97	28+	50	22	6	0	59	70	3.07	0.24	1.53	8	4	0.0	0	9.6	S	23*	NE	15+	6	17	7	5.9	57

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation						Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
				Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32°F. or below			Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																																
ATLANTIC CITY U	10			77	63	69.7	0.7	94	25	54	22+	4	0			2.13	- 0.91	0.85	10				13.6		41*	NW	10					
NEWARK	11	1013.2	1014.6	82	62	72.0	0.7	99	27+	55	22+	6	0	56	62	2.01	- 1.43	0.66	11	6	0.0	0	9.4	SSW	23*	WSW	22+	9	7	14	6.0	
TRENTON U	56	1006.9		82	61	71.2	0.2	98	27	51	22	7	0			1.53	- 2.07	0.80	8	6	0.0	0	8.0	NW#	25	S	29+	8	8	14	5.8	61
NEW MEXICO																																
ALBUQUERQUE	5310	846.0	1007.6	90	59	74.6	- 0.3	99	30+	44	9	16	0	30	23	0.11	- 0.46	0.09	2	4	0.0	0	10.9	S	41	E	16	21	7	2	2.4	88
CLAYTON	4969	844.3		85	56	70.2	0.0	97	29	46	18	10	0			2.23	0.75	1.11	5	8	0.0	0						17	6	7	3.4	
RATON	6379	805.5		82	50	66.0	0.6	95	30	40	10	5	0			1.76	0.06	0.46	10	13	0.0	0						15	9	6	3.9	
ROSWELL	3619	890.2		94	60	76.7	1.1	103	23	49	10+	25	0			0.60	- 0.45	0.48	4	5	0.0	0	10.5		59	NW	18	22	3	5	2.9	79
SILVER CITY	5373	834.6		89	53	71.2		99	30	44	10	14	0			0.14		0.09	2	3	0.0	0						24	6	0	1.8	
NEW YORK																																
ALBANY	277	1010.1	1014.1	79	56	67.3	0.0	92	30+	48	17+	5	0	54	65	2.94	- 0.31	0.89	8	4	0.0	0	6.6	SSE	29	W	22	2	14	14	7.1	55
BINGHAMTON	1590	955.8	1014.1	75	55	65.4	0.9	88	28+	44	22	0	0	55	72	4.24	0.39	1.65	9	4	0.0	0	8.0	WNW	27	NW	22	5	11	14	6.5	67
BUFFALO	705	987.4	1015.1	79	55	66.7	1.9	94	30	46	16	4	0	54	66	0.61	- 1.93	0.28	6	4	0.0	0	9.3	SW	29	SW	22+	8	13	9	5.8	69
NEW YORK U	132	1003.3	1014.5	80	61	70.9	- 0.5	96	26	54	22	5	0	62	54	2.72	- 0.59	0.92	10	5	0.0	0	6.9	W	20	SW	21+	11	10	9	5.3	53
NEW YORK LA GUARDIA	19	1012.4	1014.3	79	63	70.9	- 0.6	96	27	57	22+	4	0	56	64	1.43	- 1.95	0.61	8	5	0.0	0	10.2	S	24	NW	21+	8	12	10	5.9	
ROCHESTER	543	995.7	1014.8	80	55	67.1	0.2	93	30+	46	16	3	0	53	64	0.22	- 2.34	0.08	4	1	0.0	0	9.2	WSW	26	W	22	8	14	8	5.4	71
SCHENECTADY	217			79	56	67.6	- 0.8	92	30+	49	17	4	0			2.36	- 1.14	1.00	9	4	0.0	0						18	6	6	3.9	
SYRACUSE	417	992.1	1013.8	78	55	66.6	- 0.7	92	30+	45	21+	3	0	54	64	2.49	- 0.47	1.90	7	3	0.0	0	7.2	WNW	32	NW	20	9	10	11	5.7	69
NORTH CAROLINA																																
ASHEVILLE U	2203	938.1		78	60	69.2	- 2.6	91	10	50	2	2	0			2.71	- 0.81	0.71	12	7	0.0	0	6.9	NW#	25	NW	12	6	9	15	6.8	49
CAPE HATTERAS R	7	1014.1	1014.8	79	66	72.6	- 2.6	89	7	57	26	0	0	67	82	7.80	3.66	3.70	13	7	0.0	0	10.5	SW	23*	SW	21+	2	15	13	7.5	55
CHARLOTTE	735	987.9	1015.6	85	66	75.3	- 1.3	98	10	58	2	9	0	64	71	2.01	- 1.60	0.60	10	4	0.0	0	6.7	NE	26	SW	11+	8	6	16	6.7	66
GREENSBORO	891	984.4	1016.0	82	62	71.8	- 3.0	95	10	54	24+	2	0	61	74	3.54	0.07	1.54	10	7	0.0	0	6.8	SW	28	SW	20	4	10	16	6.9	53
RALEIGH	433	1001.6	1015.1	83	62	72.7	- 2.4	96	10	54	13	4	0	63	74	1.72	- 1.98	0.54	11	6	0.0	0	6.0	SW	20*	NW	6	5	12	13	6.6	57
WILMINGTON	30	1012.4	1015.3	85	67	75.9	- 1.8	96	11+	59	1	9	0	68	80	3.86	- 0.40	0.99	14	6	0.0	0	6.7	SW	38	SW	20	2	14	14	7.2	56
WINSTON SALEM	967	981.0	1015.8	82	64	73.1	- 2.6	96	10	55	2	3	0	60	68	4.21	0.57	1.21	9	7	0.0	0	7.5	NE	23*	NNW	3	5	10	15	6.8	
NORTH DAKOTA																																
BISMARCK	1647	948.1	1010.3	79	57	68.2	3.7	93	29	48	17	1	0	55	65	5.45	2.05	1.25	11	14	0.0	0	9.7	SSE	50	N	23	4	14	12	6.2	76
FARGO	900	977.3	1011.2	80	58	68.8	4.0	96	29	40	12	3	0	59	71	1.69	- 1.35	0.54	10	8	0.0	0	10.3	SSE	50	SW	7	5	10	15	6.6	65
WILLISTON	1899	943.3		77	53	65.0	1.9	90	28	45	27	1	0			3.00	- 0.31	1.13	12	10	0.0	0	10.8	NE#	61	NW	29	8	9	13	6.4	61
OHIO																																
AKRON	1209	977.9	1015.6	80	57	68.3	0.4	94	27	42	21	3	0	54	64	2.45	- 1.81	1.18	9	7	0.0	0	6.5	WSW	29*	NW	9	12	9	9	4.9	
CINCINNATI OBS	761			84	61	72.5	- 0.9	93	8	49	22	6	0			1.22	- 2.96	0.34	9	8	0.0	0	3.4	S#	34	NW	10					60
CINCINNATI U	553	992.3		86	63	74.6	0.2	96	10	54	13+	11	0			0.75	- 3.30	0.22	7	8	0.0	0										
CLEVELAND	777	987.7	1015.3	80	56	67.8	0.6	93	27	41	23+	3	0	55	64	1.93	- 1.50	1.03	6	3	0.0	0	8.0	SSE	40	W	10	13	8	9	4.7	78
COLUMBUS	812	986.1	1015.7	84	58	70.8	- 0.5	95	10	45	22+	9	0	56	61	1.25	- 2.91	0.55	9	6	0.0	0	6.8	S	36	NW	10	10	11	9	5.2	69
COLUMBUS U	724			83	62	72.8	0.1	94	27+	47	12	7	0			1.77	- 2.02	0.60	8	5	0.0	0										
DAYTON	997	983.1	1015.4	83	59	70.9	- 0.6	92	9+	48	21+	6	0	56	61	3.30	- 0.80	1.26	6	5	0.0	0	7.6	SSW	53	W	10	10	10	10	5.0	58
MANSFIELD	1296			80	56	68.3	0.5	91	27+	42	21+	2	0			1.77	- 2.46	1.07	9	6	0.0	0						10	12	8	5.0	
SANDUSKY U	606	993.5		81	60	70.4	- 0.2	95	28	49	22+	5	0			1.18	- 2.92	0.61	8	5	0.0	0	6.9		71	W	10	13	16	1	3.7	79
TOLEDO	676	997.8	1014.9	82	54	67.9	- 0.4	96	27	38	21	6	0	56	68	4.31	0.52	2.12	8	6	0.0	0	7.0	SW	42	SW	10	9	13	8	5.1	73
YOUNGSTOWN	1178	973.4	1015.6	78	54	66.2	- 1.4	91	27	40	23	2	0	55	70	2.10	- 1.48	1.00	10	4	0.0	0	7.6	NW	29*	WNW	10	10	9	11	5.3	
OKLAHOMA																																
OKLAHOMA CITY	1280	969.7	1011.8	90	68	78.7	2.2	99	15	60	11	19	0	65	65	2.35	- 2.12	1.65	5	5	0.0	0	12.5	SSE	54	W	16	13	7	10	5.3	79
TULSA	676	988.7	1012.7	93	70	81.7	4.4	100	28+	62	17+	25	0	68	67	0.53	- 4.16	0.47	4	3	0.0	0	11.7	SSE	28	N	16	11	13	6	5.3	62
OREGON																																
ASTORIA	8	1017.5	1018.2	63	49	55.8	- 1.0	75	15+	43	13	0	0	50	81	1.80	- 1.22	0.53	16	0	0.0	0	8.7	NW	24*	NW	16+	3	7	20	7.9	
BURNS U	4151	871.5		71	43	57.0	- 2.8	88	18	31	22	0	1			0.83	- 0.05	0.36	7	4	0.0	0						6	11	13	6.2	
EUGENE	361	1004.2		71	49	60.1	- 0.8	92	15	42	3	1	0			1.40	- 0.02	0.69	10	1	0.0	0	6.1		20*	NW	5	8	2	20	6.9	
MEACHAM	4050			64	43	53.7	0.0	86	28	35	22+	0	0			0.69	- 1.76	0.30	11	0	0.0	0						5	9	16	6.7	
MEDFORD	1298	968.5	1016.2	78	48	63.1	- 1.1	98	15	37	10	6	0	47	60	0.92	- 0.10	0.52	6	1	0.0	0	6.1	WNW	21*	N	22	9	9	12	5.7	
PENDLETON	1482	960.4	1013.6	78	53	65.8	0.5	96	16	43	22	5	0	42	45	0.21	- 0.96	0.13	5	0	0.0	0	12.3	W	32*	W	5	9	11	10	5.7	
PORTLAND	21	1011.5	1017.1	68	52	60.0	- 2.0	90	15	44	3	1	0	49	69	1.71	0.04	0.46	13	0	0.0	0	7.3	NW	25	NW	2	6	5	19	7.5	43

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
				Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90°F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Station Ø Mb.	Sea level Mb.	°F.	°F.	°F.	F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND U	30			71	54	62.3	- 1.1	93	15	48	3	1	0			2.40	0.72	0.71	13		0.0	0										
ROSEBURG	505	998.8		74	49	61.6	0.1	96	15	39	3	4	0			1.83	0.33	0.97	9	0	0.0	0	5.8	N#	22	NW	2	5	11	14	6.7	58
SALEM	195	1010.5	1017.8	71	47	59.1	- 2.5	93	15	39	27+	3	0	49	71	0.85	- 0.60	0.35	10	0	0.0	0	7.0	NW	21*	WNW	2	6	5	19	7.3	
SEXTON SUMMIT R	3836	884.6		62	43	52.7	- 3.0	85	15	33	3	0	0			1.47	- 0.06	0.58	7	0	T	T	13.4	N				10	8	12	5.8	
PACIFIC AREA																																
CANTON ISLAND	11	1009.3	1009.5	89	79	83.8	0.0	90	16+	74	13	10	0	74	75	1.74	- 0.91	0.79	11	0	0.0	0	11.3	E	23*	E	29+	6	12	12	6.2	
ENIWETOK	16	1009.3		87	78	82.3	- 0.5	90	10+	75	30+	2	0			9.10	5.73	2.75	26	1	0.0	0										
TAGUAC GUAM R	361			86	74	79.9	- 0.3	88	25	69	13+	0	0			7.11	1.24	1.93	28	4	0.0	0			19	SE	29+					89
KOROR R	94	1007.0	1009.9	88	76	81.9	0.8	91	8	72	22	7	0	77	86	2.11	1.27	0.53	22	0	0.0	0	15.7	E	30	SE	8	0	14	16	7.3	57
KWAJALEIN		1009.9	1010.0	87	77	82.1	0.7	89	21+	73	13	0	0	76	84	13.99	1.01	3.43	19	4	0.0	0	6.9	S	20	SW	15	0	2	28	9.7	
JOHNSTON	7	1013.4	1014.1	82	77	79.2	- 1.1	83	22	75	18+	0	0	74	84	13.76	5.08	2.58	26	2	0.0	0	9.9	E	31	SE	18	2	6	22	8.4	
PONAPE R	123	1004.9	1009.5	88	73	80.4	0.3	91	5	70	20	7	0	75	88	9.60	- 7.10	2.82	21	3	0.0	0	2.4	ESE	15	E	19	0	6	24	8.9	52
TRUK MOEN ISLAND	5	1009.7	1009.7	87	76	81.4	0.7	89	15+	74	24+	0	0	75	84	7.64	- 4.23	2.20	18	2	0.0	0	4.4	N	28	SW	17	0	4	26	9.2	31
WAKE	11	1013.6	1013.6	87	77	81.8	0.4	89	29+	73	3	0	0	74	78	3.37	1.47	1.20	14	2	0.0	0	13.2	E	25*	ESE	15	7	12	11	6.2	
YAP R	53	1008.0	1009.1	88	76	81.8	- 0.1	90	26+	73	21+	4	0	76	85	8.77	- 1.95	1.81	18	2	0.0	0	6.1	SW	26	N	21	0	1	29	9.8	65
PENNSYLVANIA																																
ALLENTOWN	376	1000.7	1014.9	82	57	69.5	0.1	96	27+	47	22	4	0	56	67	1.79	- 2.28	0.57	11	6	0.0	0	8.4	WNW	29*	NW	12	8	7	15	6.0	
ERIE	732	989.1	1015.0	77	57	66.6	- 0.1	90	28+	45	23	2	0	54	66	0.85	- 2.20	0.57	8	2	0.0	0	9.4	S	23*	S	11	12	11	7	4.8	
HARRISBURG	335	1001.0	1014.8	84	61	72.3	1.0	99	27	48	22	8	0	58	65	2.36	- 1.06	0.75	13	4	0.0	0	8.4	W	48	W	10	8	9	13	6.0	59
PHILADELPHIA	5	1013.3	1014.6	83	58	70.4	- 0.6	97	28+	47	23	7	0	58	67	2.88	- 1.17	1.23	9	5	0.0	0	8.2	WSW	26	S	29	7	10	13	6.0	59
PITTSBURGH	1137	985.0	1015.5	79	55	67.2	- 1.2	93	27	39	22	2	0	55	68	2.40	- 1.38	1.09	12	5	0.0	0	7.0	NNW	30*	NW	10	6	11	13	6.1	52
PITTSBURGH U	749			82	59	70.5	- 1.4	94	27	47	21	7	0			3.41	- 0.54	0.98	13		0.0	0										
READING U	266	1002.2	1013.8	83	61	72.0	- 0.2	96	27	53	22	6	0			3.65	- 0.07	0.71	12	7	0.0	0	9.3	NW#	41	E	7	10	7	13	5.6	55
SCRANTON	940	980.8	1014.6	79	56	67.4	0.2	92	27	44	16	3	0	55	68	1.93	- 1.98	0.57	10	4	0.0	0	7.0	ESE	23	W	17+	8	9	13	6.4	55
WILLIAMSPORT	527	996.1	1015.0	81	56	68.4	- 0.8	95	27	43	22	4	0	57	70	2.48	- 0.75	0.91	11	7	0.0	0	7.4	W	22*	NNW	6	8	10	12	6.1	
RHODE ISLAND																																
BLOCK ISLAND	110	1009.3		70	57	63.5	0.6	86	28	50	13+	0	0			0.94	- 1.62	0.27	7	1	0.0	0						10	7	13	5.8	
PROVIDENCE	55	1007.4	1013.5	78	58	67.5	1.3	93	27	49	22	3	0	55	68	3.54	0.78	1.57	11	3	0.0	0	10.0	WNW	24*	NW	28+	9	11	10	5.7	60
SOUTH CAROLINA																																
CHARLESTON	41	1013.2	1015.1	88	70	79.2	1.0	98	11	62	2	16	0	69	78	14.34	9.36	5.31	15	15	0.0	0	8.1	S	42Y	W	20	5	11	14	6.9	53
CHARLESTON U	9			85	73	78.9	- 0.7	95	12	64	2	8	0			10.34	6.09	2.30	17		0.0	0	9.8		34	NW	17					
COLUMBIA	217	1002.5	1015.1	87	68	77.5	- 2.2	102	10	59	2	14	0	65	72	4.84	0.99	1.47	12	5	0.0	0	6.8	NE	32*	SW	21	9	7	14	6.2	49
FLORENCE	146	1009.3	1015.0	86	68	77.0	- 1.8	101	11	57	1	14	0	66	75	2.86	- 1.42	0.69	13	5	0.0	0	8.0	NE	23*	WNW	14	8	4	18	6.6	
GNVLE SPARTANBURG	957	979.0	1015.6	84	66	74.9	- 3.4	97	10	58	3+	8	0	63	71	4.73	1.84	1.44	15	7	0.0	0	6.9	NE	29	SW	20	7	7	16	6.6	49
SOUTH DAKOTA																																
HURON	1282	964.0	1010.2	83	59	70.9	2.8	99	29	47	16	3	0	62	75	2.60	- 0.54	0.67	14	13	0.0	0	11.3	SE	44	E	22	7	10	13	6.2	66
RAPID CITY	3165	898.3	1010.0	81	55	68.1	3.2	94	29	49	6	7	0	54	66	5.47	2.39	4.01	13	10	0.0	0	10.0	NNW	42	W	5	13	9	8	4.9	63
SIOUX FALLS	1420	960.8	1011.3	85	62	73.5	5.4	99	29	50	12	7	0	60	66	2.51	- 1.84	0.82	14	12	0.0	0	12.7	S	40*	WNW	26	9	9	12	5.5	
TENNESSEE																																
BRISTOL	1507	962.1	1015.8	80	61	70.4	- 2.3	90	10	53	2	1	0	61	76	4.38	1.00	1.73	13	10	0.0	0	4.0	NE	29*	WNW	7	3	13	14	7.1	
CHATTANOOGA	670	988.3	1015.8	85	65	74.7	- 1.9	95	14+	58	2	7	0	66	79	4.87	1.17	1.19	14	6	0.0	0	5.5	S	31	NW	14	5	8	17	7.1	43
KNOXVILLE	950	981.1	1016.2	82	63	72.4	- 3.8	91	10	56	3	1	0	64	79	3.32	- 0.01	0.75	16	9	0.0	0	5.3	ENE	56	N	14	3	9	18	7.5	30
MEMPHIS	263	1000.2	1014.7	88	69	78.6	- 0.4	97	14+	62	4+	12	0	68	72	4.33	0.65	1.96	7	6	0.0	0	7.5	SE	29	N	16	13	8	9	4.7	84
MEMPHIS U	271			88	72	79.9	0.8	96	14+	66	17	13	0			3.36	- 0.28	1.69	8		0.0	0										
NASHVILLE	577	995.2	1014.9	87	65	75.9	- 1.5	96	10+	61	22	7	0	65	72	3.09	- 0.16	1.48	12	13	0.0	0	6.2	S	34	NW	13	7	13	10	5.9	68
OAK RIDGE	905	983.5		84	63	73.4	- 1.6	94	10	57	3+	4	0			3.62	0.38	0.67	17	8	0.0	0	4.9		49Y		20	5	10	15	6.9	
TEXAS																																
ABILENE	1759	951.2	1011.0	90	69	79.5	- 0.8	98	15+	62	19+	17	0	64	62	1.63	- 1.04	0.96	6	6	0.0	0	9.1	SSE	55	NW	19	12	10	8	4.9	73
AMARILLO	3607	887.2	1009.9	87	62	74.1	- 1.4	97	28	54	10+	13	0	57	61	3.60	0.71	1.14	8	9	0.0	0	15.9	S	38	S	4	16	6	8	4.0	78
AUSTIN	597	991.1	1012.5	94	72	82.9	1.0	100	16	67	2	27	0	68	65	2.10	- 1.12	0.87	8	10	0.0	0	8.6	S	35	N	16	5	20	5	5.6	59
BROWNSVILLE	16	1009.6	1012.1	91	76	83.7	1.0	95	15	72	3+	26	0	74	76	2.99	0.03	2.87	3	2	0.0	0	13.5	SE	33	SE	30	7	19	4	5.3	53
CORPUS CHRISTI	43	1011.6	1012.7	92	75	83.1	0.8	96	16	70	17	25	0	73	73	2.35	- 0.04	1.74	5	3	0.0	0	12.6	SE	40	SE	30	1	22	7	6.1	66
DALLAS	481	994.3	1012.4	93	74	83.3	2.0	99	15+	68	17	25	0	68	62	1.48	- 1.76	1.18	3	3	0.0	0	12.1	SSE	30	NW	10+	9	17	4	5.1	74

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

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State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
TEXAS	Ft.	Mb.	Mb.	°F.	°F.	F.	F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
DEL RIO	1026			95	73	83.7		100	16+	66	7	27	0			1.49		0.82	4	6	0.0	0										
EL PASO	3918	883.0	1006.8	95	67	81.1	0.6	101	30+	59	10	28	0	37	24	0.05	- 0.64	0.04	3	1	0.0	0	8.1	WSW	47	SE	14	24	5	1	1.8	93
FORT WORTH	544	991.9	1012.3	94	72	83.1	1.6	100	15+	68	17+	25	0	66	60	0.57	- 2.41	0.51	2	5	0.0	0	9.6	SSE	24*	SSE	5	11	13	6	5.0	
GALVESTON U	7			85	78	81.4	- 0.3	87	30+	70	21+	0	0			4.31	1.66	3.39	5		0.0	0	9.6		22	NE	16					76
GALVESTON	5	1012.0	1014.3	87	77	82.1	0.0	89	30+	71	21	0	0	72	73	7.64	5.15	5.01	8	10	0.0	0	10.0	S				10	16	4	5.0	
HOUSTON U	41			91	75	83.2	1.0	98	16	69	26	23	0			8.36	4.53	1.85	13	0	0.0	0										
HOUSTON	50	1010.8	1013.4	93	72	82.0	- 0.6	100	16	68	2	22	0	72	78	7.79	4.10	3.24	11	10	0.0	0	8.4	SSE	23*	SSE	30+	3	18	9	6.0	74
LAREDO	500	995.5	1010.6	98	76	86.7	1.0	103	16+	68	24+	29	0	69	60	5.66	3.70	5.27	4	5	0.0	0	12.4	ESE	44*	S	24	8	14	8	5.3	
LUBBOCK	3243	901.2	1010.4	89	64	76.2	- 1.3	97	22	58	19+	15	0	60	63	2.10	- 0.43	0.45	9	11	0.0	0	14.7	ESE	52*	NNW	18	15	9	6	4.2	
MIDLAND	2854	912.6	1008.9	92	67	79.2	- 2.0	99	22+	58	19	24	0	59	54	2.61	0.98	1.72	7	8	0.0	0	11.8	SSE	46*	NNW	19	19	3	8	4.0	
PORT ARTHUR	16	1012.3	1013.7	93	72	82.4	1.8	99	15+	69	8+	27	0	72	76	2.88	- 1.41	1.06	12	11	0.0	0	7.2	S	31	SE	26	4	21	5	5.7	59
SAN ANGELO	1903	944.5	1010.0	92	70	81.1	- 1.4	100	10	61	18	23	0	65	61	2.85	1.03	1.00	9	8	0.0	0	8.4	SSE	35*	S	7	12	8	10	5.2	
SAN ANTONIO	792	988.0	1011.9	94	73	83.4	1.5	100	16	68	3	28	0	68	65	2.28	- 0.67	1.19	6	6	0.0	0	9.1	SE	35	NNE	16	9	16	5	5.2	70
VICTORIA	104	1008.3		92	74	82.8	1.5	98	16	69	3	27	0			4.89	1.85	1.70	8	8	0.0	0	9.3		56Y		16	2	21	7	6.1	
WACO	500	991.9	1012.6	94	73	83.7	1.7	100	15+	69	4+	28	0	68	61	1.83	- 0.84	0.88	3	6	0.0	0	13.5	SSE	40*	SSE	30	9	14	7	5.2	
WICHITA FALLS	994	974.9	1010.9	95	70	82.6	1.8	103	15	63	11+	26	0	65	59	0.89	- 2.31	0.83	3	4	0.0	0	11.0	S	35*	NNE	16	15	7	8	4.9	
UTAH																																
MILFORD	5028	841.2		81	47	63.6	- 1.8	93	20	36	30	3	0			1.23	0.80	0.83	9	6	0.0	0						14	11	5	3.8	
SALT LAKE CITY	4220	865.2	1011.1	78	49	63.3	- 3.6	95	27	39	8	2	0	43	52	1.67	0.69	0.54	10	9	0.0	0	9.8	S	63	W	3	11	11	8	4.7	71
WENDOVER	4237	867.9		73	54	63.5	- 6.3	92	27	43	4	1	0			1.96	1.50	0.62	12	11	0.0	0						13	8	9	4.8	
VERMONT																																
BURLINGTON	331	998.1	1012.6	79	52	65.5	- 0.2	91	26	41	11+	3	0	54	69	1.90	- 1.59	0.60	9	9	0.0	0	7.4	S	25	S	20	4	13	13	6.8	65
VIRGINIA																																
LYNCHBURG	947	990.3		83	61	71.8	- 1.2	94	10	51	2	5	0			1.29	- 2.77	0.82	5	2	0.0	0	5.9		24	SW	20	6	14	10	6.1	66
NORFOLK	26	1013.7	1015.2	82	64	73.2	- 2.4	96	10	55	24	5	0	63	74	9.72	6.11	6.85	12	5	0.0	0	9.1	S	39	NE	3	6	12	12	6.3	51
RICHMOND	162	1008.8	1015.0	83	61	72.0	- 2.6	94	10	52	1	7	0	62	75	7.01	3.26	4.61	8	4	0.0	0	7.7	S	26	N	3	7	13	10	5.9	61
ROANOKE	1174	974.1	1015.8	84	62	72.9	- 0.5	95	26+	52	23	6	0	57	62	2.61	- 1.19	1.26	8	5	0.0	0	8.3	WSW	32*	NNW	7	5	14	11	6.1	
WASHINGTON																																
OLYMPIA	190	1010.5	1017.7	68	45	56.6	- 2.5	88	15	34	3	0	0	48	75	0.63	- 1.16	0.19	10	0	0.0	0	8.0	SSW	23*	WSW	9	5	5	20	7.5	
SEATTLE TACOMA	400	1003.0	1017.1	68	52	59.9	0.6	88	15	46	22	0	0	49	71	1.68	0.10	0.67	13	0	0.0	0	8.8	SSW	23*	SSW	21	6	3	21	7.7	
SEATTLE U	14			67	53	59.9	- 1.5	86	15	50	22+	0	0			1.95	0.54	0.44	14		0.0	0			26	S	24					46
SPOKANE	2356	944.0	1012.0	73	50	61.7	0.3	92	18+	44	22+	3	0	44	55	0.96	- 0.53	0.45	6	2	0.0	0	9.2	SSW	28	SW	29	6	8	16	6.8	62
STAMPEDE PASS R	3958	879.8		53	41	47.0	- 1.9	82	15	34	9	0	0			3.38	- 0.71	0.74	22	0	T	T						4	3	23	8.2	
TATOOSH ISLAND	101	1014.9	1017.9	57	50	53.4	- 0.5	63	15	48	26+	0	0	50	89	1.90	- 0.94	0.68	15	0	0.0	0	11.0	SW	27	W	4	3	8	19	7.7	38
WALLA WALLA U	949	976.9		78	57	67.3	0.1	97	16	47	3	5	0			0.20	- 1.02	0.09	6	2	0.0	0	6.1	W#	24	W	21	7	7	16	6.2	65
YAKIMA	1061	974.4	1012.8	79	50	64.5	0.1	98	15	38	26	6	0	42	46	0.26	- 0.55	0.10	5	0	0.0	0	8.6	NW	25*	WNW	2	8	11	11	5.7	
WEST INDIES																																
SAN JUAN P.R.	15	1015.1	1017.7	88	74	80.8	0.8	92	14	70	28	3	0	73	79	2.74	- 2.92	1.50	15	2	0.0	0	9.2	ENE	27	E	2	1	18	11	7.0	61
SWAN ISLAND	28	1011.3		87	78	82.5	0.2	89	27	74	27+	0	0			2.08	- 4.38	0.92	13	6	0.0	0						1	9	20	7.8	
WEST VIRGINIA																																
CHARLESTON	939	980.5	1015.8	80	58	69.1	- 2.4	90	26+	44	22	2	0	59	73	2.67	- 1.02	0.92	11	4	0.0	0	4.7	SW	29*	WNW	11	5	12	13	6.5	
ELKINS	1970	947.7	1016.6	76	52	64.4	- 2.4	88	26	38	23	0	0	55	78	4.45	- 0.74	1.18	13	9	0.0	0	5.5	NW	32*	W	20	6	6	18	6.9	
HUNTINGTON	827	986.1	1016.0	81	59	69.8		92	10	44	22	2	0	61	75	1.60	- 2.63	0.63	7	6	0.0	0	4.9	S	23*	NNW	10	5	12	13	6.3	
PARKERSBURG U	615			82	59	70.6	- 2.0	93	26	48	22	5	0			4.62	0.35	1.69	10	10	0.0	0	5.3		38	NW	10					61
WISCONSIN																																
GREEN BAY	682	991.8	1014.2	82	55	68.4	3.9	92	26+	40	21	3	0	59	74	2.67	- 0.69	1.40	11	7	0.0	0	7.2	SW	40	NW	27	8	11	11	5.7	69
LA CROSSE	652	989.4	1013.7	83	59	71.3	2.5	98	30	45	12+	8	0	57	65	2.35	- 1.85	0.69	9	10	0.0	0	9.2	S	63*	NNW	8	8	15	7	5.3	
MADISON	858	979.7	1014.5	83	56	69.6	3.5	94	30	39	21	6	0	59	70	8.15	4.20	3.67	8	9	0.0	0	7.4	S	54	N	7	7	15	8	5.6	66
MILWAUKEE	672	990.4	1015.1	77	54	65.6	2.3	93	26	38	22	3	0	55	70	1.50	- 2.14	0.81	8	7	0.0	0	8.8	SSW	45	NW	8	10	10	10	5.2	77
WYOMING																																
CASPER	5319	835.0	1009.1	80	50	64.9	1.8	95	27	43	1	2	0	38	46	0.94	- 0.31	0.63	5	5	0.0	0	11.0	WSW	31*	WSW	29	13	6	11	4.5	
CHEYENNE	6126	812.1	1009.5	78	50	64.0	2.5	94	28	43	10	4	0	42	52	2.84	0.73	1.16	10	8	0.0	0	11.6	WNW	33	W	14+	10	14	6	4.6	76

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						Snow, Sleet					Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
LANDER	5563	832.9	1009.4	76	48	62.1	0.1	93	27	41	30	2	0	40	50	3.84	2.48	2.97	9	8	0.0	0	7.5	W	49	SW	29	14	9	7	4.3	72
SHERIDAN	3942	881.7	1010.9	74	50	62.0	0.1	92	27	39	30	1	0	49	65	4.71	2.14	1.87	14	12	0.0	0	7.0	WNW	50	W	6	9	7	14	5.5	60

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days								No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	°C.	°C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	990.8	1015.7	31.1	19.4	25.2	-0.3	36.7	14+	13.9	3	12	0	19.4	74	214	113	84	10	8	0	0	2.8	E	13.0	SW	20	9	9	12	6.2	57
HUNTSVILLE	184	992.7	1015.5	31.1	18.9	24.9	-0.9	36.1	14+	15.0	2	12	0	18.3	69	166	81	60	12	9	0	0	2.8	ESE	17.9*	WSW	20	9	8	13	6.1	
MOBILE	64	1012.4	1014.6	32.2	21.7	26.9	0.2	37.8	14	16.7	2	15	0	21.1	78	182	24	59	13	20	0	0	3.0	SW	10.3*	WNW	22+	10	13	7	5.5	
MONTGOMERY	59	1007.0	1015.0	32.2	21.1	26.6	0.3	37.8	15+	14.4	3	14	0	20.0	72	113	7	67	7	9	0	0	3.0	ENE	12.1	NW	21+	12	5	13	5.4	63
ALASKA												B																			
ANCHORAGE	27	1005.6	1010.6	14.4	7.2	10.9	-1.6	18.9	8	3.3	6	0	0	4.4	67	46	21	14	11	0	0	0	3.1	SSE	8.0*	SSE	9+	2	7	21	8.2	36
ANNETTE	34	1011.5	1015.6	14.4	8.3	11.3	-0.8	24.4	30	3.9	7	1	0	7.8	81	212	68	62	19	0	0	0	3.4	SSW	11.6*	ESE	3	0	7	23	8.6	
BARROW	7	1010.0	1010.7	3.3	- 1.1	1.0	0.4	10.0	18	- 5.6	1	0	28	- 0.6	91	2	- 7	2	1	0	T	51	5.4	ENE	13.4*	E	27	1	8	21	8.3	
BARTER ISLAND	12	1007.7	1009.6	3.3	- 1.1	1.1	-0.2	12.2	23	- 8.9	2	0	25	0.0	90	4	- 9	2	4	0	8	229	4.2	ENE	11.2*	ENE	27	1	4	25	8.5	
BETHEL	38	1006.0	1007.6	12.8	3.9	8.4	-2.5	23.3	17	- 0.6	5+	3	3	5.0	80	84	54	25	16	0	56	T	5.2	SW	13.4*	S	29	1	10	19	8.1	
COLD BAY	29	1006.2	1010.0	10.0	5.6	7.7	0.3	13.3	26+	0.6	28	0	0	5.0	84	27	- 23	7	18	0	0	0	7.6	SSE	17.9*	SSE	21	1	2	27	9.2	
CORDOVA	12	1010.4	1012.1	13.3	5.0	9.0	-1.1	21.7	29	1.1	25+	1	0	6.1	80	185	97	61	19	0	0	0	3.1	E	8.0*	ESE	2	3	5	22	7.9	
FAIRBANKS	133	990.9	1008.0	17.8	6.1	11.9	-2.8	22.2	21	- 0.6	6	6	1	5.0	64	51	15	21	16	1	0	0	3.0	SW	12.1*	SSW	4	0	6	24	8.5	
JUNEAU	5	1012.2	1013.8	13.9	6.7	10.2	-1.1	24.4	30	1.7	7	1	0	6.1	78	115	29	28	23	0	0	0	4.1	ESE	13.4*	ESE	23	1	3	26	9.0	27
KING SALMON	13	1010.0	1009.9	13.3	3.9	8.7	-2.1	21.7	29	0.6	8+	1	0	4.4	77	40	5	8	17	0	T	T	5.4	SW	16.5*	E	2	2	1	27	9.0	
KOTZEBUE	3	1006.6	1007.2	10.0	3.3	6.6	0.0	18.3	21	- 1.7	1	0	6	3.3	82	14	2	6	11	0	61	T	5.9	WNW	13.9*	N	1	7	6	17	6.9	
MC GRATH	102	994.1	1007.9	15.6	5.6	10.5	-3.1	21.1	18	0.0	5	1	1	4.4	67	27	- 15	4	17	1	0	0	3.4	SSW	13.9	SSW	22	1	4	25	8.6	
NOME	4	1005.8	1006.6	9.4	3.3	6.2	-1.5	19.4	18	- 2.2	2	0	10	2.2	79	22	- 2	6	8	0	T	T	5.9	W	13.4*	W	30+	6	8	16	7.0	25
ST. PAUL ISLAND	7	1006.7	1007.7	6.7	2.2	4.6	-0.3	10.0	23	- 1.1	7+	0	6	2.8	90	56	26	15	14	0	T	T	7.4	SE	16.5*	N	2	0	4	26	9.2	
SHEMYA	37	1005.9	1010.0	7.8	3.9	5.8	0.4	10.0	26+	1.7	3	0	0	3.9	90	39	5	20	12	0	0	0	5.9	SW	14.8*	ENE	16	1	2	27	9.3	
YAKUTAT	9	1011.4	1013.6	12.2	5.6	9.1	-1.2	17.8	30	1.7	2	0	0	7.2	85	321	192	87	20	0	0	0	3.4	ESE	13.0*	SE	2	1	6	23	8.3	
ARIZONA																																
FLAGSTAFF	2131	789.5	1011.2	23.9	3.3	13.5	-1.8	28.9	30+	- 2.2	11	0	6	- 5.6	28	T	- 18	T	0	1	0	0	4.1	SSW	10.7*	S	23	23	5	2	1.7	
PHOENIX	340	969.0	1007.1	37.2	17.8	27.6	-2.2	42.2	18	13.3	9+	29	0	2.2	19	0	- 2	0	0	0	0	0	3.5	W	10.3*	WNW	13+	29	1	0	.4	99
PRESCOTT	1528	845.0	1009.2	28.3	10.6	19.7	-1.7	34.4	26+	5.0	7	10	0	- 3.3	23	0	- 8	0	0	1	0	0	5.4	SW	15.6	S	12	25	3	2	1.3	92
TUCSON	788	921.7	1007.4	36.1	17.8	26.9	-0.9	40.0	30+	11.7	9	26	0	- 3.3	15	T	- 7	T	0	1	0	0	4.5	SW	14.3	W	1	29	1	0	.4	98
WINSLOW	1487	849.2	1009.3	32.8	10.6	21.6	-2.2	38.9	30	5.6	8+	17	0	- 4.4	19	1	- 6	1	1	1	0	0	5.1	SW	13.0*	SSW	7+	24	5	1	1.6	
YUMA	61	1002.5	1007.4	37.8	20.6	29.1	-1.9	43.9	17	14.4	7	26	0	5.0	26	0	- T	0	0	0	0	0	3.5	SSE	13.4	SE	3	27	3	0	.6	99
ARKANSAS																																
FORT SMITH	137	997.0	1013.6	33.9	20.6	26.9	1.1	38.3	13+	17.2	1	21	0	20.0	70	104	- 7	71	5	6	0	0	3.0	ENE	17.0	W	10	7	16	7	5.4	66
LITTLE ROCK	78	1001.4	1014.3	33.9	20.0	26.9	0.8	38.9	15	15.6	3+	22	0	18.9	66	32	- 60	19	6	6	0	0	3.1	ENE	13.9	N	11	12	13	5	4.5	81
TEXARKANA	110	1000.2	1013.8	33.3	21.7	27.3	1.0	36.7	13	16.1	1	23	0	20.6	72	127	28	83	4	3	0	0	3.3	S								
CALIFORNIA																																
BAKERSFIELD	151	993.6	1011.1	30.6	17.2	23.8	-1.3	39.4	17	12.2	29+	10	0	8.9	41	7	5	5	4	0	0	0	3.3	NW	9.4*	NNW	10+	23	4	3	2.0	
BISHOP	1252	870.9		28.3	8.9	18.5	-2.5	37.2	19	2.8	4	9	0			14	12	7	6	5	0	0						19	3	8	3.4	
BLUE CANYON	1609	838.1		18.3	8.3	13.3	-1.8	26.1	16	2.8	22	0	0			47	24	21	7	6	0	0	3.7	ENE	17.0	ENE	12	16	8	6	4.1	
BURBANK	213	987.3	1013.0	22.8	13.9	18.2	-1.8	28.3	25	11.7	11+	0	0	12.2	72	8	7	5	4	0	0	0	3.0	S	7.2*	S	13+	11	8	11	5.2	
EUREKA U	13	1015.4		15.0	10.0	12.4	-0.6	18.3	29	7.8	10+	0	0			8	- 10	7	3	0	0	0	4.0	NW#	13.4	N	10	9	12	9	5.6	71
FRESNO	99	999.1	1010.8	31.1	14.4	22.9	-0.4	40.0	17	9.4	29	13	0	8.3	43	1	- 1	1	1	1	0	0	3.9	NW	14.8	NW	3	4	2	4	2.0	93
LONG BEACH	10	1012.2	1013.7	23.9	15.0	19.5	0.0	29.4	30	12.2	29+	0	0	12.8	70	13	12	13	2	0	0	0	3.1	S	8.0*	SW	10	10	14	6	4.7	
LOS ANGELES	30	1009.5	1013.2	22.2	15.6	18.7	0.5	25.6	30+	12.8	7+	0	0	13.9	76	6	5	6	3	0	0	0	3.8	WSW	9.4*	WNW	23	6	14	10	5.5	
LOS ANGELES U	95			23.3	15.0	19.1	-0.9	28.3	30+	12.8	11	0	0	20.6	54	4	2	3	3	0	0	0	2.6	W#	8.5	S	11+	10	10	10	5.2	56
MT SHASTA R	1080	891.6		21.7	7.2	14.5	-1.2	30.6	18+	- 0.6	29	0	1			47	15	18	8	2	T	T						15	13	2	3.6	
OAKLAND	1	1013.6	1013.8	21.1	11.7	16.5	-0.6	26.7	17	9.4	29	0	0	9.4	69	1	- 2	1	1	0	0	0	4.9	WNW	14.3*	W	20	18	9	3	3.2	
POINT ARGUELLO R	112	1000.7		17.2	10.0	13.6	-0.2	20.6	13	5.6	4	0	0			1	0	1	2	0	0	0	3.7		10.3*	NW	29	4	10	16	7.0	
RED BLUFF	104	998.6	1011.2	31.1	16.1	23.7	-0.9	39.4	17+	10.0	29	11	0	6.7	37	4	- 8	3	2	2	0	0	4.6	NNW	15.2	NW	16	9	6	5	3.2	90
SACRAMENTO	5	1010.8	1011.7	30.0	12.2	21.2	-1.3	39.4	17	9.4	11	7	0	10.6	58	T	- 3	T	0	0	0	0	3.7	SSW	15.2	NW	3	25	3	2	1.9	97
SACRAMENTO U	7			28.9	13.3	21.0	-0.9	38.3	17	11.1	29+	6	0			1	- 3	1	1		0	0										
SANDBERG R	1377	861.1		20.6	10.0	15.2	-3.0	31.1	16	3.3	6	0	0			14	13	12	4	1	0	0	5.8	NNW	16.1*	S	10+	23	3	4	2.2	
SAN DIEGO	4	1010.3	1013.3	21.7	15.0	18.2	-0.6	26.1	30+	12.2	7	0	0	13.3	75	7	6	7	3	0	0	0	3.3	SW	9.4	S	11	8	7	15	6.5	48
SAN FRANCISCO	2	1013.8	1014.5	20.0	10.0	14.8	-1.5	24.4	25	7.8	6	0	0	9.4	76	T	- 3	T	0	0	0	0	5.5	W	16.5	W	4+	21	6	3	2.6	
SAN FRANCISCO U	16			17.8	11.1	14.5	-0.6	21.7	25	9.4	9	0	0			T	- 4	T	0	0	0	0	4.7	W#	13.9	W	20					78
SANTA CATALINA	478	957.2		18.9	12.2	15.8		26.1	29+	10.6	8+	0	0			7		6	4	0	0	0						8	11	11	5.3	
SANTA MARIA	73	1005.9	1014.6	19.4	10.0	14.8	-0.5	23.9	17	5.6	4	0	0	10.6	80	1	- 3	1	2	0	0	0	4.1	WNW	13.0*	WNW	28+	4	11	5	4.2	
STOCKTON	9	1005.0	1012.0	30.6	13.3	21.9		39.4	17	10.0	29	10	0	8.9	49	3		3	1	1	0	0	4.3	W	13.0*	E	10	26	3	1	1.7	
COLORADO																																
ALAMOSA	2297	771.7		25.6	4.4	14.8	-0.7	31.1	30+	- 2.2	9	0	3			18	- 5	13	7	5	0	0						16	13	1	3.0	
COLORADO SPRINGS	1882	810.8	1009.7	28.9	12.2	20.6	2.7	36.7	28	8.3	10+	10	0	1.1	35	31	- 9	20	6	6	0	0	5.1	S	14.8*	W	3	15	11	4	3.8	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature									Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	835.3	1008.3	28.3	10.6	19.3	-0.2	35.6	28	7.2	17	8	0	5.6	47	91	55	55	7	6	0	0	4.2	S	18.8	SE	13	14	12	4	4.2	72
GRAND JUNCTION	1478	855.7	1007.3	30.0	13.9	21.9	0.1	37.2	27	10.6	8+	12	0	- 3.3	23	15	5	9	6	6	0	0	3.6	SE	14.8	SW	21	12	11	7	4.4	69
PUEBLO	1414	853.1	1007.3	32.2	13.3	22.7	1.0	39.4	29+	7.8	1	16	0	2.8	33	12	- 19	6	5	7	0	0	4.9	SSE	21.9	SE	26	7	10	3	3.5	82
CONNECTICUT																																
BRIDGEPORT	2	1014.2	1015.2	24.4	15.0	19.7	-0.3	33.9	28	11.1	22+	3	0	14.4	74	68	- 18	39	7	2	0	0	5.0	WSW	12.5*	NW	21	11	8	11	5.8	
HARTFORD	52	1008.1	1014.0	26.7	13.3	20.1	0.3	35.0	28	7.8	22	5	0	13.9	72	108	14	38	12	3	0	0	3.0	S	10.7	W	22	6	10	14	6.7	60
NEW HAVEN	2	1013.7	1014.2	24.4	13.9	19.1	0.1	32.8	28+	10.0	17+	2	0			110	21	53	13	4	0	0	2.9		10.3	SW	22	9	10	11	5.9	63
DELAWARE																																
WILMINGTON	24	1011.2	1014.6	27.8	15.6	21.6	-0.3	35.0	28+	8.9	22	5	0	15.6	72	83	- 21	39	10	5	0	0	2.5	WNW	10.3*	NE	3	8	11	11	5.8	
DIST.OF COLUMBIA																																
WASHINGTON U	22			29.4	17.8	23.4		36.1	27+	12.8	22	10	0			213		61	12													
WASH NATL AP	4	1010.4	1015.0	28.3	17.8	23.2	-0.3	35.6	10	12.2	22	7	0	15.6	64	174	93	53	12	7	0	0	3.3	S	18.8	NNE	14	9	8	13	5.7	68
FLORIDA																																
APALACHICOLA U	4	1013.3		30.0	23.3	26.8	0.0	32.2	16+	20.0	3+	3	0			184	50	97	14	13	0	0	3.1		15.2	N	9	4	17	9	6.1	68
DAYTONA BEACH	9	1014.9	1016.5	32.2	22.2	27.3	1.6	36.7	14	18.9	29	16	0	21.1	71	188	41	75	16	15	0	0	3.8	WSW	16.5*	N	28	3	12	15	6.9	
FORT MYERS	4	1015.5		32.2	23.3	27.7	0.6	34.4	30	21.1	5+	18	0			196	- 32	49	19	20	0	0	2.8		10.3*	E	23	5	18	7	5.8	
JACKSONVILLE	7	1014.4	1015.7	32.2	21.7	26.9	-0.2	36.1	15+	17.8	3	18	0	21.7	78	317	156	68	17	18	0	0	3.8	SW	23.2	NW	12	3	13	14	6.9	69
KEY WEST	2	1014.9	1015.9	31.1	26.1	28.6	0.9	32.2	30+	21.7	4	7	0	22.8	71	109	8	36	12	11	0	0	4.6	SE	13.0	SW	12	5	16	9	6.1	69
LAKELAND U	65			32.2	22.2	27.2	0.2	35.0	19	18.3	5	19	0			130	- 53	25	15	18	0	0	3.0					2	17	11	6.2	58
MIAMI BEACH	3			31.1	25.0	28.0	0.7	33.3	13	20.6	5	4	0			107	- 36	54	9	0	0	0						1	20	9	6.2	61
MIAMI	2	1015.1	1016.3	30.6	23.3	27.0	-0.1	32.2	12	20.6	7+	1	0	22.8	79	173	- 14	31	17	17	0	0	3.9	ESE	13.4*	WNW	5	2	16	12	6.9	
ORLANDO	32	1011.9	1016.3	33.9	22.2	28.0	1.2	36.7	19+	18.9	7	24	0	21.1	73	169	- 7	100	13	13	0	0	4.1	SW	13.0*	W	28	3	17	10	6.2	
PENSACOLA U	4			30.6	23.3	26.8	-0.2	35.0	10	19.4	3	7	0			209	77	71	15	12	0	0	3.4	SW	10.7	NE	9					58
TALLAHASSEE	18	1013.2	1015.8	31.7	21.1	26.5	-0.3	35.0	14+	16.1	3	12	0	21.7	79	234	68	43	19	21	0	0	3.8	S	18.8*	NNW	28	1	17	12	7.1	
TAMPA	6	1015.5	1016.4	31.7	22.8	27.1	0.1	34.4	19	18.9	6	14	0	21.7	76	110	- 75	39	16	15	0	0	5.1	SW	15.6*	ESE	23	3	13	14	6.5	82
WEST PALM BEACH	5	1015.8	1016.8	31.7	22.8	27.4	0.2	34.4	12	19.4	6	15	0	22.2	76	74	-117	18	14	15	0	0	3.3	ESE	10.3*	SW	17+	5	12	13	6.7	
GEORGIA																																
ATHENS	245	987.8	1016.4	28.9	18.3	23.7	-1.7	35.6	10	13.9	2	9	0	18.3	77	310	212	137	14	10	0	0	3.1	ENE	9.4*	E	1	9	5	16	6.3	
ATLANTA	306	974.5	1015.8	28.3	18.9	23.5	-1.4	34.4	14	15.0	1	8	0	18.3	77	170	72	44	12	6	0	0	2.8	ENE	13.0*	N	21	10	6	14	6.0	62
AUGUSTA	44	1008.3	1014.9	31.1	19.4	25.2	-0.8	37.8	10	14.4	3+	13	0	19.4	74	121	44	43	12	10	0	0	3.1	NE	14.3*	SSW	21	8	6	16	6.6	
COLUMBUS	117	1001.3		31.7	20.0	25.7	-0.7	38.3	14	12.8	3	12	0			109	16	47	10	8	0	0	3.2		13.0*	SW	20	11	5	14	6.1	
MACON	109	1002.1	1015.5	31.7	20.6	26.1	-1.0	38.9	14	13.3	3	14	0	18.9	70	119	35	56	11	6	0	0	3.1	NW	12.1	SW	20	11	5	14	5.9	58
ROME	194	993.2		29.4	17.2	23.4	-1.3	36.1	10	11.1	2	9	0			147	52	49	16	11	0	0						7	7	16	6.7	
SAVANNAH	15	1012.8	1015.3	31.7	20.6	26.2	-0.3	36.7	14	16.7	3+	15	0	20.6	77	366	236	103	13	15	0	0	4.0	SW	15.2	N	11	8	5	17	6.7	60
THOMASVILLE U	86			31.1	20.6	26.0	-1.1	36.1	15	16.7	3+	13	0			268	145	49	17	12	0	0						2	13	15	7.3	
HAWAII																																
HILO	9	1015.7	1017.4	27.8	19.4	23.6	0.1	28.9	28+	17.8	14+	0	0	18.9	79	277	105	72	28	0	0	0	3.9	WSW	9.4	ENE	22+	2	8	20	7.7	31
HONOLULU	2	1016.6	1017.0	30.0	22.8	26.2	0.7	30.6	28+	19.4	14	0	0	18.3	65	8	0	4	8	1	0	0	5.2	ENE	14.8	NE	20	8	17	5	5.2	71
KAHULUI	13	1014.0	1016.7	29.4	20.0	24.8		31.7	26	16.7	14	0	0	18.3	70	2		1	4	0	0	0	9.7	ENE	19.7*	ENE	3	13	13	4	4.6	79
LIHUE	35	1012.9	1018.3	28.9	21.7	25.4	0.7	30.0	3	17.8	14	0	0	19.4	73	50	12	13	18	0	0	0	6.0	NE	14.8	E	31	1	18	11	6.9	58
IDAHO																																
BOISE	865	916.5	1011.4	24.4	11.1	17.7	-0.5	33.9	18	5.6	3+	4	0	6.7	54	48	26	22	12	3	0	0	3.5	WNW	13.0	NW	25	6	11	13	6.3	57
IDAHO FALLS 42NW R	1460			21.1	6.1	13.8	-1.7	29.4	27	- 0.6	30	0	1			71	40	21	10				4.2	SSW	17.0A	SSW	21					
IDAHO FALLS 46W R	1504	846.4		21.1	6.7	13.9	-1.6	28.9	28+	0.0	30	0	1			72	44	29	13	4	0	0	3.4	SW	12.5A	SW	21					
LEWISTON	431	960.9		25.0	12.8	18.8	0.6	35.6	18+	7.2	23	5	0			35	- 9	21	8	3	0	0						5	11	14	6.7	
POCATELLO	1355	861.2	1012.3	22.2	7.8	15.1	-2.1	30.6	27	2.8	30	0	0	6.1	61	70	45	18	15	9	0	0	3.5	SW	14.8	W	28	10	5	15	6.1	53
ILLINOIS																																
CAIRO U	96	1001.7		31.7	20.6	25.9	0.4	37.8	9	14.4	21	14	0			58	- 46	25	6	4	0	0	2.8	S#	17.9	NW	10	9	17	4	4.9	79
CHICAGO O HARE	201	990.3	1014.8	27.8	13.3	20.6		33.3	30+	2.2	22	7	0	12.2	60	58		18	6	5	0	0	3.7	SW	18.3*	N	8	9	17	4	4.8	
CHICAGO MIDWAY	186	992.4	1014.9	28.9	16.7	23.0	1.5	36.1	30	7.8	22	10	0	12.8	56	61	- 43	22	7	6	0	0	3.8	SW	21.9	N	8	8	18	4	4.7	76
MOLINE	177	992.5	1014.4	30.6	15.6	23.1	1.2	36.7	8+	7.2	22+	14	0	15.6	65	26	- 85	21	4	4	0	0	3.7	E	14.8	N	7	6	16	8	5.4	69
PEORIA	199	993.3	1015.5	30.0	15.6	22.8	0.7	35.6	30	7.8	21	13	0	14.4	61	39	- 65	37	4	6	0	0	3.5	S	13.0	W	5	6	19	5	5.3	80
ROCKFORD	222	987.9	1014.8	28.3	15.0	21.7	0.8	35.0	7	7.8	22+	8	0	13.9	64	108	- 1	28	9	8	0	0	3.8	SSW	20.6*	NNW	7	9	15	6	5.0	
SPRINGFIELD	179	991.3	1014.2	31.1	16.7	24.1	1.3	37.2	9+	7.8	21	16	0	15.6	61	33	- 80	15	6	6	0	0	4.1	SW	21.9	NW	10	10	16	4	4.6	80

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	°C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	999.4	1015.1	31.7	15.6	23.6	-0.2	36.1	9+	7.2	22	14	0	16.1	65	31	- 64	13	7	4	0	0	3.0	NW	17.9	NW	10	11	12	7	4.6	85
FORT WAYNE	241	984.5	1015.3	28.9	14.4	21.6	0.4	34.4	28+	6.1	22	7	0	13.9	63	73	- 33	26	10	10	0	0	3.0	NW	20.1	SW	10	11	13	6	4.7	78
INDIANAPOLIS	242	985.8	1015.4	28.9	15.0	21.8	0.1	33.9	28	8.3	22	9	0	15.6	69	135	17	97	7	6	0	0	2.3	N	16.1*	NW	10	8	17	5	5.0	73
SOUTH BEND	234	987.2	1015.0	27.8	13.9	20.8	0.3	34.4	30	5.6	22	5	0	13.3	64	46	- 45	21	6	6	0	0	3.5	NNW	15.6*	SW	10	8	18	4	4.4	
IOWA																																
BURLINGTON	212	989.3	1014.6	30.6	17.2	24.1	1.8	36.1	30	10.0	22	13	0	15.0	59	25	-103	15	5	2	0	0	3.8	SSW	16.1	SW	5	7	16	7	5.5	86
DES MOINES	289	983.0	1013.8	29.4	17.2	23.3	1.2	35.6	30+	9.4	21	9	0	16.1	66	29	- 91	10	9	7	0	0	4.3	S	26.8	NE	28	9	11	10	5.5	69
DUBUQUE	325	989.1		28.3	15.0	21.6	1.6	35.0	30	6.1	21	6	0			70	- 37	44	6	7	0	0			11.2*	WNW	10+	6	15	9	5.6	
SIOUX CITY	334	971.2	1011.6	29.4	17.8	23.7	2.1	35.6	8	11.7	11	7	0	16.7	68	146	36	80	14	13	0	0	4.5	SSE	17.9	NW	26	9	11	10	5.3	68
WATERLOO	265	982.6	1014.1	29.4	15.0	22.4	1.5	36.7	7	7.8	21	9	0	15.6	65	115	- 8	58	9	8	0	0	4.2	S	19.2*	NNW	8	8	14	8	5.6	
KANSAS																																
CONCORDIA	448	961.9	1010.7	32.2	18.3	25.1	1.4	38.3	7	13.3	17+	16	0	16.7	64	106	- 1	31	12	13	0	0	5.9	SSE	17.0	NW	11+	12	11	7	4.3	64
DODGE CITY	791	924.4	1010.4	31.1	17.2	24.2	0.7	36.7	30+	12.8	17+	15	0	15.0	60	55	- 22	27	8	11	0	0	6.1	SSE	17.9	SE	24	13	9	8	4.3	72
GOODLAND	1111	884.5	1008.3	32.2	14.4	23.4	2.5	41.7	29	6.1	10	17	0	10.0	51	35	- 33	25	6	5	0	0	7.6	S	19.7*	SSE	21	18	9	3	3.2	
TOPEKA	267	977.4	1012.4	31.1	18.9	25.2	1.4	36.7	7	12.2	18	12	0	18.3	68	69	- 46	29	10	8	0	0	5.5	S	17.0	N	20	10	9	11	5.5	74
WICHITA	403	963.7	1011.2	32.2	20.0	26.0	1.3	37.8	30+	14.4	18	17	0	17.8	64	115	8	42	8	10	0	0	5.2	S	18.8	S	8	12	8	10	4.8	71
KENTUCKY																																
COVINGTON	265	983.7	1015.2	27.8	13.3	20.7	-2.0	32.8	30+	6.7	13+	3	0	14.4	72	40	- 58	19	9	8	0	0	2.5	SSW	20.6*	NW	10	7	13	10	5.9	
LEXINGTON	298	980.5	1015.8	27.8	16.7	22.2	-0.9	32.8	10	11.7	12	2	0	15.6	69	83	- 37	25	11	8	0	0	2.9	SSW	13.0*	NNW	10+	7	16	7	5.5	
LOUISVILLE	144	996.2	1015.1	28.9	16.7	22.8	-0.2	33.9	10	10.6	22	6	0	16.7	70	106	5	41	8	7	0	0	2.4	S	19.2	N	10	8	14	8	5.6	61
LOUISIANA																																
ALEXANDRIA	28	1010.0	1014.4	33.3	19.4	26.4		37.2	13	13.3	1	22	0	20.6	77	34		8	9	10	0	0	2.0	SW	14.3	WNW	16	10	14	6	5.1	
BATON ROUGE	20	1011.7	1014.8	33.3	21.1	27.2	0.3	37.8	15+	17.8	1	20	0	21.7	76	104	1	31	11	12	0	0	2.9	SW	13.0	S	19	.9	13	8	5.4	
LAKE CHARLES	4	1013.1	1014.4	31.7	22.2	26.9	-0.4	35.0	15	18.9	1	12	0	22.2	78	117	- 3	51	8	15	0	0	3.1	SSW	13.9*	E	2	6	17	7	5.6	
NEW ORLEANS	1	975.5	1014.8	31.7	21.1	26.4	-0.1	36.1	14	17.8	1	13	0	22.8	81	106	- 7	39	13	12	0	0	2.6	SW	9.8*	W	21	12	10	8	5.0	
NEW ORLEANS AUDUBON	2	1008.2		31.7	22.8	27.2		35.0	14+	19.4	1	14	0			215		64	15	15	0	0	1.3	S#	5.8	NE	2+	13	7	10	5.4	58
SHREVEPORT	77	1005.1	1014.3	33.9	21.7	27.8	0.8	37.8	15+	16.7	1	26	0	20.6	69	67	- 18	44	4	8	0	0	3.6	S	16.5	SSE	30	12	14	4	4.5	75
MAINE																																
CARIBOU	190	987.9	1011.1	23.9	9.4	16.6	1.6	33.3	30+	2.8	10	2	0	9.4	65	43	- 61	16	8	4	0	0	4.6	WSW	19.7*	NNW	30	4	13	13	6.8	
PORTLAND	19	1008.7	1012.8	24.4	10.0	17.3	0.6	33.9	27	4.4	11	3	0	12.2	72	50	- 31	24	7	3	0	0	3.7	S	14.8	NW	27	4	17	9	6.0	62
MARYLAND																																
BALTIMORE	45	1010.0	1014.7	28.9	16.7	22.8	0.3	36.7	27	10.6	22	8	0	15.0	66	233	149	85	12	5	0	0	3.8	W	15.6	N	10	9	14	7	5.4	65
BALTIMORE U	4			28.9	18.9	23.9	0.2	36.7	27	14.4	22	10	0			123	25	55														
FREDERICK	90			27.8	14.4	21.2	-0.6	35.0	27	7.8	23+	7	0			68	- 24	39	9		0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	989.6	1012.7	25.0	13.3	19.0	0.6	33.3	27+	7.2	8	2	0		71	35	- 60	8	13		0	0	5.5	SSW	19.2	W	22					63
BOSTON	5	1008.5	1013.2	26.1	15.6	20.8	0.9	35.0	27+	9.4	8	4	0	11.7	61	49	- 40	18	11	3	0	0	5.7	SSW	14.3	W	22	6	14	10	6.1	69
NANTUCKET	13	1013.5	1014.2	21.7	12.8	17.4	1.4	31.1	26	7.2	8	0	0	13.3	82	46	- 28	32	7	0	0	0	5.0	WSW	13.4	NW	16	9	6	15	6.4	67
PITTSFIELD	357			24.4	10.6	17.5	0.2	31.7	28	5.0	1	0	0			101	- 8	32	13		0	0										
WORCESTER	301	977.5	1013.7	24.4	12.8	18.6	0.6	31.1	28+	7.2	22+	0	0	11.1	64	63	- 35	16	11	3	0	0	3.8	W	12.5*	W	22	6	12	12	6.1	
MICHIGAN																																
ALPENA	210	989.4		25.0	9.4	17.3	0.6	34.4	30	1.7	23	3	0			96	28	26	11	8	0	0	2.9	SW	10.7	E	10	9	11	10	5.4	71
DETROIT	189	988.6	1015.0	28.3	15.0	21.6	0.9	34.4	27+	7.8	21	7	0	12.8	58	79	7	52	6	6	0	0	3.4	SE	19.2	NW	9	11	12	7	4.7	75
DETROIT M WAYNE CO	193	991.2	1015.1	27.8	12.8	20.1	-0.1	34.4	27	4.4	21	4	0	14.4	72	66	- 18	41	6	6	0	0	2.4	WSW				9	13	8	5.1	
DETROIT WILLOW RUN	217	987.0	1015.0	27.8	12.2	20.0	-0.9	33.9	27+	4.4	21	7	0	12.8	66	51	- 32	35	5	4	0	0	3.8	SW	20.6*	SSW	10	11	14	5	4.6	
ESCANABA U	181	991.8		21.7	11.7	16.8	0.6	30.0	30+	3.9	21	0	0			37	- 43	19	9	6	0	0	4.0		13.4	NW	11	7	14	9	5.5	64
FLINT	233	988.1	1015.7	27.2	12.2	19.7	0.1	33.9	27	2.8	22	5	0	12.8	67	45	- 34	32	6	5	0	0	3.3	WSW	23.2*	WNW	10	2	9	9	4.9	
GRAND RAPIDS	210	990.2	1015.2	27.8	13.3	20.6	0.9	35.6	30	5.0	22	6	0	12.2	61	69	- 15	49	7	6	0	0	3.7	WNW	14.3	SW	10+	11	14	5	4.6	85
LANSING	260	983.3	1014.9	27.2	12.8	20.1	0.4	33.3	30+	3.3	22	6	0	12.2	62	155	70	110	6	5	0	0	4.3	S	28.2	SE	9	13	8	9	4.7	72
MARQUETTE U	206	988.5		22.2	10.6	16.3	0.7	38.3	30	3.3	11	3	0			101	13	26	14	8	0	0	3.2	NW#	14.3	SW	8	9	6	15	6.0	67
MUSKEGON	191	992.0	1015.0	26.1	12.2	19.2	0.8	32.8	27	2.8	22	1	0	12.8	70	67	- 2	37	8	6	0	0	3.6	NW	14.3*	NW	8	14	11	5	3.9	
SAULT STE MARIE	220	991.7	1014.4	23.3	8.9	16.2	1.5	32.8	30	3.9	21+	1	0	10.6	72	41	- 43	15	11	4	0	0	3.6	WNW	13.0*	SE	10	10	9	11	5.7	73
MINNESOTA																																
DULUTH	435	972.9	1014.3	23.3	9.4	16.3	1.1	33.3	30	0.6	12	1	0	11.1	76	103	- 6	37	12	7	0	0	4.4	ESE	17.9	SW	25	4	11	15	7.0	57

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
MINNESOTA	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INTERNATIONAL FALLS	359	972.1	1013.0	24.4	11.1	17.8	2.3	32.2	27	3.3	12	1	0	12.2	73	53	- 45	13	12	8	0	0	3.0	SE	11.2*	ENE	7	4	9	17	7.0	
MINNEAPOLIS	251	980.2	1013.3	27.2	15.0	21.0	1.4	37.2	30	7.2	12+	5	0	14.4	68	49	- 53	16	13	11	0	0	4.4	SSE	14.3	SE	28+	10	10	10	5.7	74
ROCHESTER	395	966.8	1014.2	27.8	13.9	20.8	1.7	35.0	30	6.1	21	3	0	14.4	69	86	- 28	38	12	13	0	0	5.3	S	17.0*	SE	8	10	11	9	5.5	
ST CLOUD	315	974.3		26.7	13.9	20.3	1.8	36.7	30	5.0	12	3	0			64	- 50	22	11	8	0	0						8	9	13	6.0	
MISSISSIPPI																																
JACKSON	93	1002.6	1014.5	32.8	21.1	27.1	0.7	38.3	15+	15.6	3	19	0	19.4	68	84	- 14	45	11	6	0	0	3.0	ESE	16.5	W	16	9	13	8	5.4	72
MERIDIAN	89	1001.5	1015.1	32.2	19.4	25.8	-0.6	39.4	14	13.3	3	16	0	19.4	74	101	- 3	30	9	10	0	0	2.3	S	8.9*	S	19	8	12	10	5.9	
VICKSBURG U	71	1005.3		31.7	21.7	26.6	0.1	36.1	14+	18.3	22	13	0			61	- 27	19	10	9	0	0	2.8		11.6	SW	30	14	9	7	4.9	73
MISSOURI																																
COLUMBIA	237	985.5	1013.3	30.6	18.3	24.6	1.2	36.7	13	13.3	18+	13	0	17.2	65	32	- 78	15	8	6	0	0	4.0	SSE	14.3	N	28	12	13	5	4.6	70
KANSAS CITY	226	978.5	1012.6	31.7	21.1	26.3	2.2	37.2	13	15.6	18+	14	0	18.3	62	82	- 35	25	10	8	0	0	4.1	S	16.5	NE	28	7	14	9	5.4	84
ST JOSEPH	247	982.7		31.7	20.0	25.7	2.3	37.2	30+	12.2	17	15	0			28	-122	13	7	5	0	0	4.1	SSW	10.3*	ENE	28+	13	10	7	4.5	
ST LOUIS	163	994.3	1014.8	30.6	17.8	24.1	-0.1	35.6	10	10.0	21	12	0	16.7	65	98	- 11	35	6	4	0	0	3.8	WSW	20.1	W	12	10	14	6	4.9	77
ST LOUIS RFC	142			31.1	20.0	25.5	0.7	35.6	28+	11.7	21	13	0			68	- 32	34	5		0	0										
SPRINGFIELD	386	967.6	1014.0	31.7	19.4	25.6	2.2	37.8	14	13.3	22	14	0	19.4	70	169	41	104	10	9	0	0	3.9	SSE	19.2	NW	12	10	11	9	5.3	76
MONTANA																																
BILLINGS	1087	888.3	1010.9	22.8	10.6	16.7	-0.8	32.2	27+	7.2	23+	2	0	9.4	67	80	15	20	15	8	0	0	4.7	SW	15.6	W	21	8	10	12	5.5	67
GLASGOW	694	936.4		23.3	11.7	17.6	0.7	31.1	27	6.7	23	0	0			136	60	45	9	9	0	0						8	9	13	6.3	
GREAT FALLS	1116	885.6	1011.2	22.8	10.0	16.3	0.6	32.2	18	3.3	23	1	0	6.7	58	73	- 1	20	16	4	0	0	5.0	SW	17.0	SW	29+	4	10	16	7.0	51
HAVRE	787	923.6		24.4	10.0	17.4	1.3	35.0	18	3.3	23	4	0			48	- 22	10	15	9	0	0	4.2	SW#	20.6	SW	28	4	10	16	7.3	52
HELENA	1187	871.9	1012.0	21.7	9.4	15.6	0.3	31.1	18	4.4	26+	0	0	6.1	58	66	9	17	17	11	0	0	3.7	WNW	17.9	W	25	4	10	16	6.9	46
KALISPELL	904	909.1		22.2	7.8	14.8	0.1	31.7	18	2.2	2	0	0			100	44	28	17	7	0	0	2.8					6	8	16	6.9	
MILES CITY	801			26.1	12.8	19.3	0.7	33.9	27	8.3	23	2	0			121	53	0			0	0	4.1	SW	15.6*	W	21					
MISSOULA	972	899.9	1013.1	22.2	8.3	15.1	0.3	32.2	18	0.0	23	1	1	7.2	63	84	35	19	17	7	0	0	3.0	NNW	12.1	SW	29	4	7	19	7.3	45
NEBRASKA																																
GRAND ISLAND	561	945.6	1010.6	31.1	16.1	23.4	0.9	40.6	28	10.0	17+	11	0	15.6	66	82	- 14	39	10	9	0	0	5.7	SSE	15.6*	SSW	5	14	8	8	4.5	
LINCOLN U	351			31.7	19.4	25.3	2.5	37.8	29+	13.9	17+	12	0			173	58	137	10	7	0	0	5.9	S#	16.1	SE	24+	8	13	9	5.4	68
NORFOLK	471	956.2		30.0	17.2	23.7	2.1	37.8	29	11.1	11	10	0			105	- 3	32	9	12	0	0						10	11	9	5.0	
NORTH PLATTE	847	911.4	1008.2	30.6	15.0	22.7	2.1	40.0	28	7.8	17	9	0	13.9	61	46	- 36	31	9	10	0	0	5.3	SSE	20.1	S	6	15	11	4	4.2	82
OMAHA	298	972.7	1011.8	30.6	18.9	24.6	1.8	36.1	7	13.3	21	14	0	16.7	63	119	4	36	10	9	0	0	4.9	SSE	19.7	N	5	8	18	4	4.6	76
OMAHA N OMAHA AP	403	964.7		29.4	17.8	23.6	2.0	34.4	7	11.7	11	9	0			177	60	55	12	9	0	0						8	15	7	5.0	
SCOTTSBLUFF	1204	875.6	1008.5	28.9	12.8	21.0	1.6	36.7	29+	8.3	6	11	0	10.6	58	90	12	40	10	11	0	0	4.8	SE	17.0*	SE	23	11	13	6	4.6	
VALENTINE	789	920.1		29.4	14.4	21.9	2.2	40.6	28	9.4	6	6	0			70	- 9	22	10	10	0	0	5.2	S#	29.1	S	21	9	9	12	5.8	59
NEVADA																																
ELKO	1547	843.1	1012.6	20.6	5.0	12.8	-2.8	28.9	26	- 0.6	30	0	1	4.4	60	66	48	16	17	6	0	0	3.1	SW	11.2*	WSW	8	5	11	14	6.4	
ELY	1907	807.0	1010.6	20.6	3.9	12.1	-2.7	28.3	20	0.0	10+	0	4	1.7	58	90	77	38	17	13	T	T	3.6	SSE	17.0	SW	28	10	8	12	5.5	71
LAS VEGAS	659	942.6	1007.4	33.9	17.8	25.9	-2.7	41.1	19	13.3	24+	19	0	0.0	20	4	3	4	1	1	0	0	5.8	SW	17.0*	NNW	1	19	8	3	2.4	92
RENO	1342	861.1	1013.1	23.9	6.1	15.0	-0.6	30.0	19+	- 1.7	29	0	1	6.1	58	28	19	13	7	8	T	T	3.0	WNW	16.1	NW	28+	13	9	8	4.7	75
WINNEMUCCA	1310	865.7		22.8	7.2	14.9	-1.4	30.6	26+	0.6	30+	0	0			66	46	28	13	7	0	0	3.6	NE	25.5	W	9	8	10	12	6.0	42
NEW HAMPSHIRE																																
CONCORD	103	1001.8	1013.1	27.2	11.1	19.1	1.1	35.6	26	4.4	11	6	0	11.7	65	31	- 60	16	9	3	0	0	3.0	S	11.6	W	22+	6	16	8	6.1	66
MT WASHINGTON OBS	1909	806.8		12.2	4.4	8.2	1.1	18.3	4	- 6.7	10	0	5		81	127	- 38	37	13	3	T	T	10.4	W	40.2Y	W	22	4	14	12	6.7	50
NEW JERSEY																																
ATLANTIC CITY	18	1012.8	1015.0	27.2	15.6	21.4	0.3	36.1	28+	10.0	22	6	0	15.0	70	78	6	39	8	4	0	0	4.3	S	10.3*	NE	15+	6	17	7	5.9	57
ATLANTIC CITY U	3			25.0	17.2	20.9	0.4	34.4	25	12.2	22+	4	0			54	- 23	22	10				6.1		18.3*	NW	10					
NEWARK	3	1013.2	1014.6	27.8	16.7	22.2	0.4	37.2	27+	12.8	22+	6	0	13.3	62	51	- 36	17	11	6	0	0	4.2	SSW	10.3*	WSW	22+	9	7	14	6.0	
TRENTON U	17	1006.9		27.8	16.1	21.8	0.1	36.7	27	10.6	22	7	0			39	- 53	20	8	6	0	0	3.6	NW#	11.2	S	29+	8	8	14	5.8	61
NEW MEXICO																																
ALBUQUERQUE	1618	846.0	1007.6	32.2	15.0	23.7	-0.2	37.2	30+	6.7	9	16	0	- 1.1	23	3	- 12	2	2	4	0	0	4.9	S	18.3	E	16	21	7	2	2.4	88
CLAYTON	1515	844.3		29.4	13.3	21.2	0.0	36.1	29	7.8	18	10	0			57	19	28	5	8	0	0						17	6	7	3.4	
RATON	1944	805.5		27.8	10.0	18.9	0.3	35.0	30	4.4	10	5	0			45	2	12	10	13	0	0						15	9	6	3.9	
ROSWELL	1103	890.2		34.4	15.6	24.8	0.6	39.4	23	9.4	10+	25	0			15	- 11	12	4	5	0	0	4.7		26.4	NW	18	22	3	5	2.9	79
SILVER CITY	1638	834.6		31.7	11.7	21.8		37.2	30	6.7	10	14	0			4		2	2	3	0	0						24	6	0	1.8	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .25 mm. or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
ALBANY	84	1010.1	1014.1	26.1	13.3	19.6	0.0	33.3	30+	8.9	17+	5	0	12.2	65	75	- 8	23	8	4	0	0	3.0	SSE	13.0	W	22	2	14	14	7.1	55
BINGHAMTON	485	955.8	1014.1	23.9	12.8	18.6	0.5	31.1	28+	6.7	22	0	0	12.8	72	108	10	42	9	4	0	0	3.6	WNW	12.1	NW	22	5	11	14	6.5	67
BUFFALO	215	987.4	1015.1	26.1	12.8	19.3	1.1	34.4	30	7.8	16	4	0	12.2	66	15	- 49	7	6	4	0	0	4.2	SW	13.0	SW	22+	8	13	9	5.8	69
NEW YORK U	40	1003.3	1014.5	26.7	16.1	21.6	-0.3	35.6	26	12.2	22	5	0	16.7	54	69	- 15	23	10	5	0	0	3.1	W	8.9	SW	21+	11	10	9	5.3	53
NEW YORK LA GUARDIA	6	1012.4	1014.3	26.1	17.2	21.6	-0.3	35.6	27	13.9	22+	4	0	13.3	64	36	- 50	15	8	5	0	0	4.6	S	10.7	NW	21+	8	12	10	5.9	
ROCHESTER	166	995.7	1014.8	26.7	12.8	19.5	0.1	33.9	30+	7.8	16	3	0	11.7	64	6	- 59	2	4	1	0	0	4.1	WSW	11.6	W	22	8	14	8	5.4	71
SCHENECTADY	66			26.1	13.3	19.8	-0.4	33.3	30+	9.4	17	4	0			60	- 29	25	9	4	0	0						18	6	6	3.9	
SYRACUSE	127	992.1	1013.8	25.6	12.8	19.2	-0.4	33.3	30+	7.2	21+	3	0	12.2	64	63	- 12	48	7	3	0	0	3.2	WNW	14.3	NW	20	9	10	11	5.7	69
NORTH CAROLINA																																
ASHEVILLE U	671	938.1		25.6	15.6	20.7	-1.4	32.8	10	10.0	2	2	0			69	- 21	18	12	7	0	0	3.1	NW#	11.2	NW	12	6	9	15	6.8	49
CAPE HATTERAS R	2	1014.1	1014.8	26.1	18.9	22.6	-1.4	31.7	7	13.9	26	0	0	19.4	82	198	93	94	13	7	0	0	4.7	SW	10.3*	SW	21+	2	15	13	7.5	55
CHARLOTTE	224	987.9	1015.6	29.4	18.9	24.1	-0.7	36.7	10	14.4	2	9	0	17.8	71	51	- 41	15	10	4	0	0	3.0	NE	11.6	SW	11+	8	6	16	6.7	66
GREENSBORO	272	984.4	1016.0	27.8	16.7	22.1	-1.7	35.0	10	12.2	24+	2	0	16.1	74	90	2	39	10	7	0	0	3.0	SW	12.5	SW	20	4	10	16	6.9	53
RALEIGH	132	1001.6	1015.1	28.3	16.7	22.6	-1.3	35.6	10	12.2	13	4	0	17.2	74	44	- 50	14	11	6	0	0	2.7	SW	8.9*	NW	6	5	12	13	6.6	57
WILMINGTON	9	1012.4	1015.3	29.4	19.4	24.4	-1.0	35.6	11+	15.0	1	9	0	20.0	80	98	- 10	25	14	6	0	0	3.0	SW	17.0	SW	20	2	14	14	7.2	56
WINSTON SALEM	295	981.0	1015.8	27.8	17.8	22.8	-1.4	35.6	10	12.8	2	3	0	15.6	68	107	14	31	9	7	0	0	3.4	NE	10.3*	NNW	3	5	10	15	6.8	
NORTH DAKOTA																																
BISMARCK	502	948.1	1010.3	26.1	13.9	20.1	2.1	33.9	29	8.9	17	1	0	12.8	65	138	52	32	11	14	0	0	4.3	SSE	22.4	N	23	4	14	12	6.2	76
FARGO	274	977.3	1011.2	26.7	14.4	20.4	2.2	35.6	29	4.4	12	3	0	15.0	71	43	- 34	14	10	8	0	0	4.6	SSE	22.4	SW	7	5	10	15	6.6	65
WILLISTON	579	943.3		25.0	11.7	18.3	1.1	32.2	28	7.2	27	1	0			76	- 8	29	12	10	0	0	4.8	NE#	27.3	NW	29	8	9	13	6.4	61
OHIO																																
AKRON	369	977.9	1015.6	26.7	13.9	20.2	0.2	34.4	27	5.6	21	3	0	12.2	64	62	- 46	30	9	7	0	0	2.9	WSW	13.0*	NW	9	12	9	9	4.9	
CINCINNATI OBS	232			28.9	16.1	22.5	-0.5	33.9	8	9.4	22	6	0			31	- 75	9	9	8	0	0	1.5	S#	15.2	NW	10					60
CINCINNATI U	169	992.3		30.0	17.2	23.7	0.1	35.6	10	12.2	13+	11	0			19	- 84	6	7	8	0	0										
CLEVELAND	237	987.7	1015.3	26.7	13.3	19.9	0.3	33.9	27	5.0	23+	3	0	12.8	64	49	- 38	26	6	3	0	0	3.6	SSE	17.9	W	10	13	8	9	4.7	78
COLUMBUS	247	986.1	1015.7	28.9	14.4	21.6	-0.3	35.0	10	7.2	22+	9	0	13.3	61	32	- 74	14	9	6	0	0	3.0	S	16.1	NW	10	10	11	9	5.2	69
COLUMBUS U	221			28.3	16.7	22.7	0.1	34.4	27+	8.3	12	7	0			45	- 51	15	8	5	0	0										
DAYTON	304	983.1	1015.4	28.3	15.0	21.6	-0.3	33.3	9+	8.9	21+	6	0	13.3	61	84	- 20	32	6	5	0	0	3.4	SSW	23.7	W	10	10	10	10	5.0	58
MANSFIELD	395			26.7	13.3	20.2	0.3	32.8	27+	5.6	21+	2	0			45	- 62	27	9	6	0	0						10	12	8	5.0	
SANDUSKY U	185	993.5		27.2	15.6	21.3	-0.1	35.0	28	9.4	22+	5	0			30	- 74	15	8	5	0	0	3.1		31.7	W	10	13	16	1	3.7	79
TOLEDO	206	997.8	1014.9	27.8	12.2	19.9	-0.2	35.6	27	3.3	21	6	0	13.3	68	109	13	54	8	6	0	0	3.1	SW	18.8	SW	10	9	13	8	5.1	73
YOUNGSTOWN	359	973.4	1015.6	25.6	12.2	19.0	-0.8	32.8	27	4.4	23	2	0	12.8	70	53	- 38	25	10	4	0	0	3.4	NW	13.0*	WNW	10	10	9	11	5.3	
OKLAHOMA																																
OKLAHOMA CITY	390	969.7	1011.8	32.2	20.0	25.9	1.2	37.2	15	15.6	11	19	0	18.3	65	60	- 54	42	5	5	0	0	5.6	SSE	24.1	W	16	13	7	10	5.3	79
TULSA	206	988.7	1012.7	33.9	21.1	27.6	2.4	37.8	28+	16.7	17+	25	0	20.0	67	13	-106	12	4	3	0	0	5.2	SSE	12.5	N	16	11	13	6	5.3	62
OREGON																																
ASTORIA	2	1017.5	1018.2	17.2	9.4	13.2	-0.6	23.9	15+	6.1	13	0	0	10.0	81	46	- 31	13	16	0	0	0	3.9	NW	10.7*	NW	16+	3	7	20	7.9	
BURNS U	1265	871.5		21.7	6.1	13.9	-1.6	31.1	18	- 0.6	22	0	1			21	- 1	9	7	4	0	0						6	11	13	6.2	
EUGENE	110	1004.2		21.7	9.4	15.6	-0.4	33.3	15	5.6	3	1	0			36	- 1	18	10	1	0	0	2.7		8.9*	NW	5	8	2	20	6.9	
MEACHAM	1234			17.8	6.1	12.1	0.0	30.0	18	1.7	22+	0	0			18	- 45	8	11	0	0	0						5	9	16	6.7	
MEDFORD	396	968.5	1016.2	25.6	8.9	17.3	-0.6	36.7	15	2.8	10	6	0	8.3	60	23	- 3	13	6	1	0	0	2.7	WNW	9.4*	N	22	9	9	12	5.7	
PENDLETON	452	960.4	1013.6	25.6	11.7	18.8	0.3	35.6	16	6.1	22	5	0	5.6	45	5	- 24	3	5	0	0	0	5.5	W	14.3*	W	5	9	11	10	5.7	
PORTLAND	6	1011.5	1017.1	20.0	11.1	15.6	-1.1	32.2	15	6.7	3	1	0	9.4	69	43	1	12	13	0	0	0	3.3	NW	11.2	NW	2	6	5	19	7.5	43
PORTLAND U	9			21.7	12.2	16.8	-0.6	33.9	15	8.9	3	1	0			61	18	18	13		0	0										
ROSEBURG	154	998.8		23.3	9.4	16.4	0.1	35.6	15	3.9	3	4	0			46	8	25	9	0	0	0	2.6	N#	9.8	NW	2	5	11	14	6.7	58
SALEM	59	1010.5	1017.8	21.7	8.3	15.1	-1.4	33.9	15	3.9	27+	3	0	9.4	71	22	- 15	9	10	0	0	0	3.1	NW	9.4*	WNW	2	6	5	19	7.3	
SEXTON SUMMIT R	1169	884.6		16.7	6.1	11.5	-1.7	29.4	15	0.6	3	0	0			37	- 2	15	7	0	T	T	6.0	N				10	8	12	5.8	
PACIFIC AREA																																
CANTON ISLAND	3	1009.3	1009.5	31.7	26.1	28.8	0.0	32.2	16+	23.3	13	10	0	23.3	75	44	- 23	20	11	0	0	0	5.1	E	10.3*	E	29+	6	12	12	6.2	
ENIWETOK	5	1009.3		30.6	25.6	27.9	-0.3	32.2	10+	23.9	30+	2	0			231	146	70	26	1	0	0										
TAGUAC GUAM R	110			30.0	23.3	26.6	-0.2	31.1	25	20.6	13+	0	0			181	31	49	28	4	0	0			8.5	SE	29+					89
JOHNSTON	2	1013.4	1014.1	27.8	25.0	26.2	-0.6	28.3	22	23.9	18+	0	0	23.3	84	54	32	13	22	0	0	0	7.0	E	13.4	SE	8	0	14	16	7.3	57
KOROR R	29	1007.0	1009.9	31.1	24.4	27.7	0.4	32.8	8	22.2	22	7	0	25.0	86	355	26	87	19	4	0	0	3.1	S	8.9	SW	15	0	2	28	9.7	
KWAJALEIN		1009.9	1010.0	30.6	25.0	27.8	0.4	31.7	21+	22.8	13	0	0	24.4	84	350	129	66	26	2	0	0	4.4	E	13.9	SE	18	2	6	22	8.4	
PONAPE R	37	1004.9	1009.5	31.1	22.8	26.9	0.2	32.8	5	21.1	20	7	0	23.9	88	244	-180	72	21	3	0	0	1.1	ESE	6.7	E	19	0	6	24	8.9	52
TRUK MOEN ISLAND	2	1009.7	1009.7	30.6	24.4	27.4	0.4	31.7	15+	23.3	24+	0	0	23.9	84	194	-107	56	18	2	0	0	2.0	N	12.5	SW	17	0	4	26	9.2	31
WAKE	3	1013.6	1013.6	30.6	25.0	27.7	0.2	31.7	29+	22.8	3	0	0	23.3	78	86	37	30	14	2	0	0	5.9	E	11.2*	ESE	15	7	12	11	6.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 32.2 °C or above	Temperature: No. of days Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .25 mm. or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers) Speed	Wind: Fastest mile (1.6 kilometers) Direction	Wind: Fastest mile (1.6 kilometers) Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PACIFIC AREA																																
YAP R	16	1008.0	1009.1	31.1	24.4	27.7	-0.1	32.2	26+	22.8	21+	4	0	24.4	85	223	- 50	46	18	2	0	0	2.7	SW	11.6	N	21	0	1	29	9.8	65
PENNSYLVANIA																																
ALLENTOWN	115	1000.7	1014.9	27.8	13.9	20.8	0.1	35.6	27+	8.3	22	4	0	13.3	67	45	- 58	14	11	6	0	0	3.8	WNW	13.0*	NW	12	8	7	15	6.0	
ERIE	223	989.1	1015.0	25.0	13.9	19.2	-0.1	32.2	28+	7.2	23	2	0	12.2	66	22	- 56	14	8	2	0	0	4.2	S	10.3*	S	11	12	11	7	4.8	
HARRISBURG	102	1001.0	1014.8	28.9	16.1	22.4	0.6	37.2	27	8.9	22	8	0	14.4	65	60	- 27	19	13	4	0	0	3.8	W	21.5	W	10	8	9	13	6.0	59
PHILADELPHIA	2	1013.3	1014.6	28.3	14.4	21.3	-0.3	36.1	28+	8.3	23	7	0	14.4	67	73	- 30	31	9	5	0	0	3.7	WSW	11.6	S	29	7	10	13	6.0	59
PITTSBURGH	347	985.0	1015.5	26.1	12.8	19.6	-0.7	33.9	27	3.9	22	2	0	12.8	68	61	- 35	28	12	5	0	0	3.1	NNW	13.4*	NW	10	6	11	13	6.1	52
PITTSBURGH U	228			27.8	15.0	21.4	-0.8	34.4	27	8.3	21	7	0			87	- 14	25	13		0	0										
READING U	81	1002.2	1013.8	28.3	16.1	22.2	-0.1	35.6	27	11.7	22	6	0			93	- 2	18	12	7	0	0	4.2	NW#	18.3	E	7	10	7	13	5.6	55
SCRANTON	287	980.8	1014.6	26.1	13.3	19.7	0.1	33.3	27	6.7	16	3	0	12.8	68	49	- 50	14	10	4	0	0	3.1	ESE	10.3	W	17+	8	9	13	6.4	55
WILLIAMSPORT	161	996.1	1015.0	27.2	13.3	20.2	-0.4	35.0	27	6.1	22	4	0	13.9	70	63	- 19	23	11	7	0	0	3.3	W	9.8*	NNW	6	8	10	12	6.1	
RHODE ISLAND																																
BLOCK ISLAND	34	1009.3		21.1	13.9	17.5	0.3	30.0	28	10.0	13+	0	0			24	- 41	7	7	1	0	0						10	7	13	5.8	
PROVIDENCE	17	1007.4	1013.5	25.6	14.4	19.7	0.7	33.9	27	9.4	22	3	0	12.8	68	90	20	40	11	3	0	0	4.5	WNW	10.7*	NW	28+	9	11	10	5.7	60
SOUTH CAROLINA																																
CHARLESTON	12	1013.2	1015.1	31.1	21.1	26.2	0.6	36.7	11	16.7	2	16	0	20.6	78	364	238	135	15	15	0	0	3.6	S	18.8Y	W	20	5	11	14	6.9	53
CHARLESTON U	3			29.4	22.8	26.1	-0.4	35.0	12	17.8	2	8	0			263	155	58	17		0	0	4.4		15.2	NW	17					
COLUMBIA	66	1002.5	1015.1	30.6	20.0	25.3	-1.2	38.9	10	15.0	2	14	0	18.3	72	123	25	37	12	5	0	0	3.0	NE	14.3*	SW	21	9	7	14	6.2	49
FLORENCE	45	1009.3	1015.0	30.0	20.0	25.0	-1.0	38.3	11	13.9	1	14	0	18.9	75	73	- 36	18	13	5	0	0	3.6	NE	10.3*	WNW	14	8	4	18	6.6	
GNVLE SPARTANBURG	292	979.0	1015.6	28.9	18.9	23.8	-1.9	36.1	10	14.4	3+	8	0	17.2	71	120	47	37	15	7	0	0	3.1	NE	13.0	SW	20	7	7	16	6.6	49
SOUTH DAKOTA																																
HURON	391	964.0	1010.2	28.3	15.0	21.6	1.6	37.2	29	8.3	16	3	0	16.7	75	66	- 14	17	14	13	0	0	5.1	SE	19.7	E	22	7	10	13	6.2	66
RAPID CITY	965	898.3	1010.0	27.2	12.8	20.1	1.8	34.4	29	9.4	6	7	0	12.2	66	139	61	102	13	10	0	0	4.5	NNW	18.8	W	5	13	9	8	4.9	63
SIOUX FALLS	433	960.8	1011.3	29.4	16.7	23.1	3.0	37.2	29	10.0	12	7	0	15.6	66	64	- 47	21	14	12	0	0	5.7	S	17.9*	WNW	26	9	9	12	5.5	
TENNESSEE																																
BRISTOL	459	962.1	1015.8	26.7	16.1	21.3	-1.3	32.2	10	11.7	2	1	0	16.1	76	111	25	44	13	10	0	0	1.8	NE	13.0*	WNW	7	3	13	14	7.1	
CHATTANOOGA	204	988.3	1015.8	29.4	18.3	23.7	-1.1	35.0	14+	14.4	2	7	0	18.9	79	124	30	30	14	6	0	0	2.5	S	13.9	NW	14	5	8	17	7.1	43
KNOXVILLE	290	981.1	1016.2	27.8	17.2	22.4	-2.1	32.8	10	13.3	3	1	0	17.8	79	84	- T	19	16	9	0	0	2.4	ENE	25.0	N	14	3	9	18	7.5	30
MEMPHIS	80	1000.2	1014.7	31.1	20.6	25.9	-0.2	36.1	14+	16.7	4+	12	0	20.0	72	110	17	50	7	6	0	0	3.4	SE	13.0	N	16	13	8	9	4.7	84
MEMPHIS U	83			31.1	22.2	26.6	0.4	35.6	14+	18.9	17	13	0			85	- 7	43	8		0	0										
NASHVILLE	176	995.2	1014.9	30.6	18.3	24.4	-0.8	35.6	10+	16.1	22	7	0	18.3	72	78	- 4	38	12	13	0	0	2.8	S	15.2	NW	13	7	13	10	5.9	68
OAK RIDGE	276	983.5		28.9	17.2	23.0	-0.9	34.4	10	13.9	3+	4	0			92	10	17	17	8	0	0	2.2		21.9Y		20	5	10	15	6.9	
TEXAS																																
ABILENE	536	951.2	1011.0	32.2	20.6	26.4	-0.4	36.7	15+	16.7	19+	17	0	17.8	62	41	26	24	6	6	0	0	4.1	SSE	24.6	NW	19	12	10	8	4.9	73
AMARILLO	1099	887.2	1009.9	30.6	16.7	23.4	-0.8	36.1	28	12.2	10+	13	0	13.9	61	91	18	29	8	9	0	0	7.1	S	17.0	S	4	16	6	8	4.0	78
AUSTIN	182	991.1	1012.5	34.4	22.2	28.3	0.6	37.8	16	19.4	2	27	0	20.0	65	53	- 28	22	8	10	0	0	3.8	S	15.6	N	16	5	20	5	5.6	59
BROWNSVILLE	5	1009.6	1012.1	32.8	24.4	28.7	0.6	35.0	15	22.2	3+	26	0	23.3	76	76	1	73	3	2	0	0	6.0	SE	14.8	SE	30	7	19	4	5.3	53
CORPUS CHRISTI	13	1011.6	1012.7	33.3	23.9	28.4	0.4	35.6	16	21.1	17	25	0	22.8	73	60	- 1	44	5	3	0	0	5.6	SE	17.9	SE	30	1	22	7	6.1	66
DALLAS	147	994.3	1012.4	33.9	23.3	28.5	1.1	37.2	15+	20.0	17	25	0	20.0	62	38	- 45	30	3	3	0	0	5.4	SSE	13.4	NW	10+	9	17	4	5.1	74
DEL RIO	313			35.0	22.8	28.7		37.8	16+	18.9	7	27	0			38		21	4	6	0	0										
EL PASO	1194	883.0	1006.8	35.0	19.4	27.3	0.3	38.3	30+	15.0	10	28	0	2.8	24	1	- 16	1	3	1	0	0	3.6	WSW	21.0	SE	14	24	5	1	1.8	93
FORT WORTH	166	991.9	1012.3	34.4	22.2	28.4	0.9	37.8	15+	20.0	17+	25	0	18.9	60	14	- 61	13	2	5	0	0	4.3	SSE	10.7*	SSE	5	11	13	6	5.0	
GALVESTON U	2			29.4	25.6	27.4	-0.2	30.6	30+	21.1	21+	0	0			109	42	86	5		0	0	4.3		9.8	NE	16					76
GALVESTON	2	1012.0	1014.3	30.6	25.0	27.8	0.0	31.7	30+	21.7	21	0	0	22.2	73	194	131	127	8	10	0	0	4.5	S				10	16	4	5.0	
HOUSTON U	12			32.8	23.9	28.4	0.6	36.7	16	20.6	26	23	0			212	115	47	13	0	0	0										
HOUSTON	15	1010.8	1013.4	33.9	22.2	27.8	-0.3	37.8	16	20.0	2	22	0	22.2	78	198	104	82	11	10	0	0	3.8	SSE	10.3*	SSE	30+	3	18	9	6.0	74
LAREDO	152	995.5	1010.6	36.7	24.4	30.4	0.6	39.4	16+	20.0	24+	29	0	20.6	60	144	94	134	4	5	0	0	5.5	ESE	19.7*	S	24	8	14	8	5.3	
LUBBOCK	988	901.2	1010.4	31.7	17.8	24.6	-0.7	36.1	22	14.4	19+	15	0	15.6	63	53	- 11	11	9	11	0	0	6.6	ESE	23.2*	NNW	18	15	9	6	4.2	
MIDLAND	870	912.6	1008.9	33.3	19.4	26.2	-1.1	37.2	22+	14.4	19	24	0	15.0	54	66	25	44	7	8	0	0	5.3	SSE	20.6*	NNW	19	19	3	8	4.0	
PORT ARTHUR	5	1012.3	1013.7	33.9	22.2	28.0	1.0	37.2	15+	20.6	8+	27	0	22.2	76	73	- 36	27	12	11	0	0	3.2	S	13.9	SE	26	4	21	5	5.7	59
SAN ANGELO	580	944.5	1010.0	33.3	21.1	27.3	-0.8	37.8	10	16.1	18	23	0	18.3	61	72	26	25	9	8	0	0	3.8	SSE	15.6*	S	7	12	8	10	5.2	
SAN ANTONIO	241	988.0	1011.9	34.4	22.8	28.6	0.8	37.8	16	20.0	3	28	0	20.0	65	58	- 17	30	6	6	0	0	4.1	SE	15.6	NNE	16	9	16	5	5.2	70
VICTORIA	32	1008.3		33.3	23.3	28.2	0.8	36.7	16	20.6	3	27	0			124	47	43	8	8	0	0	4.2		25.0Y		16	2	21	7	6.1	
WACO	152	991.9	1012.6	34.4	22.8	28.7	0.9	37.8	15+	20.6	4+	28	0	20.0	61	46	- 21	22	3	6	0	0	6.0	SSE	17.9*	SSE	30	9	14	7	5.2	
WICHITA FALLS	303	974.9	1010.9	35.0	21.1	28.1	1.0	39.4	15	17.2	11+	26	0	18.3	59	23	- 59	21	3	4	0	0	4.9	S	15.6*	NNE	16	15	7	8	4.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JUNE 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days					No. of days		Snow, Sleet		Average speed	Prevailing direction	Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground			Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
UTAH																																
MILFORD	1533	841.2		27.2	8.3	17.6	-1.0	33.9	20	2.2	30	3	0			31	20	21	9	6	0	0						14	11	5	3.8	
SALT LAKE CITY	1286	865.2	1011.1	25.6	9.4	17.4	-2.0	35.0	27	3.9	8	2	0	6.1	52	42	18	14	10	9	0	0	4.4	S	28.2	W	3	11	11	8	4.7	71
WENDOVER	1291	867.9		22.8	12.2	17.5	-3.5	33.3	27	6.1	4	1	0			50	38	16	12	11	0	0						13	8	9	4.8	
VERMONT																																
BURLINGTON	101	998.1	1012.6	26.1	11.1	18.6	-0.1	32.8	26	5.0	11+	3	0	12.2	69	48	40	15	9	9	0	0	3.3	S	11.2	S	20	4	13	13	6.8	65
VIRGINIA																																
LYNCHBURG	289	990.3		28.3	16.1	22.1	-0.7	34.4	10	10.6	2	5	0			33	- 70	21	5	2	0	0	2.6		10.7	SW	20	6	14	10	6.1	66
NORFOLK	8	1013.7	1015.2	27.8	17.8	22.9	-1.3	35.6	10	12.8	24	5	0	17.2	74	247	155	174	12	5	0	0	4.1	S	17.4	NE	3	6	12	12	6.3	51
RICHMOND	49	1008.8	1015.0	28.3	16.1	22.2	-1.4	34.4	10	11.1	1	7	0	16.7	75	178	83	117	8	4	0	0	3.4	S	11.6	N	3	7	13	10	5.9	61
ROANOKE	358	974.1	1015.8	28.9	16.7	22.7	-0.3	35.0	26+	11.1	23	6	0	13.9	62	66	- 30	32	8	5	0	0	3.7	WSW	14.3*	NNW	7	5	14	11	6.1	
WASHINGTON																																
OLYMPIA	58	1010.5	1017.7	20.0	7.2	13.7	-1.4	31.1	15	1.1	3	0	0	8.9	75	16	- 29	5	10	0	0	0	3.6	SSW	10.3*	WSW	9	5	5	20	7.5	
SEATTLE TACOMA	122	1003.0	1017.1	20.0	11.1	15.5	0.3	31.1	15	7.8	22	0	0	9.4	71	43	3	17	13	0	0	0	3.9	SSW	10.3*	SSW	21	6	3	21	7.7	
SEATTLE U	4			19.4	11.7	15.5	-0.8	30.0	15	10.0	22+	0	0			50	14	11	14		0	0			11.6	S	24					46
SPOKANE	718	944.0	1012.0	22.8	10.0	16.5	0.2	33.3	18+	6.7	22+	3	0	6.7	55	24	- 13	11	6	2	0	0	4.1	SSW	12.5	SW	29	6	8	16	6.8	62
STAMPEDE PASS R	1206	879.8		11.7	5.0	8.3	-1.1	27.8	15	1.1	9	0	0			86	- 18	19	22	0	T	T						4	3	23	8.2	
TATOOSH ISLAND	31	1014.9	1017.9	13.9	10.0	11.9	-0.3	17.2	15	8.9	26+	0	0	10.0	89	48	- 24	17	15	0	0	0	4.9	SW	12.1	W	4	3	8	19	7.7	38
WALLA WALLA U	289	976.9		25.6	13.9	19.6	0.1	36.1	16	8.3	3	5	0			5	- 26	2	6	2	0	0	2.7	W#	10.7	W	21	7	7	16	6.2	65
YAKIMA	323	974.4	1012.8	26.1	10.0	18.1	0.1	36.7	15	3.3	26	6	0	5.6	46	7	- 14	3	5	0	0	0	3.8	NW	11.2*	WNW	2	8	11	11	5.7	
WEST INDIES																																
SAN JUAN P.R.	5	1015.1	1017.7	31.1	23.3	27.1	0.4	33.3	14	21.1	28	3	0	22.8	79	70	- 74	38	15	2	0	0	4.1	ENE	12.1	E	2	1	18	11	7.0	61
SWAN ISLAND	9	1011.3		30.6	25.6	28.1	0.1	31.7	27	23.3	27+	0	0			53	-111	23	13	6	0	0						1	9	20	7.8	
WEST VIRGINIA																																
CHARLESTON	286	980.5	1015.8	26.7	14.4	20.6	-1.3	32.2	26+	6.7	22	2	0	15.0	73	68	- 26	23	11	4	0	0	2.1	SW	13.0*	WNW	11	5	12	13	6.5	
ELKINS	600	947.7	1016.6	24.4	11.1	18.0	-1.3	31.1	26	3.3	23	0	0	12.8	78	113	- 19	30	13	9	0	0	2.5	NW	14.3*	W	20	6	6	18	6.9	
HUNTINGTON	252	986.1	1016.0	27.2	15.0	21.0		33.3	10	6.7	22	2	0	16.1	75	41	- 67	16	7	6	0	0	2.2	S	10.3*	NNW	10	5	12	13	6.3	
PARKERSBURG U	187			27.8	15.0	21.4	-1.1	33.9	26	8.9	22	5	0			117	9	43	10	10	0	0	2.4		17.0	NW	10					61
WISCONSIN																																
GREEN BAY	208	991.8	1014.2	27.8	12.8	20.2	2.2	33.3	26+	4.4	21	3	0	15.0	74	68	- 18	36	11	7	0	0	3.2	SW	17.9	NW	27	8	11	11	5.7	69
LA CROSSE	199	989.4	1013.7	28.3	15.0	21.8	1.4	36.7	30	7.2	12+	8	0	13.9	65	60	- 47	18	9	10	0	0	4.1	S	28.2*	NNW	8	8	15	7	5.3	
MADISON	262	979.7	1014.5	28.3	13.3	20.9	1.9	34.4	30	3.9	21	6	0	15.0	70	207	107	93	8	9	0	0	3.3	S	24.1	N	7	7	15	8	5.6	66
MILWAUKEE	205	990.4	1015.1	25.0	12.2	18.7	1.3	33.9	26	3.3	22	3	0	12.8	70	38	- 54	21	8	7	0	0	3.9	SSW	20.1	NW	8	10	10	10	5.2	77
WYOMING																																
CASPER	1621	835.0	1009.1	26.7	10.0	18.3	1.0	35.0	27	6.1	1	2	0	3.3	46	24	- 8	16	5	5	0	0	4.9	WSW	13.9*	WSW	29	13	6	11	4.5	
CHEYENNE	1867	812.1	1009.5	25.6	10.0	17.8	1.4	34.4	28	6.1	10	4	0	5.6	52	72	19	29	10	8	0	0	5.2	WNW	14.8	W	14+	10	14	6	4.6	76
LANDER	1696	832.9	1009.4	24.4	8.9	16.7	0.1	33.9	27	5.0	30	2	0	4.4	50	98	63	75	9	8	0	0	3.4	W	21.9	SW	29	14	9	7	4.3	72
SHERIDAN	1202	881.7	1010.9	23.3	10.0	16.7	0.1	33.3	27	3.9	30	1	0	9.4	65	120	54	47	14	12	0	0	3.1	WNW	22.4	W	6	9	7	14	5.5	60

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°F) 1962 - 1963

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
ALABAMA														
Birmingham	0	0	9	100	382	686	822	672	225	84	25	0	3005	2779
Huntsville	0	0	20	125	448	813	905	747	281	114	34	0	3487	3070
Mobile	0	0	0	41	242	441	575	473	108	6	3	0	1889	1659
Montgomery	0	0	0	86	359	626	715	591	185	37	13	0	2612	2291
ALASKA														
Anchorage	197	249	578	836	1274	1499	1415	1156	1266	986	557	393	10406	10864
Annette	169	181	286	489	623	782	864	561	746	605	442	374	6122	7159
Barrow	758	691	1037	1477	1860	2294	2299	2295	2630	1805	1214	928	19288	20174
Barter Island	776	730	999	1373	1747	2160	2349	2203	2524	1756	1172	925	18714	19862
Bethel	186	374	686	1064	1533	1931	1404	1507	1543	1363	751	533	12875	13196
Cold Bay	418	392	536	780	868	1103	949	997	940	955	745	565	9248	9883
Cordova	353	337	537	710	952	1181	1147	823	1118	917	614	495	9184	9764
Fairbanks	86	223	696	1056	1816	2218	1959	1830	1777	1208	482	342	13693	14279
Juneau	250	305	486	645	810	1132	1147	885	1023	846	500	431	8460	9075
King Salmon	236	327	597	918	1092	1629	1235	1305	1289	1158	661	513	10960	11343
Kotzebue	294	347	765	1273	1720	2100	1691	1815	2212	1532	943	627	15319	16105
McGrath	99	318	718	1171	1875	2330	1970	1787	1738	1233	615	416	14170	14283
Nome	374	428	759	1137	1463	1997	1384	1507	1783	1408	842	648	13730	14171
St. Paul Island	561	536	681	889	982	1172	1068	1221	1101	1065	890	738	10904	11193
Shemya	502	503	529	728	914	937	936	882	960	882	781	670	9224	9671
Yakutat	357	312	507	670	877	1066	1048	816	1036	890	583	492	8654	9092
ARIZONA														
Flagstaff	32	38	184	536	747	1026	1218	788	940	757	372	255	6893	7029
Phoenix (U)	0	0	0	1	79	233	441	115	123	60	0	0	1052	
Phoenix	0	0	0	1	115	301	507	148	151	50	0	0	1273	1598
Prescott	0	0	12	220	433	726	910	505	637	472	66	37	4018	4362
Tucson	0	0	0	13	137	336	515	215	234	79	0	0	1529	1882
Winslow	0	0	15	232	506	922	1147	618	591	389	25	8	4453	4662
Yuma	0	0	0	0	36	165	359	28	74	28	0	0	690	878
ARKANSAS														
Ft. Smith	0	0	10	86	435	704	1020	724	317	93	41	0	3430	3292
Little Rock	0	0	17	78	421	714	954	709	258	97	35	0	3283	3219
Texarkana	0	0	0	56	346	579	848	569	186	47	23	0	2654	2533
CALIFORNIA														
Bakersfield	0	0	0	44	257	472	618	179	276	223	14	1	2084	2122
Bishop	2	0	11	170	521	750	877	454	629	496	98	76	4084	4275
Blue Canyon	17	58	75	337	531	582	762	538	879	887	424	281	5371	5596
Burbank	0	0	0	51	157	268	379	121	272	229	83	45	1605	1646
Eureka (U)	339	219	229	312	375	469	579	266	484	440	336	312	4360	4643
Fresno	0	0	0	69	291	538	698	234	356	266	30	0	2482	2611
Long Beach	0	0	0	43	145	212	327	135	275	214	28	8	1387	1803
Los Angeles (U)	0	0	0	33	138	228	286	101	202	161	37	24	1210	1349
Los Angeles	2	0	0	35	154	253	296	123	255	225	63	15	1421	2061
Mt. Shasta (R)	18	51	95	421	649	781	918	571	782	740	291	232	5549	5722
Oakland	94	38	86	134	262	474	582	215	379	319	177	97	2857	2870
Point Arguello (R)	254	188	225	186	330	365	471	231	430	389	317	249	3635	3595
Red Bluff	0	0	10	68	302	487	678	250	434	360	75	1	2665	2515
Sacramento (U)	0	0	3	92	249	540	679	202	371	310	100	5	2551	2419
Sacramento	0	0	0	97	303	581	736	249	428	333	115	2	2844	2502
Sandberg (R)	3	2	24	205	419	572	757	394	744	678	319	211	4328	4209
San Diego	0	0	1	25	154	258	299	114	227	180	43	21	1322	1458
San Francisco (U)	270	157	196	130	182	369	445	179	332	313	234	201	3008	3001
San Francisco	143	57	120	162	271	468	598	250	399	355	247	183	3253	3015
San Jose (U)	5	3	12	92	216	417	521	164	323			23		
Santa Catalina									361	314	228	151		
Santa Maria	136	91	131	162	274	366	477	184	423	365	245	184	3038	2967
Stockton									418	339	78	1		
COLORADO														
Alamosa	67	101	299	591	938	1228	1625	1205	1011	673	353	186	8277	8529
Colorado Springs	6	11	124	335	728	910	1331	730	817	415	167	30	5604	6514
Denver	0	19	112	352	703	961	1417	768	748	442	156	50	5728	5982
Grand Junction	0	0	39	255	620	1099	1633	733	708	411	32	3	5533	5641
Pueblo	0	0	51	262	654	892	1411	732	703	281	87	9	5082	5462
CONNECTICUT														
Bridgeport	2	11	125	342	705	1114	1152	1111	811	484	255	35	6147	5617
Hartford	3	20	279	428	819	1310	1277	1209	890	494	222	43	6994	6235
Middletown	25	46	215	438	805	1226	1263	1184	890	532	285	22	6931	
New Haven	4	15	132	356	707	1144	1158	1110	821	496	272	46	6261	5897
DELAWARE														
Wilmington	0	4	113	266	672	1072	1130	1044	641	370	180	10	5502	4930
DIST. OF COLUMBIA														
Washington (U)	0	0	79	198	634	963	951	892	455	239	84	3	4498	
Washington	0	0	59	182	599	981	1034	946	505	245	87	1	4639	4224
FLORIDA														
Apalachicola (U)	0	0	0	33	192	363	450	398	104	11	1	0	1552	1308
Daytona Beach	0	0	0	16	117	320	264	288	73	15	0	0	1093	879
Fort Myers	0	0	0	0	44	160	110	100	13	1	0	0	428	442
Jacksonville	0	0	0	43	199	390	385	379	90	9	4	0	1499	1239
Key West	0	0	0	0	4	58	11	6	0	0	0	0	79	108
Lakeland (U)	0	0	0	6	99	220	209	230	33	0	0	0	797	661
Miami	0	0	0	0	26	120	48	46	6	0	0	0	246	214
Miami Beach	0	0	0	0	14	61	24	22	1	0	0	0	122	141
Orlando	0	0	0	4	98	255	209	232	33	2	0	0	833	782
Pensacola (U)	0	0	0	37	221	399	515	455	134	11	1	0	1773	1451
Tallahassee	0	0	6	64	262	438	491	437	151	33	8	0	1890	1485
Tampa	0	0	0	2	98	240	212	229	37	2	0	0	820	683
West Palm Beach	0	0	0	0	31	140	73	84	9	0	0	0	337	253
GEORGIA														
Athens	0	0	31	120	424	732	817	694	251	98	43	0	3210	2929
Atlanta	0	0	40	132	471	759	857	724	272	100	42	0	3397	2961
Augusta	0	0	16	110	375	640	702	599	206	80	31	0	2759	2397
Columbus	0	0	8	98	382	621	702	585	201	63	14	0	2674	2383
Macon	0	0	7	87	352	606	675	561	167	45	12	0	2512	2136
Rome	0	0	33	167	509	828	917	780	324	126	49	0	3733	3326
Savannah	0	0	5	79	317	543	557	494	168	44	21	0	2228	1819
Thomasville (U)	0	0	2	54	261	435	502	430	116	20	5	0	1825	1529
IDAHO														
Boise	8	32	56	369	703	908	1286	600	636	498	164	124	5384	5835
Idaho Falls 46W (R)	34	87	224	520	934	1274	1663	858	950	773	323	239	7879	8475
Idaho Falls 42NW (R)	27	90	268	579	964	1301	1735	909	964	766	353	238	8194	8760
Lewiston	22	24	93	414	645	867	1259	674	609	471	175	67	5320	5542
Pocatello	12	48	134	416	795	1074	1454	732	824	688	261	187	6625	7041
ILLINOIS														
Cairo (U)	0	0	30	132	510	910	1134	895	355	149	48	0	4163	3821
Chicago (Midway)	1	1	112	276	674	1234	1600	1277	720	383	225	26	6529	6113
Chicago (O'Hare)	6	1	179	310	740	1291	1655	1339	776	425	281	59	7062	
Moline	8	1	149	342	774	1292	1717	1315	734	370	186	15	6903	6378

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°F)

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
ILLINOIS (Cont'd.)														
Peoria	4	0	137	341	717	1279	1613	1292	723	367	200	14	6687	6025
Rockford	14	1	179	339	778	1325	1725	1357	819	425	246	34	7242	6830
Springfield	2	2	90	268	653	1186	1486	1198	630	291	126	6	5938	5535
INDIANA														
Evansville	0	0	92	223	615	1075	1269	1008	471	250	112	0	5115	4586
Ft. Wayne	2	7	160	314	723	1281	1516	1294	757	457	242	29	6782	6265
Indianapolis	3	2	142	286	673	1221	1406	1222	691	352	185	16	6199	5699
South Bend	10	8	181	340	741	1264	1598	1312	813	475	278	59	7079	6442
IOWA														
Burlington	2	0	118	307	714	1235	1607	1212	672	319	157	3	6346	6114
Des Moines	0	0	110	289	728	1266	1751	1285	787	400	195	3	6814	6542
Dubuque	23	2	214	394	834	1354	1796	1364	862	458	256	33	7590	7376
Sioux City	5	0	160	336	718	1226	1727	1178	745	389	141	2	6628	7010
Waterloo	16	7	207	389	809	1343	1802	1389	859	437	206	15	7479	7224
KANSAS														
Concordia	0	0	109	233	661	1020	1487	871	611	282	99	0	5373	5365
Dodge City	0	0	72	212	615	881	1321	722	539	219	77	5	4663	4986
Goodland	0	2	120	311	721	958	1458	772	727	378	138	14	5599	6141
Topeka	0	0	92	225	620	1018	1452	903	544	244	91	0	5189	5182
Wichita	0	0	40	172	581	927	1323	780	463	170	72	0	4528	4620
KENTUCKY														
Lexington	0	0	94	243	621	1054	1183	1014	495	268	126	2	5100	4685
Louisville	0	0	95	224	617	1071	1200	968	476	231	109	1	4992	4724
LOUISIANA														
Alexandria	0	0	0	63	344	535	709	539	193	43	11	0	2437	
Baton Rouge	0	0	0	34	213	398	555	449	98	6	0	0	1753	1620
Lake Charles	0	0	0	29	202	393	586	433	117	15	0	0	1775	1491
New Orleans	0	0	0	8	139	327	366	410	73	2	0	0	1325	
(Audubon Park)														
New Orleans	0	0	0	24	211	427	540	469	91	6	0	0	1768	1475
Shreveport	0	0	0	47	294	502	785	512	162	30	11	0	2343	2211
MAINE														
Caribou	151	115	400	695	1062	1497	1597	1650	1390	884	461	134	10036	9767
Greenville (U)	180	116	377	683	1029	1466	1578	1601	1291	860	498	57	9736	
Portland	68	52	272	529	859	1266	1277	1327	1019	673	379	108	7829	7511
MARYLAND														
Baltimore (U)	0	0	51	163	561	952	1023	963	521	247	98	1	4580	4111
Baltimore	0	0	102	242	700	1048	1114	1037	583	341	153	1	5321	4654
Frederick	2	2	135	290	708	1124	1219	1085	647	379	175	22	5788	5087
MASSACHUSETTS														
Blue Hill Obs. (R)	29	30	169	420	773	1179	1202	1184	892	554	256	80	6768	6368
Boston	6	13	105	330	691	1078	1094	1087	798	477	196	38	5913	5634
Nantucket	28	32	117	346	641	970	1020	1016	837	611	375	95	6088	6001
Pittsfield	64	69	299	541	895	1346	1366	1329	988	675	372	115	8059	7578
Worcester	35	48	217	483	825	1258	1310	1257	953	599	290	85	7360	6969
MICHIGAN														
Alpena	72	82	326	543	918	1338	1697	1572	1216	690	503	126	9083	8104
Detroit (City AP)	1	0	162	327	731	1226	1475	1287	838	470	245	26	6788	6275
Detroit (M. Wayne Co.)	8	10	177	358	776	1259	1520	1320	866	524	295	49	7162	6469
Detroit (Willow Run)	1	3	167	335	775	1280	1522	1312	863	514	301	55	7128	6246
Escanaba (U)	52	63	287	506	858	1364	1759	1521	1194	736	505	133	8978	8481
Flint	22	29	233	414	835	1298	1602	1395	941	550	341	74	7734	7007
Grand Rapids	10	7	184	372	763	1253	1513	1342	911	514	307	62	7238	6894
Lansing	15	14	209	406	804	1289	1604	1375	924	538	325	68	7571	6909
Marquette (U)	96	96	318	504	852	1338	1728	1487	1150	708	453	198	8928	8393
Muskegon	7	13	205	379	748	1194	1482	1341	940	515	286	81	7191	7018
S. Ste. Marie	89	90	335	546	920	1430	1803	1648	1296	758	548	166	9629	9255
MINNESOTA														
Duluth	132	121	388	611	930	1560	1989	1620	1159	711	471	160	9852	9927
International Falls	76	87	388	620	998	1692	2166	1759	1200	731	473	124	10314	10606
Minneapolis	27	15	262	461	891	1422	1927	1478	946	526	319	46	8320	8392
Rochester	31	19	261	442	856	1412	1894	1446	1003	557	319	48	8288	8179
St. Cloud	29	22	271	474	891	1458	1955	1512	977	563	343	52	8547	8879
MISSISSIPPI														
Jackson	0	0	0	73	340	567	752	597	179	45	8	0	2561	2239
Meridian	0	0	2	91	389	640	764	624	200	50	13	0	2773	2289
Vicksburg (U)	0	0	0	64	309	532	722	576	146	43	12	0	2404	2041
MISSOURI														
Columbia	0	0	83	219	601	1043	1392	994	519	224	101	0	5176	5046
Kansas City	0	0	62	184	550	995	1394	908	490	204	70	0	4857	4868
St. Joseph	0	0	100	253	644	1100	1495	980	593	265	96	0	5526	5484
St. Louis (RFC)	0	0	39	176	540	982	1286	969	453	194	78	0	4717	4484
St. Louis	0	0	62	194	595	1041	1347	1016	507	247	103	3	5115	4809
Springfield	0	0	74	228	609	952	1226	853	420	167	56	0	4585	4561
MONTANA														
Billings	4	46	187	342	701	990	1586	783	750	612	343	124	6468	7083
Butte	163	207	414	648	1131	1300	1783	849	915	785	458	295	8948	
Glasgow	23	43	243	486	780	1247	1917	1162	830	643	378	84	7836	8996
Great Falls	55	57	250	445	734	997	1615	786	788	655	381	144	6907	7531
Havre	41	49	281	495	779	1185	1808	1010	819	632	345	116	7560	8685
Helena	58	77	295	515	837	1106	1687	842	842	665	358	172	7454	8129
Kalispell	119	120	326	674	858	1042	1690	928	855	649	449	200	7910	8630
Miles City	10	39	205	427	769	1156	1784	1012	758	620	269	38	7087	7731
Missoula	83	104	298	674	925	1065	1745	941	808	623	350	204	7820	8125
NEBRASKA														
Grand Island	10	0	168	372	795	1202	1689	1027	764	400	183	3	6613	6180
Lincoln (U)	0	0	109	278	675	1101	1541	970	642	310	115	0	5741	5864
Norfolk	5	3	187	367	746	1222	1686	1069	734	412	171	1	6603	6979
North Platte	3	4	171	363	755	1152	1607	911	745	423	165	10	6309	6684
Omaha	0	0	117	284	685	1134	1590	1058	681	314	120	0	5983	6218
Omaha N. Omaha AP	0	0	149	317	718	1194	1643	1103	726	364	158	4	6376	6743
Scottsbluff	3	32	133	383	719	1062	1552	819	833	487	164	13	6200	6763
Valentine	9	15	169	421	759	1163	1701	984	774	519	224	10	6748	7425
NEVADA														
Elko	23	63	169	458	881	1124	1359	724	920	787	309	297	7114	7440
Ely	29	49	177	500	802	1091	1299	786	1007	861	322	335	7258	7733
Las Vegas	0	0	0	28	229	588	733	254	337	208	7	0	2384	2640
Reno	7	110	127	422	718	957	1134	572	750	691	237	182	5907	6160
Tonopah	3	0	63	311	681	920	1091	607	840	661	186	168	5531	
Winnemucca	6	48	141	436	764	1022	1305	616	852	725	217	197	6329	6761
NEW HAMPSHIRE														
Concord	31	30	234	519	860	1312	1363	1287	966	639	291	70	7602	7383
Mt. Washington Obs. (R)	648	495	839	1097	1322	1808	1844	1863	1603	1345	966	537	14367	13820

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°F) 1962 - 1963

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
NEW JERSEY														
Atlantic City	0	2	83	250	630	1007	1040	986	596	375	178	13	5160	4812
Atlantic City (U)	0	0	61	234	608	951	999	954	622	377	193	8	5007	
Newark	0	7	81	250	640	1046	1091	1041	691	368	164	4	5383	5067
Trenton (U)	0	9	102	257	657	1063	1108	1051	664	367	174	12	5464	4980
NEW MEXICO														
Albuquerque	0	0	22	208	534	863	1098	680	605	219	7	2	4238	4303
Clayton	0	0	67	226	601	843	1218	757	636	285	108	22	4763	5161
Raton	6	5	108	351	730	994	1329	852	787	428	184	53	5827	6228
Roswell	0	0	5	210	564	764	1020	610	450	131	22	0	3779	4072
Silver City	0	0	9	138	429	713	881	588	533	288	14	1	3594	
NEW YORK														
Albany	6	23	207	451	894	1297	1381	1331	968	571	261	62	7452	6875
Binghamton	21	39	261	478	900	1339	1414	1348	911	583	356	68	7718	7358
Buffalo	9	26	213	415	832	1231	1420	1288	907	618	370	57	7386	7213
New York (U)	1	10	78	243	646	1032	1074	1021	653	337	161	9	5265	4862
New York (LaGuardia)	0	7	80	237	633	1039	1100	1028	720	378	169	8	5399	4811
Rochester	10	21	209	409	836	1202	1412	1309	902	556	332	51	7249	6748
Schenectady	3	21	200	439	854	1232	1328	1294	941	555	244	57	7168	
Syracuse	6	16	185	422	875	1250	1364	1300	948	575	319	70	7330	6756
NORTH CAROLINA														
Asheville (U)	0	0	91	224	565	941	943	857	426	241	98	6	4392	4042
Cape Hatteras (R)	0	0	4	99	335	623	678	658	314	216	112	0	3039	2612
Charlotte	0	0	36	156	504	829	851	766	333	136	50	0	3661	3125
Greensboro	0	0	75	180	537	893	918	865	420	198	80	1	4167	3805
Raleigh	0	0	61	166	510	832	870	803	354	193	86	4	3879	3393
Wilmington	0	0	22	113	362	652	675	634	243	135	56	0	2892	2347
Winston-Salem	0	0	69	168	529	877	894	844	379	164	64	0	3988	3595
NORTH DAKOTA														
Bismarck	22	28	228	474	877	1382	1925	1351	890	628	308	26	8139	9005
Devils Lake (U)	33	33	322	533	986	1567	2007	1565	1100	716	418	66	9346	9901
Fargo	11	5	232	439	892	1492	1957	1535	1112	640	339	45	8699	9271
Grand Forks FAA	23	29	319	527	1009	1553	2006	1592	1075	635	371	59	9198	
Pembina	19	34	306	531	1051	1624	2078	1627	1136	662	380	43	9491	
Williston	45	44	249	494	858	1346	*1936	1292	905	671	368	48	8256	8996
OHIO														
Akron	11	10	165	356	722	1249	1412	1282	786	490	275	45	6803	6339
Cincinnati (U)	0	0	78	204	538	1015	1167	996	507	243	95	2	4845	
Cincinnati	2	2	129	311	660	1126	1321	1132	619	359	202	25	5888	5036
Cincinnati Obs.	0	2	102	239	612	1098	1239	1053	546	288	131	7	5317	4806
Cleveland	10	17	151	331	674	1206	1452	1327	793	500	328	52	6841	6432
Columbus	8	3	165	342	721	1238	1334	1186	683	424	208	18	6430	5444
Columbus (U)	2	0	123	271	627	1149	1270	1144	641	369	154	13	5763	
Dayton	5	4	152	300	707	1196	1380	1186	688	395	203	20	6236	5606
Mansfield	9	11	189	374	746	1290	1458	1292	796	510	302	45	7022	6403
Sandusky (U)	0	4	117	308	681	1216	1438	1233	795	439	227	21	6479	5796
Toledo	1	2	169	348	795	1305	1549	1310	859	520	317	55	7230	6494
Youngstown	18	23	222	397	773	1277	1442	1326	817	515	330	63	7203	6212
OKLAHOMA														
Oklahoma City	0	0	19	129	458	750	1131	692	372	101	50	0	3702	3844
Tulsa	0	0	21	117	450	771	1119	736	343	90	46	0	3693	3688
OREGON														
Astoria	203	133	190	353	478	628	864	422	612	502	367	267	5019	5259
Burns (U)	69	87	141	518	807	993	1224	683	856	744	319	258	6699	6957
Eugene	71	45	80	379	507	691	943	437	589	515	288	169	4714	4726
Meacham	184	208	248	570	861	1007	1344	719	942	817	462	352	7714	7874
Medford	13	11	57	417	622	827	1051	524	645	560	255	122	5104	4713
Pendleton	15	16	67	375	585	789	1170	613	598	504	205	64	4998	5254
Portland (U)	47	20	51	260	441	600	884	386	520	486	204	127	4026	4109
Portland	49	24	71	299	515	687	925	477	606	427	272	168	4520	4635
Roseburg	24	15	60	355	457	666	936	403	572	473	232	141	4334	4491
Salem	91	49	86	377	542	713	964	475	630	531	302	185	4945	4656
Sexton Summit (R)	125	163	163	424	701	680	834	566	875	859	461	381	6232	6317
PENNSYLVANIA														
Allentown	1	7	174	352	753	1189	1266	1198	783	430	206	16	6375	5810
Erie	7	27	173	338	731	1174	1394	1306	839	543	350	64	6946	6451
Harrisburg	0	3	126	297	712	1132	1198	1107	666	325	146	4	5716	5205
Philadelphia (U)	0	7	70	206	628	998	1021	962	566	281	118	0	4857	
Philadelphia	0	4	109	272	681	1048	1159	1072	680	375	175	12	5587	5144
Pittsburgh (U)	0	0	142	274	630	1123	1185	1110	611	385	162	17	5639	5053
Pittsburgh	11	12	216	365	707	1263	1354	1273	747	479	271	45	6743	5987
Reading (U)	0	4	114	271	659	1092	1147	1078	647	336	147	4	5499	4945
Scranton	3	10	199	414	848	1260	1289	1272	820	475	236	45	6871	6453
Williamsport	1	7	200	389	777	1242	1288	1235	803	442	237	30	6651	5934
RHODE ISLAND														
Block Island	11	11	106	344	645	1047	1073	1071	860	585	384	92	6229	5714
Providence	12	14	152	389	717	1125	1115	1076	805	493	252	46	6196	5954
SOUTH CAROLINA														
Charleston (U)	0	0	1	63	276	536	538	527	160	45	14	0	2160	1794
Charleston	0	0	8	95	339	597	604	545	172	69	29	0	2458	2026
Columbia	0	0	14	112	378	653	726	641	208	86	41	0	2859	2484
Florence	0	0	21	110	376	674	714	648	207	101	51	0	2902	2387
Greenville-Spartanburg	0	0	25	†	401	718	774	720	306	108	53	0		
Spartanburg	0	0	41	†										
SOUTH DAKOTA														
Huron	20	13	225	443	835	1351	1860	1251	781	507	258	12	7556	7983
Pierre	9	4	147	362	733	1224	1718	1121	746	544	290	16	6914	
Rapid City	4	36	165	372	721	1073	1634	968	776	607	253	28	6637	7345
Sioux Falls	18	5	191	391	786	1305	1809	1261	803	467	203	7	7246	7839
TENNESSEE														
Bristol	1	0	71	228	602	983	1062	920	454	239	78	1	4639	4228
Chattanooga	0	0	26	140	486	860	998	839	314	117	40	0	3820	3382
Knoxville	0	0	32	156	548	861	973	835	312	176	64	0	3957	3551
Memphis (U)	0	0	12	104	421	733	898	750	271	106	34	0	3329	3015
Memphis	0	0	14	107	436	772	944	760	291	119	34	0	3477	3116
Nashville	0	0	43	152	508	924	1050	855	358	170	63	0	4123	3578
Oak Ridge	0	0	58	185	562	945	1042	905	387	209	73	0	4366	3769
TEXAS														
Abilene	0	0	2	68	299	562	805	502	207	51	15	0	2511	2624
Amarillo	0	0	23	159	508	741	1114	648	450	139	61	7	3850	4195
Austin	0	0	0	20	172	429	657	374	109	27	4	0	1792	1711
Brownsville	0	0	0	0	28	168	292	185	17	0	0	0	690	600
Corpus Christi	0	0	0	4	85	274	466	271	36	0	0	0	1136	914
Dallas	0	0	0	41	275	523	821	500	170	29	11	0	2370	2363
Del Rio (U)	0	0	0	2	112	388	559	302	71	13	0	0	1447	
El Paso	0	0	0	65	333	608	753	438	279	41	0	0	2517	2578
Ft. Worth	0	0	0	46	280	545	839	517	185	34	13	0	2459	2405

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

* Moved to Airport 1/19/62
† Moved to Greer, 3 mi. S 10/15/62

MONTHLY AND SEASONAL HEATING DEGREE DAYS

(Base 65°F) 1962 - 1963

State and Station	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total for Season	Normals July-June
TEXAS (Cont'd.)														
Galveston (U)	0	0	0	4	99	311	494	366	75	5	0	0	1354	1235
Galveston	0	0	0	4	111	319	524	388	82	7	0	0	1435	1274
Houston (U)	0	0	0	5	108	303	497	294	49	8	0	0	1264	1278
Houston	0	0	0	8	157	313	515	351	88	7	0	0	1439	1278
Laredo	0	0	0	0	43	263	427	228	28	6	0	0	995	797
Lubbock	0	0	18	143	428	692	988	627	378	92	36	0	3402	3578
Midland	0	0	2	74	299	595	773	487	233	45	19	0	2527	2591
Port Arthur	0	0	0	20	193	387	573	384	102	12	0	0	1671	1526
San Angelo	0	0	0	36	239	526	711	451	161	34	7	0	2165	2218
San Antonio	0	0	0	9	164	393	575	349	87	17	3	0	1597	1549
Victoria	0	0	0	7	131	313	538	318	68	3	0	0	1378	1173
Waco	0	0	0	26	218	484	741	452	136	31	5	0	2093	2030
Wichita Falls	0	0	2	68	315	577	914	565	281	56	22	0	2800	2954
UTAH														
Milford	4	12	67	392	707	1159	1305	774	843	619	149	81	6112	6497
Salt Lake City	3	17	59	322	695	1128	1403	731	787	614	135	98	5992	5890
Wendover	0	2	35	289	709	1190	1565	666	734	595	78	106	5769	5778
VERMONT														
Burlington	71	54	296	571	997	1386	1491	1514	1204	731	385	84	8784	7739
VIRGINIA														
Lynchburg	1	0	105	212	588	957	979	931	461	217	107	8	4566	4166
Norfolk	0	0	37	148	449	854	859	815	357	202	108	0	3829	3421
Richmond	0	0	73	175	526	891	897	882	434	218	102	1	4199	3914
Roanoke	0	0	100	221	594	975	989	917	470	228	89	5	4588	4150
WASHINGTON														
Olympia	145	98	194	428	579	731	984	523	705	536	368	247	5538	5236
Seattle (U)	67	41	90	280	469	597	848	406	556	427	224	167	4172	4424
Seattle	61	42	86	308	487	628	874	445	588	536	223	140	4518	4838
Seattle-Tacoma	95	100	158	377	550	698	959	465	651	496	255	171	4975	5251
Spokane	60	65	159	531	804	981	1411	768	748	593	318	145	6583	6762
Stampede Pass (R)	330	362	368	684	972	1097	1333	803	1016	916	629	540	9050	9283
Tatoosh Island (R)	334	269	322	382	503	577	782	469	648	508	404	340	5538	5719
Walla Walla	13	15	64	345	582	787	1158	668	557	454	182	60	4885	
Walla Walla (U)	10	10	59	329	553	750	1115	653	526	425	163	47	4640	4805
Yakima	52	38	120	463	709	894	1227	754	658	531	238	92	5776	5941
WEST VIRGINIA														
Charleston	3	0	114	273	661	1052	1144	1002	476	302	148	26	5201	4438
Huntington	7	0	123	266	643	1062	1170	1028	438	243	102	21	5103	4176
Parkersburg (U)	0	0	120	274	630	1111	1183	1069	549	357	143	14	5450	4754
WISCONSIN														
Green Bay	24	18	221	443	847	1384	1799	1505	1079	520	330	49	8219	8214
La Crosse	18	4	208	379	823	1344	1819	1405	906	475	250	34	7665	7589
Madison	23	11	252	414	884	1376	1850	1420	957	508	299	48	8042	7771
Milwaukee	24	22	227	395	804	1342	1749	1372	915	570	388	82	7890	7635
WYOMING														
Casper	19	57	194	418	748	1066	1590	906	928	672	300	54	6952	7410
Cheyenne	40	57	187	425	751	1031	1492	890	1023	633	277	89	6895	7381
Lander	19	58	179	417	826	1143	1800	856	970	708	286	103	7365	7870
Sheridan	26	81	245	454	765	1073	1639	891	827	656	360	115	7132	7680

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

Note: "Heating Degree Days" has been discontinued in the June issues of this publication. Data which would usually be shown in that table for June are shown in the last three columns of the above Table.

STORM SUMMARY

JUNE 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS	DEATHS	INJURIES	†DAMAGE PROP-ERTY	†DAMAGE CROPS
Alabama										0	0	4	0													0	0	4	3
Alaska N																													
Arizona *																													
Arkansas	1	1	0	0	0	0	0	4	5	0	0	4	0	2	0	0	0												
California						0	0	3	0	0	2	5	0	2	0	3	0												
Colorado						0	0	4	5	0	0	4	3	0	2	4	0									0	F1	F6	F5
Connecticut														0	0	4	0									0	0	4	0
Delaware										0	0	4	0	0	0	2	0												
Florida	5	5	0	0	4	0	0	0	C					8	24	?	0												
Georgia	1	1	0	2	5	0	0	0	5	0	0	5	4	0	0	5	0									0	0	5	4
Hawaii *																													
Idaho								5	6																				
Illinois	2	2	0	0	5	0	0	3	6	0	0	5	0	0	0	5	0												
Indiana	7	3	0	0	4	0	0	3	0	0		6	0	4	2	4	0												
Iowa	2	1	0	2	4	0	0	4	4	1	4	6	5	1	0	4	0									0	0	5	5
Kansas	7	3			4				4		3					4													
Kentucky	1	1	0	0	4	0	0	3	4			5	?	1	3	4	?											?	?
Louisiana	3	2	0	1	3	0	0	0	3	0	0	4	0													0	0	?	0
Maine														0	0	4	0									0	0	D2	0
Maryland						0	0	0	1	0	0	4	2	0	0	4	0									0	0	3	2
Massachusetts						0	0	0	1	0	0	5	3	0	1	5	0									0	0	R4	R3
Michigan	1	1	0	0	4	0	0	4	C	0	20	6	C	2	8	6	C												
Minnesota	3	2	0	0	5	0	0	4	0	0	6	6	4	1	0	5	0												
Mississippi	1	1	0	0	3					0	0	4	0	0	1	1	0									0	0	0	3
Missouri	1	1	0	2	6	0	0	5	6	0	0	6	5	0	0	4	0												
Montana	1	1	0	0	0	0	0	5	6	0	1	0	0																
Nebraska	7	3	0	0	5	0	0	5	6	0	0	5	5	0	0	4	3									0	0	0	4
Nevada *																													
New Hampshire	1	1	0	0	5					0	0	3	0	0	0	4	0									0	0	R3	0
New Jersey *																													
New Mexico	2	2	0	1	3	0	0	2	3	0	0	°5	C	0	2	3	0												
New York	1	1	0	0	3			°4	C			4		5	8	5												5	
North Carolina						0	0	0	5	0	0	4	4	1	3	4	0									0	0	0	5
North Dakota	4	4	0	0	4	0	0	0	4	0	0	5	0	1	0	0	0												
Ohio	2	1	0	0	4							°4	C													0	Few	°6F	C
Oklahoma	4	3	0	0	3	0	0	5	5	0	1	5	5	1	2	5	4									0	0	5	4
Oregon *																													
Pacific Area *																													
Pennsylvania						0	0	0	3	0	0	5	0	3	1	6	0												
Puerto Rico *																													
Rhode Island														0	0	4	0									0	0	4	0
South Carolina						0	0	0	6																	0	0	0	6
South Dakota	6	3	0	0	5	0	0	3	4																				
Tennessee						0	0	0	4	0	0	5	3	1	0	3	0									0	0	4	0
Texas	24	10	0	0	?	0	0	5	5	0	3	4	5	1	0	0	0												
Utah	1	1	0	0	4	0	0	4	4	0	0	5	2	2	9	4	0												
Vermont *																													
U.S. Virgin Is. *																													
Virginia						0	0	?	?					0	0	?	0									0	0	4	?
Washington						0	0	1	4																				
West Virginia *																													
Wisconsin	2	2	0	0	5					6	2	5	0	2	0	0	0												
Wyoming	1	1	0	0	4																					0	0	°6	C

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
F Flood
R Rain
D Dust devil.
N No report received by printing deadline.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JUNE 1963

Near record flash floods occurred during June in east-central Nebraska, causing heavy damages and some loss of life. Record flooding occurred in the upper Big Blue River Basin in Nebraska. Flash floods were reported in Alabama, Kansas, Oklahoma, and Utah. Flooding reported elsewhere in continental United States was mostly light.

HUDSON BAY DRAINAGE

Red River of the North Basin.--A series of rains in the Red River of the North Basin from May 31 to June 10 produced slightly above bankfull stages at Wahpeton, N. Dak., on the 10th to the 12th and nearly 3 feet over bankfull at Fargo, N. Dak., on the 14th. Rainfall in the upper basin during the period approached 8 inches. The rains occurred near and following the spring crest, 7.5 ft. at Wahpeton on the 2nd and 16.95 ft. at Fargo on the 5th. The Red River of the North was out of its banks at Fargo from the 11th to the 17th. Damage was negligible.

ATLANTIC SLOPE DRAINAGE

Minor flooding occurred on the Saluda River at Pelzer, S. C., on the 29th. No damage resulted.

Minor flooding occurred along the lower reaches of the Savannah and Ogeechee Rivers in Georgia during the last few days of June. This flooding was due to general rains beginning on the 16th and continuing into the first few days of July. Excessive or heavy falls were well scattered during the period. No losses are known to have resulted from the high stages.

The flooding on the Ocmulgee and Oconee Rivers in Georgia was due to rainfall during the last half of the month. The rainfall was unusually heavy, averaging 7.7 inches per station. There were wide variations in rainfall, ranging from 13.9 inches at Winder, Ga., to a minimum of 3.7 inches at Dublin, Ga. Virtually all of the rain occurred in the period from the 15th to the 30th.

EAST GULF OF MEXICO DRAINAGE

Moderate to heavy rains during the last half of the month resulted in minor flooding on the Apalachicola River at Blountstown, Fla., on the 26th. Owing to the dryness of the ground before the rains set in, much of the earlier heavy rainfall was absorbed into the ground. Most of the heavy rainfall was limited to smaller areas. Only limited lowlands were overflowed with no damages resulting.

The light flooding on the Cahaba River at Centreville, Ala., on the 24th was due to general rainfall, which began on the 16th and 17th and continued almost daily for the remainder of the month. Some exceptionally heavy rainfall amounts were reported on the upper Cahaba Basin above Centreville, centered mainly in the Alabaster area. Many houses were damaged by flood waters released when an earthen dam broke in the Alabaster area. Many families were driven from their homes. A section of the Atlantic Coast Line railroad track was washed out by the muddy torrent in North Shelby County.

MISSISSIPPI SYSTEM

Missouri Basin.--The annual spring snowmelt runoff over the Yellowstone River Basin began during the latter part of May and continued its rising trend during the first half of June. This snowmelt runoff was accompanied by frequent rains in southern Montana and parts of northern and central Wyoming during the first half of June. The rain was locally heavy in some mountain sections of south-central Montana and Wyoming. Locally extensive flooding occurred in Fremont, Hot Springs, Park, and Big Horn Counties in Wyoming from the Big Horn River and its tributaries over the weekend of the 15th and 16th. Local flooding occurred along the east slope of the Big Horn Mountains in the Sheridan, Wyo., area from overflow of Big and Little Goose Creeks. High water with minor localized flooding occurred along the Yellowstone River and some of its tributaries from Livingston to Miles City, Mont., from the 14th to the 18th. In the Lander, Wyo., area the Popo Agie River flooded an area four blocks wide by nine blocks long. In many buildings and homes, there was water 8 to 10 inches deep. Many families had to be evacuated. Many railroad and highway bridges were washed out. This flood was termed the worst in Lander's history.

A few widely scattered, local heavy rains of 2 to 4 inches occurred in South Dakota during June, mainly in the northeast quarter of the State and in the Black Hills near Rapid City. Since the heavy rain areas were rather small and localized, and the antecedent soil conditions were rather dry, overflow was limited to creeks. The flooding on the Floyd River at James, Iowa, on the 2nd was due to heavy rains during the night of June 1-2. Five to 7 inches of rainfall was reported at Sioux City during that night. This heavy rain spread east to Buena Vista and Sac Counties in Iowa. The lower end of the Floyd River went 1 to 2 feet over its banks in the vicinity of Hinton and James, Iowa, but was well contained within levees in Sioux City. Creeks to the east of Sioux City went out of their banks for a few hours, but damage was light.

Locally heavy rains during the night of June 1 caused some flooding along the middle reaches of the Little Sioux River and the middle reaches of the Maple River in Iowa. The heaviest rains fell over the lower reaches of the Little Sioux River and over the middle and lower portions of the Maple River. Damage was slight and confined to secondary road washouts. Another period of heavy local thundershowers occurred over the middle reaches of the Maple River in northwestern Iowa during the afternoon and evening of the 4th. This heavy rain caused the Maple River between Danbury and Ida Grove, Iowa, to run bankfull by the afternoon of the 4th. Some flooding of low farmland occurred in the Ida Grove area and on the Odebolt Creek.

Locally torrential rains during the night of the 23rd and 24th in east-central Nebraska resulted in near record flash flooding in the Wahoo Creek Basins and areas of the Salt Creek Basin. Rainfall amounts as high as 14 inches with unofficial amounts of near 16 inches was reported. The damage from the heavy rains and flooding was heavy and was estimated at $13 million in nine counties in Nebraska. Many farm buildings were destroyed, with major damage resulting to many homes and farm buildings. Three persons lost their lives from drowning.

Major flooding occurred on the upper Big Blue River in Nebraska, with record crests at Ulysses and Staplehurst, Nebr. The crest of 24.9 ft. at Ulysses exceeded the previous record stage of 23.5 in June 1957. At Staplehurst, the crest of 21.6 ft. on the 24th exceeded the previous record stage of 19.5 ft. in June 1957. The crest of 21.82 ft.

at Seward on the 25th approached within 0.5 foot of the previous record stage of 22.34 ft. in June 1957. Crests downstream varied from around 5 feet below 1960 levels at Crete and Barneston to only a foot below in the Beatrice area. Heavy flooding at DeWitt, Nebr., on the 24th was from tributary overflow moving down Swan and Turkey Creeks. Walnut Creek west of Crete was reported to be at record levels with variable overflows on smaller tributaries in the general area. This flooding was due to torrential rains with 13 1/2 inches reported around Garrison and 11 3/4 inches at David City, Nebr., in the upper Big Blue River Basin. An area of 7 to 8 inches of rainfall was centered near DeWitt, with 5- to 7-inch falls extending along Swan Creek. Three to 5 inches of rainfall occurred in a narrow band along and adjacent to the Big Blue River channel. Damages from the flooding is estimated at around one-half million dollars.

Minor flooding occurred on creeks in the Kansas City, Mo., area from heavy local rains of over 3 inches on the 20th. Flooding occurred at Firth, Nebr., in the Nemaha Basin from heavy rainfall during the night of the 23rd-24th. Many houses in the area were damaged. Sharp rises to near flood stage occurred on the Missouri River at Nebraska City and Rulo, Nebr., and St. Joseph, Mo.

Ohio Basin.--Moderate to heavy showers on the 4th and 5th, averaging from 1 to 3.5 inches over the headwaters of the Monongahela River Basin, resulted in light flooding on the West Fork River in West Virginia on the 4th and 5th. Near half-bankfull stages occurred along the main Monongahela River.

The flooding on the Little Kanawha River in West Virginia from the 4th to the 6th was due to rainfall averaging near 4 inches in the upper half of the basin during the 48-hour period ending at 7 a.m. on the 5th. Excessive heavy rain occurred in and around Cambridge, Ohio, with 7.18 inches reported during the 24-hour period ending at 7 a.m. on the 5th. Flooding occurred along the Little Kanawha from the headwaters downstream to Creston, W. Va. At Glenville, W. Va., the crest of 28.4 ft. was 0.1 foot less than the flood of March 1963. Considerable damage resulted to crops in Gilmer County. In Glenville, W. Va., 2 feet of water was reported in one section of Main street.

Locally heavy showers on the 20th in the area of Paintsville, Ky., and Paint Creek resulted in some flooding at Oil Springs, Ky., with bankfull stages at most places downstream on Paint Creek. At Denver, Ky., on Jenny Creek, a few houses were flooded. There was some overflow along the entire creek with light damage to crops.

White Basin.--The Black River which exceeded flood stage at Black Rock, Ark., on May 26 continued in flood until June 4. The Cache River which went out of its banks at Patterson, Ark., on May 29 continued in flood until June 12 with a crest of 1.6 feet above flood stage on June 21. Moderate rain over the Black on the 15th with light rain continuing until the 17th resulted in another rise with minor flooding from the 21st to the 24th. One- to 2-inch rains fell over the Cache River Basin on the 16th and 17th resulting in minor flooding at Patterson, Ark., from the 22nd to the 26th. Flood damage was minor except for delay of crop replantings along the rivers.

Arkansas Basin.--Flash flooding occurred on Crooked Creek in southwestern Kansas for a few hours on the night of the 6th and early morning of the 7th. U. S. Geological Survey reported that Crooked Creek near Nye, Kans., crested at 8.98 ft. at 4 a.m. on the 7th. This was about 1 foot higher than the previous known crest.

Flash flooding occurred on the 23rd in north-central Oklahoma along Eagle Chief Creek, Salt Fork and its tributaries near Alva and Cherokee, Okla., Turkey and Skeleton Creeks near Enid and Henessey, Okla., and on the Cimarron River at Waynoka, Okla. Highways and roads were inundated for a few hours, but no serious flooding developed except to agricultural interests. The flash flooding was due to heavy rain on the 23rd with unofficial reports of 4 to 8 inches along Eagle Chief Creek. The heaviest damage occurred to crops, fields, roads, and bridges in the rural areas along Salt Fork and its tributaries.

WEST GULF OF MEXICO DRAINAGE

Moderate flooding occurred on the middle Nueces and on the lower Frio Rivers in Texas from heavy rains on the 17th. The heaviest rainfall amount reported was 12 inches on the Baylor Ranch 10 miles southeast of Cotulla. The heavy rain area extended over into the Frio Basin with 7.65 inches reported from Los Angeles, Texas. Some brief flooding of roads was reported on the lower Atascosa. Lake Corpus Christi, which was at the lowest level since its construction in 1958, should be filled to capacity when the runoff is all in the lake. These rains were the heaviest since 1960 and broke the extreme drought which has continued since September 1961 in the lower Nueces and the Gulf drainage area. Only minor flood damage was reported since the heaviest rains were concentrated over ranch country.

GULF OF CALIFORNIA DRAINAGE

On June 16, the failure of an earth-filled dam on Little Deer Creek, a tributary to the North Fork of the Duchesne River, in northeast Utah caused a flash flood that took one life and did heavy property damage. Numerous small bridges, buildings, fences, and some livestock were washed away. There was also extensive damage to camp grounds and roads along the stream, and slight damage by flooding in the town of Tabiona.

GREAT BASIN

A storm of moderate intensity occurred over the upper Humbolt Basin during the first week of June. Precipitation reached 24-hour maximum on the 3rd and 4th and decreased rapidly after the 5th. Flooding on the Humbolt River was confined to bottom lands between Halleck and Elko, Nevada. The flood crested on the 6th and the stream was out of its banks a short time.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--Above normal rainfall and rapid snowmelt during the month brought seasonal peak streamflow to above normal on the Snake River at Twin Falls and Weiser, Idaho. Cloudburst-type floods occurred in extreme southwestern Idaho. Minor flooding occurred on the Henrys Fork at Rexburg, Idaho, from the 12th to the 19th. No damage was reported.

The crest stage of 15.5 ft. on the Columbia River at Vancouver, Wash., (flood stage 16 feet) on the 19th and 20th was the lowest snowmelt crest since 1944 when a stage of 11.9 ft. was observed. It was well below the 56-year average of 20.8 feet. Backwater in the Willamette River produced a crest stage of 14.6 feet at Portland, Oreg., (flood stage 18 ft).

FLOOD STAGE DATA

(All dates in June unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
HUDSON BAY DRAINAGE	*Ft.*			*Ft.*	
Red River of the North Basin					
Red River of the North: Wahpeton, N. Dak.	10	10	12	11.4	11
Fargo, N. Dak.	17	5	5	17.0	5
		11	17	19.8	14
ATLANTIC SLOPE DRAINAGE					
Saluda: Pelzer, S. C.	6	29	29	6.3	29
Savannah: Clyo, Ga.	11	28	30	13.4	July 9
Ogeechee: Dover, Ga.	7	27	30	7.5	28
Eden, Ga.	9	27	30	10.0	29-30
Ocmulgee: Abbeville, Ga.	12	30	July 1	12.2	30,July 1
Oconee: Milledgeville, Ga.	20	27	27	24.3	27
		29	30	27.0	30
EAST GULF OF MEXICO DRAINAGE					
Apalachicola: Blountstown, Fla.	15	26	26	15.2	26
Cahaba: Centreville, Ala.	23	24	24	25.1	24
MISSISSIPPI SYSTEM					
Missouri Basin					
Floyd: James, Iowa	16	2	2	18.3	2
Little Sioux: Correctionville, Iowa	19	1	2	21.5	2
Maple: Mapleton, Iowa	12	4	5	15.5	4
Salt Creek: Lincoln, Nebr.	20	24	25	23.6	25
Roca, Nebr.	19	24	25	22.0	24
Ashland, Nebr.	11	24	26	14.8	25
Wahoo Creek: Ithaca, Nebr.	19			23.0	24
Platte: Louisville, Nebr.	9	24	25	11.4	25
Beaver Creek: Beaver City, Nebr.	11	19	19	11.8	19
Little Blue: Hanover, Kans.	14	24	24	14.0	24

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	*Ft.*			*Ft.*	
Missouri Basin (Cont'd.)					
Turkey Creek: Wilber, Nebr.	11	25	26	14.1	25
Big Blue: Ulysses, Nebr.	15	24	25	24.9	24
Staplehurst, Nebr.				21.6	24
Seward, Nebr.	18	25	26	21.8	25
Crete, Nebr.	16	24	25	21.1	24
		26	28	23.15	26
Beatrice, Nebr.	16	25	26	24.6	25
Barneston, Nebr.	18	25	26	22.4	26
Ohio Basin					
West Fork: Weston, W. Va.	17	4	4	17.5	4
Clarksburg, W. Va.	7	5	5	7.4	5
Little Kanawha: Glenville, W.Va.	23	4	5	28.4	5
Creston, W. Va.	20	5	6	20.25	6
White Basin					
Black: Black Rock, Ark.	14	May 26	4	19.3	May 28
		21	24	14.8	21
Cache: Patterson, Ark.	7	May 29	12	8.6	3
		22	26	7.4	23
Arkansas Basin					
Cimarron: Waynoka, Okla.	8	23	23	9.1	23
WEST GULF OF MEXICO DRAINAGE					
Frio: Tilden, Tex.	12	18	20	18.7	19
Calliham, Tex.	12	19	21	17.0	20
Nueces: Tilden, Tex.	14	18	24	21.4	20
Three Rivers, Tex.	35	22	22	35.0	22

* Provisional

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	ALBANY, N. Y. 1004 MB						ALBUQUERQUE, N. MEX. 837 MB						AMARILLO, TEXAS 890 MB						ANCHORAGE, ALASKA 1007 MB						ANNETTE, ALASKA * 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	86	15.4	83	209	.8	30	1,619	16.2	34	128	3.9	30	1,095	17.3	81	187	7.8	30	29	9.0	75	166	4.9	28	37	9.1	88	144	3.3
1000	30	124			214	1.9	30	69					30	89					30	88			171	6.8	28	130	8.9	84	154	3.9
950	30	561	15.2	68	291	5.8	30	516					30	534					30	509	6.9	66	181	11.1	28	551	6.2	83	175	5.6
900	30	1,017	13.6	65	298	8.5	30	991					30	1,007					30	953	3.9	70	177	10.1	28	995	3.4	85	190	7.8
850	30	1,497	11.1	64	292	10.3	30	1,485					30	1,495	18.8	63	214	20.4	30	1,415	.6	77	176	9.5	28	1,458	.8	84	205	8.4
800	30	2,001	8.7	58	291	11.3	30	2,008	17.7	28	232	4.1	30	2,015	16.8	51	220	17.3	30	1,899	- 2.6	80	179	8.2	28	1,944	- 1.4	79	215	10.3
750	30	2,531	5.9	55	285	12.8	30	2,544	14.4	28	253	6.8	30	2,558	13.9	43	230	14.0	30	2,406	- 5.6	80	179	6.6	28	2,456	- 3.9	73	234	10.7
700	30	3,096	2.9	54	284	14.6	30	3,130	10.2	31	258	9.3	30	3,141	10.0	40	231	9.3	30	2,947	- 8.8	78	186	6.8	28	2,999	- 6.7	66	246	13.0
650	30	3,689	- .4	48	280	15.2	30	3,736	5.4	36	241	13.2	30	3,747	5.4	42	236	7.2	30	3,514	-11.9	76	187	6.8	28	3,571	- 9.7	65	250	14.2
600	30	4,329	- 4.1	42	279	17.1	30	4,390	.3	38	230	17.1	30	4,401	.4	46	261	8.0	30	4,127	-15.7	70	207	6.6	28	4,190	-13.4	59	253	16.5
550	30	5,005	- 7.8		275	17.9	30	5,070	- 5.1	39	231	19.8	30	5,085	- 4.8	47	265	8.0	30	4,773	-19.6	62	229	6.4	28	4,844	-17.5	50	250	18.8
500	30	5,747	-12.5		280	20.6	30	5,823	-10.4	38	236	22.7	30	5,837	- 9.8	41	264	10.9	30	5,479	-24.3	54	241	5.2	28	5,556	-22.1	45	245	22.2
450	30	6,537	-18.1		283	22.5	30	6,620	-15.7		240	22.7	30	6,640	-15.0	33	257	14.2	30	6,231	-29.7	53	258	5.8	28	6,320	-27.2	48	257	24.9
400	30	7,413	-24.5		284	23.1	30	7,506	-22.0		238	25.8	30	7,525	-21.1		264	16.7	30	7,068	-35.9	51	264	8.2	28	7,163	-32.9	45	259	27.8
350	30	8,372	-31.3		281	28.2	30	8,474	-29.3		241	29.3	30	8,496	-28.2		262	19.6	30	7,982	-42.7		271	11.9	28	8,090	-39.2	42	261	36.7
300	30	9,447	-39.3		277	33.4	30	9,556	-37.4		239	35.4	30	9,584	-36.5		257	27.4	30	9,009	-48.5		254	14.6	28	9,132	-45.3		268	37.5
250	30	10,673	-48.0		282	36.5	30	10,793	-45.2		242	43.3	30	10,824	-45.1		253	33.0	30	10,206	-48.3		256	18.5	28	10,336	-49.5		278	33.2
200	30	12,120	-54.5		282	33.4	30	12,254	-53.6		245	50.9	30	12,283	-54.0		257	39.4	30	11,687	-45.3		249	15.2	28	11,797	-48.7		276	27.2
175	30	12,970	-57.1		285	28.6	30	13,106	-56.9		246	49.7	30	13,132	-58.0		259	41.0	30	12,580	-44.8		243	12.8	28	12,676	-48.4		269	23.5
150	30	13,944	-57.5		285	24.5	30	14,073	-60.7		247	41.2	30	14,094	-61.9		258	35.8	30	13,610	-45.3		238	9.9	28	13,690	-48.4		270	21.2
125	30	15,094	-57.7		291	20.2	30	15,196	-64.7		244	28.6	30	15,210	-65.5		258	29.9	30	14,826	-45.9		237	8.5	28	14,886	-49.8		265	15.2
100	30	16,499	-58.3		299	15.0	30	16,552	-66.1		235	14.8	29	16,560	-66.5		239	17.5	30	16,309	-46.2		216	6.2	28	16,344	-50.1		252	11.1
80	30	17,906	-57.1		326	8.4	30	17,916	-62.5		157	5.1	29	17,921	-63.6		147	5.6	30	17,791	-46.5		199	3.7	28	17,801	-50.2		245	6.4
70	30	18,754	-55.9		355	5.8	30	18,748	-60.7		114	8.4	29	18,748	-61.4		93	8.2	30	18,677	-46.6		185	3.5	28	18,670	-50.3		223	3.5
60	30	19,738	-54.0		47	4.3	30	19,708	-58.6		96	10.9	28	19,712	-58.5		97	11.7	30	19,700	-46.7		128	3.5	27	19,680	-50.3		160	2.1
50	30	20,912	-52.6		77	7.6	30	20,861	-55.8		87	14.0	28	20,866	-55.8		93	13.2	30	20,930	-46.6		117	5.6	27	20,878	-50.2		100	3.2
40	29	22,357	-51.2		83	10.7	30	22,291	-53.1		91	14.8	28	22,296	-52.9		89	14.6	30	22,392	-46.2		106	9.3	27	22,328	-49.5		90	7.6
30	28	24,237	-48.6		84	10.7	28	24,158	-50.0		88	15.0	28	24,167	-49.3		90	14.0	29	24,309	-44.8		98	9.3	27	24,218	-48.2		89	11.7
25	25	25,440	-46.8		75	10.1	27	25,356	-47.5		89	16.3	28	25,368	-47.6		85	14.8	28	25,529	-43.7		96	13.4	27	25,422	-47.2		90	13.8
20	21	26,917	-44.9		79	11.9	26	26,844	-44.9		89	16.3	26	26,851	-45.3		86	15.0	28	27,035	-41.8		98	16.1	27	26,904	-45.3		88	15.7
15	6	28,790	-42.5				14	28,771	-41.8		86	13.6	15	28,807	-41.9		87	18.5	28	28,996	-39.0		94	18.5	26	28,842	-42.0		88	17.7
10																			20	31,803	-34.8		89	21.6	24	31,620	-36.0		84	22.5
7																			6	34,397	-28.9				19	34,150	-30.7		89	27.8
5																									8	36,559	-25.4			

Standard pressure surface (mb.)	ATHENS, GA. 988 MB						BARROW, ALASKA * 1/ 1009 MB						BARTER IS., ALASKA 1008 MB						BETHEL, ALASKA 1003 MB						BISMARCK, N. DAK. 952 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	246	19.4	92	7	2.7	27	8	- .6	95	54	7.0	30	15	.3	93	87	2.5	30	39	6.0	91	244	5.4	30	505	14.9	84	182	2.3
1000	30	144					27	78	- .9	95	62	7.0	30	79	- .5	95	83	3.3	30	62			205	2.9	30	84					
950	30	581	20.6	76	341	2.9	27	493	1.5	81	99	7.4	30	492	2.5	89	114	3.5	30	480	5.4	79	208	4.7	30	524			224	1.7
900	30	1,055	18.3	73	288	4.3	27	926	2.0	59	112	5.5	30	928	2.9	79	137	2.5	30	923	2.9	80	199	6.4	30	983	16.2	66	210	4.3
850	30	1,543	15.3	70	269	7.2	27	1,387	.1	55	128	4.1	30	1,390	.4	72	140	2.5	30	1,384	.1	81	199	6.4	30	1,468	14.5	53	222	7.8
800	30	2,056	12.5	69	269	8.0	27	1,870	- 2.6	53	148	3.1	30	1,877	- 1.1	68	156	2.1	30	1,868	- 2.6	80	192	6.4	30	1,979	11.9	60	228	8.4
750	30	2,594	9.6	64	261	8.7	27	2,379	- 5.8	52	172	3.7	30	2,386	- 4.5	68	192	2.1	30	2,374	- 5.4	78	211	6.0	30	2,513	8.5	59	241	11.5
700	30	3,165	6.2	63	263	10.1	27	2,918	- 9.2	46	176	5.8	30	2,929	- 8.1	68	196	3.3	30	2,916	- 8.5	73	217	5.8	30	3,084	5.1	56	248	13.4
650	30	3,767	2.5	62	270	10.3	27	3,487	-12.9	42	178	6.6	30	3,497	-11.6	61	195	4.5	30	3,484	-11.8	68	219	5.1	30	3,679	1.4	52	251	14.6
600	30	4,413	- 1.3	62	269	12.2	27	4,094	-16.9	39	186	7.4	30	4,110	-15.6	56	184	5.6	30	4,097	-15.4	64	218	3.7	30	4,326	- 2.4	47	249	16.7
550	30	5,098	- 5.0	53	262	14.4	27	4,740	-21.4	41	189	9.1	30	4,754	-20.1	51	179	5.4	30	4,744	-19.6	55	233	5.6	30	5,002	- 6.8	43	247	19.4
500	30	5,847	- 9.3	51	263	15.0	27	5,439	-26.1	39	193	9.9	30	5,460	-25.2	49	183	7.0	30	5,450	-24.5	49	242	5.8	30	5,748	-12.1	40	245	23.1
450	30	6,651	-14.3	48	268	15.5	26	6,191	-31.6	36	192	9.5	30	6,208	-30.7	47	188	7.8	30	6,202	-29.9	46	242	6.6	30	6,535	-17.6	40	244	24.9
400	30	7,540	-20.3	42	267	16.3	26	7,020	-37.2	33	191	9.9	30	7,044	-36.9	46	189	9.1	30	7,039	-35.8	46	250	9.9	30	7,418	-23.7	34	243	29.9
350	30	8,515	-27.4	39	269	20.4	26	7,931	-46.1		200	11.7	30	7,955	-43.4		196	9.1	30	7,955	-42.1		252	13.4	30	8,380	-30.8		245	34.2
300	30	9,605	-35.9		265	21.4	26	8,956	-48.9		192	12.4	30	8,977	-49.6		190	9.3	30	8,984	-47.8		249	17.5	30	9,454	-39.2		246	36.7
250	30	10,846	-45.7		267	23.7	26	10,148	-49.0		183	8.5	30	10,165	-49.4		188	8.7	30	10,183	-48.1		251	23.3	30	10,677	-48.8		246	39.8
200	30	12,297	-56.3		275	23.9	26	11,634	-43.7		179	6.2	30	11,646	-44.4		195	6.0	30	11,662	-45.5		245	16.9	30	12,116	-55.4		246	38.7
175	30	13,137	-60.6		283	24.9	26	12,532	-43.2		179	7.0	30	12,541	-44.1		203	6.8	30	12,554	-44.9		243	12.4	30	12,967	-55.2		245	37.3
150	30	14,089	-63.2		288	22.2	26	13,570	-43.3		180	6.8	30	13,575	-44.3		208	6.4	30	13,584	-45.2		233	10.9	29	13,950	-54.9		253	32.1
125	30	15,207	-64.6		296	15.2	26	14,796	-43.8		173	5.2	30	14,797	-44.6		205	5.4	30	14,799	-45.8		233	12.4	29	15,110	-56.7		261	19.8
100	30	16,567	-64.8		332	6.8	26	16,293	-44.1		169	4.7	30	16,288	-44.7		189	5.6	30	16,284	-46.3		215	6.8	29	16,522	-56.9		253	12.6
80	30	17,933	-63.1		50	6.8	26	17,791	-43.9		138	4.5	30	17,782	-44.5		158	4.1	29	17,766	-46.6		193	4.3	29	17,936	-56.4		240	4.5
70	30	18,760	-61.7		74	10.1	26	18,688	-43.8		138	4.9	30	18,681	-44.4		143	3.7	29	18,652	-46.8		176	3.7	29	18,785	-56.1		192	1.4
60	30	19,720	-58.6		79	12.8	26	19,723	-43.7		120	5.4	30	19,709	-44.3		136	5.1	29	19,673	-47.0		138	3.3	29	19,768	-54.6		89	3.3
50	30	20,873	-56.1		81	14.4	25	20,945	-43.6		108	7.2	30	20,933	-44.0		116	6.6	29	20,880	-47.1		116	4.3	29	20,939	-53.0		85	6.8
40	30	22,304	-52.7		91	14.4	25	22,446	-43.2		103	8.9	30	22,432	-43.6		102	8.2	28	22,361	-46.5		96	6.6	28	22,384	-50.9		74	9.3
30	29	24,174	-49.6		89	15.7	25	24,386	-42.5		96	11.5	29	24,377	-42.7		104	11.1	28	24,275	-45.6		103	10.5	27	24,261	-48.8		90	12.0
25	28	25,368	-48.0		88	16.1	24	25,618	-41.4		96	14.2	29	25,613	-41.6		99	11.5	26	25,504	-44.3		96	12.0	26	25,465	-47.0		85	13.2
20	22	26,841	-46.2		78	18.3	23	27,149	-39.5		91	14.8	28	27,130	-40.1		98	12.8	24	26,994	-42.9		91	15.0	21	26,944	-44.9		84	14.6
15	8	28,770	-43.6				22	29,136	-36.7		92	17.5	24	29,113	-37.5		98	16.9	16	28,939	-40.6		92	16.5	18	28,874	-41.9		89	12.2
10							20	31,979	-32.3		88	20.0	12	31,907	-33.2				7	31,688	-37.1				7	31,707	-36.6			
7							20	34,532	-26.6		88	20.4																		
5							14	36,980	-21.0																					
4							5	38,755	-16.3																					

Standard pressure surface (mb.)	BOISE, IDAHO 913 MB						BROWNSVILLE, TEXAS 1011 MB						BUFFALO, N. Y. 990 MB						BURRWOOD, LA. 1015 MB						CANTON IS., PACIFIC AREA *2/ 1010 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	868	12.6	70	181	2.3	30	7	24.9	92	146	5.6	30	218	15.1	79	208	3.1	30	3	25.8	85	221	3.5	30	4	27.3	78	83	6.6
1000	30	92					30	103	25.1	87	149	10.5	30	133					30	131	25.3	81	218	4.1	30	93	26.6	77	81	8.0
950	30	530					30	552	22.8	83	163	22.7	30	569	16.9	62	260	7.2	30	584	22.3	79	208	5.4	30	541	23.0	80	85	11.5
900	30	990	13.6	63	190	3.1	30	1,025	20.6	75	170	23.1	30	1,030	14.3	63	280	7.8	30	1,051	19.6	71	197	5.4	30	1,015	19.9	74	94	12.6
850	30	1,471	12.1	58	275	3.1	30	1,518	18.5	62	173	18.5	30	1,511	11.6	60	295	9.5	30	1,541	16.8	64	190	6.2	30	1,508	17.5	60	94	13.8
800	30	1,977	9.0	59	304	4.5	30	2,038	16.4	49	171	12.8	30	2,016	8.8	60	306	10.3	30	2,056	13.6	61	181	5.8	30	2,024	15.3	46	90	13.6
750	30	2,508	5.4	60	294	5.2	30	2,583	13.5	47	153	7.2	30	2,545	5.7	57	301	10.7	30	2,596	10.5	59	182	4.9	30	2,567	12.8	40	89	13.6
700	30	3,069	1.6	63	283	4.7	30	3,162	10.2	45	118	4.5	30	3,110	2.8	52	299	13.2	30	3,168	7.1	56	201	4.9	30	3,146	9.8	38	86	14.4
650	30	3,658	- 2.5	66	267	5.4	30	3,768	5.9	44	90	3.3	30	3,704	- .3	46	295	13.2	30	3,774	3.6	54	232	4.1	30	3,753	6.5	35	95	14.8
600	30	4,294	- 6.6	62	249	5.4	30	4,425	1.8	41	53	3.9	30	4,343	- 4.1	41	295	14.2	30	4,421	.1	49	264	6.0	30	4,411	2.9	35	92	14.4
550	30	4,961	-10.9	55	241	6.4	30	5,114	- 2.7	44	328	1.9	30	5,020	- 7.6		298	15.3	30	5,108	- 3.9	44	283	7.6	30	5,110	- 1.3	33	90	12.6
500	30	5,696	-15.8	49	230	9.5	29	5,872	- 7.3	39	281	2.5	30	5,762	-12.0		295	16.7	30	5,860	- 8.3	41	291	7.6	30	5,864	- 5.4	25	89	12.4
450	30	6,475	-21.5	49	220	12.8	29	6,679	-12.6	34	244	3.3	30	6,553	-17.5		289	19.6	30	6,668	-13.2	36	301	9.1	30	6,687	-10.1	23	91	9.5
400	30	7,340	-28.2	41	224	12.4	29	7,576	-18.4		281	4.1	30	7,433	-24.0		287	21.8	30	7,557	-19.0	36	306	11.3	30	7,583	-16.0	21	91	5.8
350	30	8,285	-35.1	36	220	15.5	29	8,559	-25.4		299	7.8	30	8,394	-30.9		285	27.0	30	8,537	-25.9		311	13.6	30	8,575	-22.9	19	86	3.5
300	30	9,343	-42.5		227	19.0	29	9,661	-33.6		296	13.2	30	9,469	-39.0		285	27.8	30	9,635	-34.1		311	15.7	30	9,687	-31.2	19	39	.8
250	30	10,557	-49.1		237	19.4	29	10,915	-43.2		297	19.0	30	10,696	-47.7		291	29.7	30	10,885	-43.7		312	19.0	30	10,952	-41.4		146	1.4
200	29	12,012	-51.5		232	18.8	29	12,383	-53.9		300	24.5	30	12,144	-54.6		295	24.9	30	12,348	-54.6		313	23.7	30	12,427	-53.8		225	2.1
175	29	12,878	-51.9		236	20.8	29	13,229	-59.6		306	22.5	30	12,994	-56.8		296	22.3	30	13,191	-59.8		314	24.3	30	13,271	-60.9		253	2.7
150	29	13,876	-52.4		235	18.7	29	14,180	-65.5		316	16.7	29	13,969	-56.7		298	20.0	30	14,144	-64.0		321	23.9	30	14,213	-68.2		262	4.7
125	28	15,052	-54.7		230	17.1	29	15,274	-71.1		315	10.9	29	15,122	-57.5		299	16.9	30	15,250	-67.3		332	18.1	30	15,285	-76.1		255	7.2
100	28	16,475	-55.9		223	11.1	29	16,587	-72.3		56	9.3	29	16,527	-58.6		311	12.2	29	16,586	-68.8		10	11.3	27	16,556	-79.2		117	2.1
80	28	17,889	-57.1		208	6.0	29	17,914	-67.2		85	18.3	29	17,933	-57.3		337	6.8	29	17,931	-65.3		63	13.2	27	17,836	-75.7		96	4.3
70	28	18,740	-56.0		163	1.4	29	18,729	-63.8		88	21.8	29	18,783	-56.3		350	5.8	29	18,753	-62.5		77	16.5	24	18,610	-72.3		91	13.8
60	28	19,718	-55.0		88	4.5	29	19,680	-59.8		93	23.5	29	19,764	-54.4		33	5.4	29	19,707	-59.1		87	15.7	24	19,527	-67.5		89	29.3
50	28	20,885	-53.9		89	7.6	29	20,828	-56.8		94	24.5	29	20,938	-52.7		66	7.2	28	20,857	-55.8		89	17.3	23	20,641	-61.7		91	43.1
40	27	22,324	-52.8		88	10.9	29	22,252	-53.9		89	27.6	28	22,388	-51.1		74	10.1	28	22,289	-52.3		89	19.4	23	22,044	-56.0		88	50.1
30	25	24,199	-49.9		88	12.2	27	24,112	-50.2		91	30.5	28	24,271	-48.4		82	11.9	28	24,162	-49.6		88	22.9	23	23,889	-51.8		85	45.7
25	24	25,398	-47.5		84	12.4	26	25,308	-48.4		90	30.9	27	25,480	-46.2		86	12.2	28	25,363	-47.1		87	25.5	22	25,089	-46.4		96	15.7
20	24	26,883	-44.5		81	15.2	26	26,785	-45.5		86	32.8	23	26,968	-44.2		84	12.6	28	26,849	-44.0		86	28.2	22	26,577	-44.7		256	7.8
15	11	28,828	-41.1				26	28,720	-41.5		86	36.7	16	28,922	-40.3		72	14.6	27	28,795	-40.3		84	30.5	21	28,517	-42.7		274	26.8
10							25	31,504	-35.7		92	42.9	8	31,716	-36.1				25	31,593	-35.7		83	34.6	20	31,261	-40.9		282	33.8
7							22	34,017	-31.0		93	40.0							18	34,090	-31.9		83	38.9	18	33,711	-37.9		277	42.0
5							13	36,407	-27.4										10	36,477	-26.2				17	36,042	-34.8		273	69.6

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	CAPE HATTERAS, N. C. 1014 MB						CARIBOU, ME. 989 MB						CHARLESTON, S. C. 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	4	21.1	91	265	1.0	30	191	12.9	79	244	1.7	30	13	22.0	91	265	1.4
1000	30	126	21.2	84	229	1.7	30	99					30	132	22.2	85	252	2.9
950	30	566	19.6	74	260	5.4	30	530	13.1	66	287	6.8	30	577	22.0	73	267	6.6
900	30	1,035	17.3	70	263	7.6	30	985	11.6	60	304	10.3	30	1,048	19.2	71	260	7.8
850	30	1,522	14.3	72	265	9.7	30	1,461	8.8	61	305	13.4	30	1,538	16.0	70	258	9.3
800	30	2,032	11.7	68	262	12.4	30	1,960	5.9	63	304	16.3	30	2,052	12.9	66	257	11.9
750	30	2,565	8.8	63	259	14.6	30	2,487	2.8	60	306	18.3	30	2,590	9.8	63	257	13.4
700	30	3,139	5.7	58	257	14.2	30	3,042	.0	54	298	19.6	30	3,163	6.7	57	257	13.4
650	30	3,737	2.6	51	258	14.0	30	3,632	- 2.8	47	298	22.0	30	3,765	3.3	55	258	14.6
600	30	4,386	- .9	49	252	15.0	30	4,264	- 6.2	46	297	24.5	30	4,413	- .6	51	262	13.8
550	30	5,067	- 4.9	49	255	14.0	30	4,934	-10.2	43	299	25.1	30	5,098	- 4.4	48	261	14.6
500	30	5,820	- 9.2	46	255	17.5	30	5,668	-14.9	38	301	28.0	30	5,850	- 8.8	45	266	15.2
450	30	6,620	-14.3	44	251	19.0	30	6,452	-20.2	41	298	30.1	30	6,656	-14.0	40	268	17.3
400	30	7,510	-20.5	43	253	22.5	30	7,322	-26.1	40	299	33.8	30	7,545	-19.9	37	266	17.7
350	30	8,485	-27.4	40	255	24.9	30	8,273	-33.4		299	36.3	30	8,522	-26.9	35	267	17.9
300	30	9,576	-35.8	38	256	24.7	30	9,338	-41.1		302	37.7	30	9,616	-35.2		263	17.9
250	30	10,818	-45.6		260	28.2	30	10,555	-49.1		300	39.6	30	10,861	-45.1		261	16.9
200	29	12,276	-56.3		271	29.1	30	12,001	-53.7		296	41.2	30	12,314	-56.3		261	19.0
175	28	13,112	-60.8		270	29.0	30	12,858	-53.9		294	34.6	30	13,152	-61.2		264	19.6
150	27	14,062	-63.7		267	23.9	30	13,848	-53.9		296	32.6	30	14,101	-64.5		270	17.3
125	25	15,179	-63.0		273	9.5	30	15,017	-54.4		292	26.4	30	15,211	-66.1		295	9.9
100	24	16,553	-62.3		354	2.7	30	16,447	-54.6		300	15.0	30	16,567	-65.3		342	4.9
80	24	17,932	-61.1		65	8.5	30	17,881	-52.8		314	8.4	30	17,932	-62.9		58	9.7
70	24	18,765	-59.5		73	12.2	30	18,749	-52.3		336	5.4	30	18,765	-60.9		61	11.7
60	24	19,733	-57.4		80	14.8	29	19,744	-51.4		16	3.7	30	19,722	-58.0		75	14.6
50	23	20,890	-54.6		90	17.3	29	20,930	-50.2		68	5.8	30	20,879	-55.1		90	14.6
40	23	22,327	-51.5		94	15.9	28	22,394	-49.1		81	10.1	30	22,316	-51.6		95	15.5
30	21	24,210	-47.7				27	24,292	-47.4		77	10.5	25	24,196	-48.6		87	15.3
25	21	25,417	-46.2				25	25,490	-45.6		85	12.0	24	25,397	-46.6		87	18.8
20	21	26,906	-44.2				24	26,979	-43.4		89	12.8	19	26,880	-44.6		90	21.0
15	19	28,837	-41.8				23	28,929	-39.4		89	16.5	13	28,835	-41.4			
10	19	31,615	-36.2				22	31,742	-32.6		91	18.3						
7	16	34,127	-31.5				20	34,311	-25.7		96	20.4						
5	9	36,466	-26.8				7	36,738	-20.0									

Standard pressure surface (mb)	COLD BAY, ALASKA * 1006 MB						COLUMBIA, MO. 986 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	30	6.1	90	166	5.8	30	238	18.9	84	150	4.7
1000	30	79			170	8.7	30	117				
950	30	499	4.1	86	182	11.7	30	558	21.6	67	208	10.5
900	30	937	1.9	87	187	11.7	30	1,029	19.3	67	234	11.1
850	30	1,397	.1	84	183	10.9	30	1,519	16.4	65	237	8.9
800	30	1,882	- 2.0	77	196	10.3	30	2,033	13.2	62	250	7.8
750	30	2,393	- 4.2	73	217	11.7	30	2,569	9.9	56	263	7.0
700	30	2,935	- 6.8	69	226	15.0	30	3,144	6.6	50	273	5.6
650	30	3,506	-10.0	67	230	17.1	30	3,742	2.9	47	277	4.1
600	30	4,124	-13.3	64	230	19.4	30	4,392	- 1.3	44	294	4.7
550	30	4,776	-17.7	59	233	22.0	30	5,070	- 5.6	40	277	6.6
500	30	5,489	-22.2	49	233	24.1	30	5,823	-10.3		275	8.5
450	30	6,245	-27.5	43	240	27.8	30	6,617	-15.3		279	8.0
400	30	7,094	-33.5	40	248	24.7	30	7,508	-21.2		287	11.3
350	30	8,018	-39.7		248	28.0	30	8,488	-27.9		293	14.4
300	30	9,058	-45.4		242	28.2	30	9,569	-36.3		287	16.3
250	30	10,263	-48.4		242	35.9	30	10,807	-46.0		284	24.9
200	29	11,727	-48.2		240	34.2	30	12,259	-55.5		287	35.9
175	29	12,607	-48.0		239	30.9	30	13,102	-58.9		287	31.4
150	29	13,623	-48.1		238	23.9	30	14,063	-61.3		296	31.5
125	29	14,823	-48.7		239	18.8	30	15,191	-62.1		297	21.2
100	28	16,296	-48.7		224	12.0	30	16,565	-63.2		301	10.9
80	27	17,756	-48.7		221	8.0	30	17,941	-62.1		350	4.1
70	27	18,632	-48.7		194	3.9	30	18,770	-60.5		42	6.4
60	27	19,646	-49.1		155	2.9	29	19,733	-58.2		74	10.9
50	27	20,841	-49.3		90	3.7	29	20,888	-55.3		86	12.0
40	27	22,304	-49.1		89	4.7	29	22,320	-52.9		86	12.8
30	27	24,194	-48.3		84	10.3	27	24,194	-49.6		89	14.4
25	27	25,396	-47.4		80	9.9	26	25,387	-47.5		88	14.0
20	25	26,880	-45.5		77	13.6	25	26,881	-45.1		81	13.2
15	23	28,806	-42.4		84	16.5	12	28,795	-42.5			
10	22	31,572	-37.8		78	19.2						
7	18	34,083	-32.9		70	21.4						
5	8	36,443	-28.2									

Standard pressure surface (mb)	DAYTON, OHIO 981 MB						DEL RIO, TEXAS 975 MB						DENVER, COLO. 836 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	297	16.5	84	100	1.2	30	314	23.8	82	109	7.8	30	1,611	11.5	69	213	2.7
1000	30	134					30	91					30	80				
950	30	573	18.8	63	232	1.4	30	537	22.8	81	129	15.5	30	519				
900	30	1,038	16.4	59	298	4.7	30	1,013	20.6	79	158	21.4	30	985				
850	30	1,522	13.7	54	302	7.0	30	1,507	19.2	74	165	19.0	30	1,471				
800	30	2,031	10.7	52	309	8.9	30	2,027	16.5	66	163	16.1	30	1,984	16.2	48	288	2.9
750	30	2,563	7.8	42	310	9.5	30	2,574	14.4	51	172	11.5	30	2,528	14.1	39	243	3.9
700	30	3,132	5.0		312	9.9	30	3,155	11.0	44	199	5.6	30	3,110	10.2	37	245	7.6
650	30	3,730	1.7		307	12.0	30	3,766	6.2	46	212	3.7	30	3,712	5.6	37	250	10.5
600	30	4,374	- 2.1	34	303	12.0	30	4,419	1.3	50	251	3.5	30	4,370	.4	39	246	12.0
550	30	5,054	- 6.0		308	11.7	30	5,104	- 3.7	47	277	8.0	30	5,051	- 5.0	41	239	15.5
500	30	5,801	-10.9		306	12.4	30	5,861	- 8.0	42	275	9.1	30	5,804	-10.3	35	237	18.3
450	30	6,595	-16.4		303	12.8	30	6,668	-12.9		271	8.5	30	6,601	-16.0		235	19.4
400	30	7,480	-22.4		302	14.0	30	7,562	-19.0		275	11.3	30	7,484	-22.8		228	20.6
350	30	8,447	-29.6		305	15.7	30	8,542	-25.9		279	15.0	30	8,448	-30.5		233	22.3
300	30	9,527	-38.1		302	16.5	30	9,641	-33.8		275	18.3	30	9,525	-39.0		235	28.0
250	30	10,756	-47.5		302	20.6	29	10,892	-43.1		275	24.3	30	10,751	-47.8		237	35.2
200	30	12,199	-56.2		301	24.9	29	12,362	-53.3		272	28.6	30	12,201	-54.0		238	42.6
175	30	13,043	-58.2		300	23.7	29	13,211	-58.8		272	29.0	30	13,054	-55.8		239	42.4
150	30	14,010	-58.9		306	19.4	29	14,166	-64.1		272	25.1	30	14,031	-58.1		240	33.4
125	30	15,149	-60.7		307	14.8	28	15,266	-69.4		270	13.6	30	15,173	-60.0		242	21.2
100	30	16,534	-61.0		316	10.7	28	16,591	-70.8		188	2.1	30	16,558	-61.7		231	10.1
80	30	17,924	-59.8		345	6.4	28	17,924	-66.3		97	8.7	30	17,948	-59.6		181	5.1
70	30	18,766	-58.8		8	6.6	28	18,745	-63.7		92	14.2	30	18,787	-58.2		114	4.7
60	30	19,733	-56.8		50	7.2	28	19,692	-60.1		90	16.1	30	19,761	-56.6		95	8.9
50	30	20,894	-54.6		69	8.7	28	20,838	-56.8		92	17.5	30	20,922	-54.4		93	10.7
40	30	22,333	-51.8		74	9.9	28	22,263	-53.6		91	19.8	30	22,359	-52.4		82	11.5
30	29	24,209	-49.3		78	9.1	28	24,127	-50.5		94	23.3	29	24,229	-49.7		91	13.8
25	26	25,397	-47.0		77	9.1	28	25,321	-48.5		90	23.9	28	25,429	-47.7		86	15.0
20	25	26,882	-44.8		76	8.7	27	26,797	-45.7		86	25.6	26	26,911	-45.2		85	14.6
15	15	28,845	-40.6		75	8.2	24	28,730	-42.8		83	28.0	19	28,862	-42.0		89	13.6
10	9	31,637	-35.9				18	31,488	-39.0		91	27.4	10	31,621	-37.3			
7	6	34,110	-34.7				5	33,903	-35.5									

Standard pressure surface (mb)	DODGE CITY, KANS. 922 MB						EL PASO, TEXAS 880 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	792	18.4	81	189	6.4	30	1,193	21.0	44	231	.6
1000	30	90					30	67				
950	30	532					30	517				
900	30	1,003	20.3	69	195	16.9	30	1,000				
850	30	1,497	19.6	53	210	22.0	30	1,496	21.8	34	234	2.3
800	30	2,018	17.2	45	218	18.7	30	2,019	18.7	32	247	7.8
750	30	2,561	13.5	41	219	14.4	30	2,563	15.1	30	246	9.3
700	30	3,143	9.4	45	223	12.2	30	3,148	10.7	32	241	8.5
650	30	3,749	5.0	46	236	11.3	30	3,753	5.4	36	237	9.1
600	30	4,402	.3	44	238	11.1	30	4,410	.6	41	225	12.6
550	30	5,086	- 4.6	43	245	10.5	30	5,093	- 4.6	41	226	15.2
500	30	5,838	- 9.8	40	251	10.7	30	5,847	- 9.1		234	15.7
450	30	6,637	-15.1		257	13.6	30	6,648	-14.6		237	16.5
400	30	7,526	-21.3		254	15.3	30	7,537	-20.8		245	21.2
350	30	8,497	-28.3		249	18.8	30	8,509	-28.1		247	27.2
300	30	9,584	-36.6		249	23.9	30	9,598	-35.7		250	33.2
250	30	10,823	-45.8		243	30.1	30	10,844	-44.4		251	39.8
200	30	12,281	-54.2		251	39.8	29	12,311	-54.1		249	44.5
175	30	13,129	-57.7		257	37.3	29	13,159	-58.9		245	46.0
150	30	14,095	-60.7		259	32.6	29	14,116	-63.6		247	37.5
125	29	15,221	-63.4		260	21.8	29	15,223	-67.8		244	27.0
100	29	16,586	-64.9		251	10.5	29	16,559	-69.2		226	9.5
80	28	17,959	-62.2		221	2.1	29	17,902	-65.2		133	5.2
70	28	18,791	-60.5		106	4.7	29	18,722	-62.8		105	8.7
60	28	19,752	-58.1		104	7.6	29	19,675	-59.8		95	12.6
50	27	20,907	-55.3		88	9.3	29	20,821	-56.9		96	14.4
40	27	22,340	-52.6		90	13.0	28	22,247	-54.0		89	16.1
30	27	24,210	-49.5		99	12.2	27	24,103	-50.8		88	18.3
25	26	25,413	-47.3		95	12.6	26	25,295	-48.5		89	20.4
20	24	26,901	-44.7		88	17.1	25	26,772	-45.5		86	21.0
15	17	28,830	-42.0		87	17.5	16	28,682	-42.6		93	16.9
							5	31,408	-40.2			

Standard pressure surface (mb)	ELY, NEV. 807 MB						FAIRBANKS, ALASKA * 992 MB						FLINT, MICH. 989 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,908	5.5	78	162	3.3	30	135	8.7	79	256	1.4	30	234	14.4	88	238	1.9
1000	30	113					30	63					30	159				
950	30	546					30	485	8.4	66	233	6.0	30	579	17.7	60	267	5.6
900	30	1,001					30	934	5.9	63	235	7.8	30	1,037	15.2	55	289	8.2
850	30	1,478					30	1,399	2.4	68	230	7.8	30	1,518	12.4	57	291	11.1
800	30	1,979	7.3	71	147	2.9	30	1,886	- 1.2	72	221	7.8	30	2,024	9.4	51	292	11.7
750	30	2,513	7.0	57	118	1.4	30	2,394	- 4.7	79	218	6.4	30	2,558	6.6	46	292	10.9
700	30	3,077	3.8	55	214	5.1	30	2,937	- 8.3	78	214	5.8	30	3,121	3.7	36	295	11.3
650	30	3,673	- .2	54	219	9.3	30	3,506	-11.8	73	201	6.8	30	3,717	.6		297	13.4
600	30	4,310	- 4.6	52	220	15.3	30	4,118	-15.7	67	184	4.5	30	4,357	- 3.1		300	15.7
550	30	4,988	- 9.1	44	224	17.3	30	4,764	-20.3	65	183	4.7	30	5,036	- 7.3		298	16.3
500	30	5,721	-13.9	40	232	19.4	30	5,468	-25.1	56	204	6.4	30	5,777	-12.0		297	18.8
450	30	6,507	-19.3	34	235	22.3	30	6,216	-30.6	49	216	7.8	30	6,567	-17.3		298	20.4
400	30	7,377	-26.0		236	22.2	30	7,052	-36.8	49	205	8.2	30	7,448	-23.4		299	22.2
350	30	8,330	-33.1		237	21.8	30	7,963	-43.7		191	8.2	30	8,411	-30.3		296	25.1
300	30	9,395	-41.1		235	28.2	30	8,984	-49.6		210	7.6	30	9,489	-38.3		295	29.1
250	30	10,612	-48.8		239	29.3	30	10,178	-48.3		212	7.6	30	10,717	-47.8		300	32.3
200	30	12,064	-52.1		243	30.1	30	11,662	-44.4		218	7.2	30	12,160	-55.1		300	31.9
175	30	12,927	-52.9		239	27.6	30	12,558	-43.9		213	6.8	30	13,008	-57.0		303	26.8
150	30	13,919	-54.7		242	22.5	30	13,593	-44.3		190	5.8	29	13,979	-57.1		304	22.0
125	30	15,076	-57.7		236	18.5	28	14,817	-45.1		198	5.4	29	15,130	-58.1		307	15.7
100	29	16,483	-59.4		217	9.5	28	16,304	-45.3		181	4.7	28	16,536	-58.8		314	12.0
80	29	17,880	-59.3		176	3.9	27	17,789	-45.8		166	4.7	28	17,940	-57.8		341	7.6
70	29	18,727	-58.1		102	5.2	27	18,676	-45.8		161	4.1	28	18,793	-56.8		22	7.2
60	29	19,694	-56.4		95	8.4	26	19,702	-45.9		129	4.5	28	19,765	-54.7		49	7.6
50	29	20,855	-54.9		89	9.1	26	20,914	-46.2		102	7.4	27	20,938	-52.5		65	8.5
40	29	22,286	-53.3		87	10.7	26	22,398	-45.7		106	10.3	27	22,386	-50.8		79	11.9
30	29	24,154	-49.6		80	13.4	26	24,319	-44.5		98	11.3	27	24,269	-48.4		81	12.6
25	28	25,359	-46.9		85	13.4	24	25,541	-43.3		95	14.6	26	25,477	-46.2		87	14.0
20	28	26,844	-45.2		82	14.2	23	27,050	-41.3		94	16.5	23	26,967	-43.6		81	11.3
15	25	28,769	-41.8		88	13.0	21	29,024	-37.9		90	19.6	10	28,882	-41.0			
10	5	31,491	-36.3				21	31,845	-33.1		86	24.3						
7							17	34,400	-27.9		85	27.6						
5							7	36,794	-23.8									

Standard pressure surface (mb)	FORT WORTH, TEXAS 992 MB						GLASGOW, MONT. 930 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	180	23.3	79	172	2.5	30	696	12.6	82	79	1.7
1000	30	110					30	80				
950	30	559	23.1	71	195	14.2	30	515				
900	30	1,032	21.7	62	197	15.0	30	973	13.9	69	218	1.4
850	30	1,526	18.6	63	198	11.3	30	1,454	12.1	63	279	5.2
800	30	2,044	15.3	57	202	9.5	30	1,960	9.4	62	280	8.9
750	30	2,587	12.2	48	212	6.8	30	2,489	6.3	61	274	9.3
700	30	3,164	9.0	46	217	5.1	30	3,055	2.6	66	260	11.3
650	30	3,771	4.9	44	238	3.7	30	3,645	- 1.4	63	252	16.1
600	30	4,421	.3	41	253	5.4	30	4,284	- 5.0	57	248	20.0
550	30	5,106	- 4.1	37	270	7.2	30	4,954	- 9.3	52	249	22.2
500	30	5,859	- 8.8	40	271	8.2	30	5,694	-14.0	44	247	23.5
450	30	6,664	-14.0	37	266	11.5	30	6,475	-19.8	40	244	24.9
400	30	7,553	-19.9		267	14.2	30	7,348	-26.2	37	242	25.5
350	30	8,530	-26.9		271	16.9	30	8,299	-33.2		240	29.1
300	30	9,624	-34.9		274	22.0	30	9,363	-41.1		239	31.7
250	30	10,871	-44.3		270	26.4	30	10,579	-49.0		233	36.9
200	30	12,335	-53.6		279	30.3	30	12,020	-54.1		238	37.7
175	30	13,186	-57.9		283	31.1	30	12,879	-53.0		246	32.4
150	30	14,145	-63.2		283	24.7	30	13,872	-53.0		240	27.2
125	30	15,254	-67.3		293	16.9	30	15,043	-54.5		242	18.3
100	30	16,593	-68.4		298	4.3	30	16,464	-55.8		246	8.9
80	30	17,942	-65.2		80	6.4	30	17,885	-55.5		236	3.5
70	30	18,769	-62.6		86	11.7	30	18,734	-55.1		161	1.4
60	30	19,717	-59.5		93	13.6	30	19,723	-54.1		103	3.3
50	30	20,796	-56.6		93	13.6	30	20,894	-53.2		83	5.2
40	29	22,293	-53.1		89	15.9	27	22,337	-51.4		84	8.5
30	26	24,166	-49.7		92	17.5	26	24,216	-48.9		82	11.7
25	26	25,365	-47.4		80	17.3	26	25,417	-47.2		86	12.4
20	26	26,851	-44.8		89	21.2	25	26,896	-44.9		88	14.4
15	15	28,784	-42.4		88	20.4	17	28,829	-41.8		85	13.6
							5	31,587	-39.4			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

GRAND JUNCTION, COLO. 849 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	15.8	35	134	5.1
1000	30	58				
950	30	504				
900	30	976				
850	30	1,467			131	4.5
800	30	1,985	16.3	30	156	10.7
750	30	2,528	13.2	30	192	9.1
700	30	3,106	8.9	33	222	11.9
650	30	3,709	3.9	38	225	15.3
600	30	4,358	- 1.4	44	221	20.2
550	30	5,038	- 6.8	45	214	24.7
500	30	5,782	-12.0	39	216	28.0
450	30	6,573	-17.2		219	28.6
400	30	7,454	-23.5		220	30.7
350	30	8,415	-31.0		226	30.9
300	30	9,490	-39.4		228	35.4
250	30	10,713	-47.9		231	37.9
200	30	12,164	-53.7		237	39.6
175	30	13,019	-55.3		236	34.4
150	30	13,997	-57.7		234	32.1
125	30	15,142	-59.6		233	22.9
100	30	16,532	-61.1		224	11.1
80	30	17,919	-59.7		168	5.1
70	30	18,762	-58.5		137	4.7
60	30	19,729	-56.7		109	6.4
50	29	20,890	-54.8		96	8.4
40	29	22,324	-52.6		91	9.9
30	29	24,192	-50.1		91	13.2
25	29	25,389	-47.6		95	12.0
20	28	26,870	-45.0		91	13.2
15	27	28,800	-42.2		[illegible]	12.4
10	25	31,569	-36.8		102	12.6
7	23	34,064	-32.6		97	13.6
5	21	36,444	-28.4			

GREAT FALLS, MONT. 885 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	11.5	75	236	4.9
1000	30	84				
950	30	521				
900	30	984				
850	30	1,460	12.6	58	239	8.4
800	30	1,966	9.4	60	254	6.4
750	30	2,495	5.8	62	265	6.6
700	30	3,059	2.0	65	269	6.8
650	30	3,649	- 1.9	65	257	10.1
600	30	4,286	- 5.9	60	240	12.4
550	30	4,959	- 9.8	52	237	16.9
500	30	5,694	-14.4	46	231	18.7
450	30	6,480	-20.2	41	227	21.2
400	30	7,348	-26.6	39	231	23.1
350	30	8,298	-34.0	35	228	24.5
300	30	9,360	-42.2		227	27.4
250	30	10,570	-50.6		228	29.3
200	30	12,011	-52.6		229	32.6
175	30	12,878	-51.5		230	27.8
150	30	13,877	-52.2		230	22.7
125	29	15,057	-53.6		227	19.0
100	29	16,489	-55.1		231	10.7
80	29	17,912	-55.3		211	5.4
70	29	18,766	-55.1		186	3.3
60	29	19,752	-53.7		115	3.1
50	29	20,927	-52.5		93	6.4
40	29	22,374	-51.2		89	8.9
30	29	24,253	-48.8		87	10.5
25	29	25,456	-47.1		84	13.2
20	28	26,938	-45.2		85	13.4
15	27	28,872	-41.8		88	15.7
10	26	31,659	-36.5		93	18.1
7	24	34,170	-32.1		96	21.8
5	21	36,546	-29.0			

GREEN BAY, WIS. 990 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	210	14.3	91	272	1.4
1000	30	122				
950	30	560	16.9	65	254	6.2
900	30	1,018	14.7	63	260	6.8
850	30	1,500	12.0	61	270	8.5
800	30	2,006	9.6	53	279	10.5
750	30	2,538	7.0	50	285	10.5
700	30	3,105	3.9	46	291	13.6
650	30	3,698	.5	39	292	15.5
600	30	4,342	- 3.3	36	296	16.1
550	30	5,019	- 7.3		291	18.3
500	30	5,762	-12.0		291	20.4
450	30	6,553	-17.5		288	21.8
400	30	7,432	-23.5		286	25.3
350	30	8,394	-30.5		289	29.5
300	30	9,470	-38.7		289	31.3
250	30	10,698	-47.3		291	35.9
200	30	12,146	-54.6		295	34.4
175	29	12,998	-56.5		291	30.1
150	29	13,975	-56.5		295	25.5
125	29	15,129	-57.6		299	15.9
100	29	16,533	-58.4		306	12.4
80	29	17,940	-57.3		325	7.4
70	29	18,787	-56.3		355	6.4
60	29	19,768	-54.8		41	6.4
50	29	20,939	-52.8		70	9.1
40	28	22,386	-50.9		76	12.0
30	27	24,268	-48.4		81	14.0
25	26	25,478	-45.9		85	15.2
20	23	26,972	-43.7		90	16.3
15	10	28,934	-39.4		82	17.7

GREENSBORO, N. C. 985 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	273	17.7	90	310	1.4
1000	30	140				
950	30	580	18.7	74	324	4.7
900	30	1,043	16.3	69	315	5.4
850	30	1,527	14.1	62	284	7.2
800	30	2,038	11.4	63	276	10.3
750	30	2,574	8.5	61	275	10.1
700	30	3,144	5.5	59	273	10.7
650	30	3,747	2.5	52	271	11.1
600	30	4,391	- 1.3	50	269	12.2
550	30	5,076	- 5.1	44	270	12.8
500	30	5,824	- 9.8	42	269	15.5
450	30	6,626	-15.0	45	269	14.8
400	30	7,513	-20.9	43	267	20.4
350	30	8,486	-27.9	39	266	23.1
300	30	9,575	-36.1		269	27.4
250	30	10,816	-46.0		269	30.3
200	30	12,264	-56.4		277	31.7
175	30	13,102	-60.9		280	29.3
150	30	14,056	-62.3		282	25.6
125	30	15,179	-63.2		288	19.6
100	30	16,550	-63.0		309	11.9
80	30	17,927	-62.1		356	5.2
70	30	18,761	-60.0		65	6.8
60	29	19,724	-58.0		82	11.5
50	29	20,881	-55.3		86	13.0
40	29	22,315	-52.2		84	12.0
30	26	24,187	-49.2		89	13.8
25	25	25,388	-47.1		81	12.4
20	23	26,876	-45.1		85	16.3
15	10	28,821	-42.3			

GUAM, MARIANA IS. 998 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	111	25.1	93	88	2.7
1000	30	94				
950	30	548	23.6	86	92	8.5
900	30	1,018	20.9	85	92	8.2
850	30	1,513	18.3	84	90	7.8
800	30	2,032	15.5	84	90	7.4
750	30	2,577	12.8	80	98	8.0
700	30	3,157	9.7	75	94	8.0
650	30	3,770	6.3	71	90	8.4
600	30	4,423	2.5	72	83	8.4
550	30	5,121	- 1.5	65	84	8.4
500	30	5,877	- 5.9	61	86	8.2
450	30	6,694	-10.7	60	77	5.2
400	30	7,594	-16.2	51	61	4.7
350	30	8,585	-23.3	44	64	2.1
300	30	9,695	-31.6		348	.6
250	30	10,958	-41.8		355	4.5
200	30	12,429	-54.2		313	5.8
175	30	13,271	-61.4		311	7.6
150	30	14,210	-68.9		325	1.4
125	30	15,280	-75.9		98	.6
100	29	16,554	-77.8		77	11.3
80	27	17,850	-73.0		81	21.4
70	27	18,640	-69.1		81	28.6
60	26	19,571	-65.5		85	38.1
50	25	20,694	-60.9		87	43.1
40	25	22,097	-56.0		89	47.4
30	25	23,945	-52.1		88	44.9
25	25	25,130	-50.1		88	42.6
20	22	26,597	-47.4		86	34.0
15	16	28,525	-43.1		79	32.1
10	7	31,275	-41.2			

HILO, HAWAII 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	20.8	[illegible]	244	5.4
1000	30	150	21.5	82	244	2.9
950	30	596	18.8	84	94	5.8
900	30	1,058	15.8	87	90	8.4
850	30	1,542	12.9	88	91	8.5
800	30	2,051	10.1	84	99	8.4
750	30	2,590	8.1	64	96	8.2
700	30	3,154	6.1	44	104	6.0
650	30	3,757	4.2		86	3.3
600	30	4,407	.6		21	.8
550	30	5,095	- 3.4		309	2.5
500	30	5,849	- 8.3		275	4.9
450	30	6,654	-13.9		270	8.9
400	30	7,544	-20.2		259	15.7
350	30	8,520	-27.2		259	21.0
300	30	9,612	-35.4		263	26.4
250	30	10,856	-45.1		266	37.1
200	30	12,310	-56.0		264	42.9
175	30	13,148	-61.4		262	46.2
150	30	14,091	-66.7		263	42.2
125	30	15,185	-69.4		261	28.2
100	29	16,514	-69.8		237	7.4
80	29	17,847	-67.9		92	10.3
70	29	18,653	-65.6		90	19.2
60	29	19,595	-62.6		92	23.9
50	28	20,731	-59.3		87	30.3
40	28	22,138	-56.1		88	35.8
30	28	23,978	-53.1		90	36.9
25	27	25,159	-50.6		90	35.9
20	25	26,622	-48.5		93	37.3
15	14	28,529	-45.4		97	38.7

HUNTINGTON, W. VA. 988 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	15.7	94	173	1.0
1000	30	141				
950	30	582	18.4	71	240	4.5
900	30	1,044	16.2	66	275	5.4
850	30	1,529	13.3	67	303	6.4
800	30	2,037	10.7	60	304	8.0
750	30	2,568	7.8	54	294	8.9
700	30	3,139	5.1	50	294	8.5
650	30	3,734	1.8	44	302	10.5
600	30	4,383	- 1.8		306	11.7
550	30	5,061	- 5.8		306	12.2
500	30	5,811	-10.5	32	300	12.6
450	30	6,602	-15.9		297	13.0
400	30	7,492	-22.1		296	15.0
350	30	8,459	-29.3		295	17.7
300	30	9,543	-37.1		287	20.4
250	30	10,779	-46.6		281	25.1
200	30	12,229	-55.9		287	26.6
175	30	13,072	-58.5		288	25.3
150	30	14,038	-59.5		295	21.6
125	30	15,174	-61.3		305	12.2
100	30	16,558	-61.3		313	12.2
80	30	17,945	-60.2		354	6.4
70	30	18,784	-58.6		23	5.1
60	30	19,755	-56.4		45	5.8
50	30	20,918	-54.2		71	10.1
40	29	22,359	-51.9		80	13.8
30	29	24,240	-48.4		79	10.3
25	29	25,444	-46.7		81	11.1
20	24	26,933	-44.1		82	11.7
15	21	28,861	-40.6		82	11.5
10	5	31,633	-37.1			

INTERNAT. FALLS, MINN.* 970 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	12.8	84	161	2.1
1000	30	104				
950	30	540	15.5	73	184	5.6
900	30	997	14.8	64	219	8.9
850	30	1,479	12.1	62	237	7.0
800	30	1,985	9.5	56	259	8.7
750	30	2,515	6.4	48	267	9.9
700	30	3,081	3.1	49	274	12.0
650	30	3,668	- .7	46	270	13.2
600	30	4,312	- 4.7	40	269	15.3
550	30	4,985	- 8.8	37	271	18.1
500	30	5,724	-13.5	31	275	20.8
450	30	6,509	-19.2	27	278	22.2
400	30	7,384	-25.3	23	281	25.3
350	30	8,340	-32.4	23	284	29.7
300	30	9,409	-40.4	22	282	32.1
250	30	10,630	-48.6		279	39.2
200	30	12,075	-54.1		276	39.2
175	30	12,930	-55.0		278	34.4
150	30	13,915	-54.9		277	28.0
125	30	15,077	-56.0		274	18.7
100	30	16,493	-56.6		285	13.2
80	30	17,908	-56.4		294	6.6
70	30	18,758	-55.8		328	2.9
60	29	19,742	-54.5		25	3.7
50	29	20,913	-53.0		72	5.6
40	28	22,359	-51.4		75	8.0
30	27	24,239	-49.0		81	11.3
25	26	25,438	-47.8		82	13.6
20	25	26,925	-45.5		85	16.1
15	25	28,861	-41.5		83	15.3
10	25	31,646	-35.6		85	17.3
7	23	34,168	-30.7		88	21.8
5	[illegible]	36,609	-24.2			

JACKSON, MISS. 1004 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	94	21.8	88	191	1.0
1000	30	129	22.1	86	188	1.4
950	30	578	22.4	71	244	6.8
900	30	1,047	19.9	70	247	5.8
850	30	1,538	16.7	71	261	5.2
800	30	2,053	13.1	72	269	4.1
750	30	2,591	10.0	65	289	2.5
700	30	3,164	6.5	57	282	2.7
650	30	3,767	3.2	52	291	6.0
600	30	4,415	- .4	46	311	6.4
550	30	5,102	- 4.4	40	317	7.4
500	30	5,852	- 8.7	37	307	9.3
450	30	6,657	-13.9	36	304	11.7
400	30	7,547	-19.7	36	303	15.3
350	30	8,525	-26.7		299	17.9
300	30	9,620	-34.8		299	21.8
250	30	10,868	-44.4		306	23.7
200	30	12,329	-54.5		310	27.0
175	30	13,175	-59.1		312	27.2
150	30	14,133	-63.0		315	25.6
125	30	15,247	-66.1		322	18.5
100	30	16,596	-67.0		345	12.0
80	30	17,950	-64.1		57	9.1
70	30	18,778	-62.3		73	11.5
60	30	19,729	-59.3		86	14.0
50	30	20,880	-55.8		91	15.3
40	30	22,311	-52.5		89	16.7
30	27	24,181	-49.7		86	19.8
25	26	25,377	-47.7		86	22.2
20	21	26,867	-45.3		88	22.9
15	9	28,798	-41.7			

JACKSONVILLE, FLA. 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	23.1	93	258	3.3
1000	30	142	22.8	89	245	5.4
950	30	589	21.7	78	257	10.3
900	30	1,058	19.3	72	255	8.5
850	30	1,549	16.2	72	241	8.4
800	30	2,063	13.1	68	239	8.4
750	30	2,600	10.0	63	238	8.9
700	30	3,176	6.7	59	245	8.4
650	29	3,774	3.0	54	245	9.1
600	29	4,426	- .6	49	255	7.2
550	29	5,110	- 4.4	46	263	7.6
500	29	5,864	- 8.8	45	267	8.7
450	29	6,668	-14.1	42	277	9.1
400	29	7,559	-19.6	38	272	10.5
350	29	8,537	-26.7	37	273	11.3
300	29	9,631	-34.9	34	279	12.0
250	29	10,877	-44.7		286	12.8
200	29	12,334	-55.8		288	13.8
175	29	13,173	-61.0		296	15.7
150	29	14,122	-64.5		301	13.2
125	29	15,228	-67.1		321	11.7
100	28	16,575	-66.3		5	8.4
80	28	17,933	-63.6		64	9.5
70	28	18,761	-61.0		76	12.4
60	27	19,719	-58.4		81	14.0
50	27	20,873	-55.4		89	16.3
40	25	22,307	-52.2		99	17.3
30	25	24,179	-49.2		90	18.8
25	24	25,379	-47.0		85	21.4
20	24	26,865	-44.3		83	25.3
15	23	28,806	-40.6		85	29.9
10	18	31,601	-35.2		101	31.5
7	16	34,106	-30.7		90	26.6
5	8	36,503	-25.3			

JOHNSTON IS., PACIFIC AREA 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	3	26.0	85	81	13.0
1000	27	130	24.7	84	82	15.3
950	27	577	20.9	84	83	19.2
900	27	1,046	17.7	83	87	18.5
850	27	1,533	14.7	82	85	16.7
800	27	2,044	11.9	74	82	14.2
750	27	2,579	10.2	57	82	10.3
700	27	3,154	7.7	43	83	6.4
650	27	3,752	4.7	35	82	5.2
600	27	4,410	1.3	33	89	3.9
550	27	5,098	- 2.8		103	2.1
500	27	5,854	- 7.4		210	.8
450	27	6,661	-12.7		253	3.9
400	27	7,556	-18.8		265	8.5
350	27	8,536	-25.9		262	13.4
300	27	9,633	-34.2		264	20.0
250	27	10,883	-44.1		266	31.1
200	27	12,339	-56.2		262	38.7
175	26	13,175	-62.5		261	37.5
150	26	14,110	-67.0		263	34.6
125	26	15,186	-73.9		263	24.7
100	26	16,480	-74.9		254	5.1
80	25	17,794	-70.2		87	14.2
70	25	18,593	-66.5		88	22.5
60	25	19,533	-63.3		91	30.3
50	25	20,662	-60.2		88	35.8
40	25	22,068	-56.7		89	38.9
30	25	23,909	-53.1		88	41.2
25	25	25,091	-50.8		88	40.4
20	25	26,555	-48.1		87	36.3
15	20	28,474	-45.1		87	35.2
10	8	31,191	-41.9			

KING SALMON, ALASKA 1008 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	5.6	89	192	5.4
1000	30	81	5.9	86	201	7.2
950	30	498	4.8	77	206	10.3
900	30	940	2.3	79	207	9.3
850	30	1,400	- .3	79	204	8.0
800	30	1,884	- 2.7	75	203	7.2
750	30	2,392	- 5.3	73	215	7.2
700	30	2,932	- 8.3	67	218	7.0
650	30	3,503	-11.4	62	224	6.6
600	30	4,115	-14.9	57	235	7.6
550	30	4,765	-19.0	51	238	8.0
500	30	5,471	-23.6	46	235	10.3
450	30	6,229	-28.9	44	242	13.0
400	30	7,067	-34.6	46	247	15.9
350	30	7,987	-41.0		251	22.0
300	30	9,020	-47.0		253	23.7
250	30	10,220	-48.9		256	24.7
200	30	11,692	-46.9		255	22.7
175	30	12,578	-46.1		248	18.3
150	30	13,603	-46.0		246	14.2
125	30	14,813	-46.8		244	12.8
100	29	16,292	-47.2		239	9.9
80	29	17,768	-47.6		234	6.8
70	28	18,652	-47.7		232	4.7
60	28	19,668	-47.9		206	2.9
50	28	20,870	-47.9		138	3.3
40	28	22,343	-47.6		114	5.6
30	26	24,240	-46.7		107	8.9
25	25	25,454	-45.5		94	10.1
20	23	26,941	-43.7		111	16.1
15	19	28,880	-40.7		96	12.8
10	7	31,635	-37.0			

KOTZEBUE, ALASKA 1006 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	5.5	88	309	4.1
1000	30	57			302	7.2
950	30	474	5.5	69		.0
900	30	917	3.2	64	178	1.4
850	30	1,378	.5	64	167	1.0
800	30	1,863	- 2.3	62	143	2.7
750	30	2,367	- 5.5	61	147	4.3
700	30	2,911	- 8.7	54	141	4.3
650	30	3,472	-12.2	47	141	4.3
600	30	4,089	-16.3	46	150	4.1
550	30	4,731	-20.7	40	180	3.5
500	30	5,436	-25.7	37	165	4.1
450	30	6,181	-31.3		180	4.5
400	30	7,015	-37.2		168	4.5
350	30	7,926	-43.2		194	4.9
300	30	8,950	-49.1		213	3.9
250	30	10,141	-49.7		193	3.3
200	30	11,622	-44.2		186	5.2
175	30	12,519	-43.8		183	5.6
150	30	13,554	-43.9		176	4.7
125	30	14,777	-44.4		169	5.4
100	30	16,270	-44.7		156	5.4
80	29	17,760	-44.9		140	6.0
70	29	18,657	-44.9		126	5.8
60	29	19,683	-44.8		116	6.2
50	29	20,902	-44.8		108	8.2
40	29	22,396	-44.4		103	10.5
30	29	24,328	-43.2		93	10.5
25	27	25,559	-42.1		93	14.6
20	25	27,069	-40.7		92	16.7
15	21	29,050	-37.6		87	21.6
10	13	31,870	-33.1			

LAKE CHARLES, LA. 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	23.0	95	87	1.7
1000	30	126	24.6	83	154	2.3
950	30	579	22.3	79	196	8.4
900	30	1,046	19.9	71	188	9.1
850	30	1,538	17.1	68	180	8.7
800	30	2,053	14.2	62	175	7.2
750	30	2,594	11.2	55	186	5.4
700	30	3,170	7.8	54	193	2.1
650	30	3,775	4.3	48	304	2.9
600	30	4,425	.4	48	318	4.9
550	30	5,114	- 3.4	41	308	6.4
500	30	5,867	- 7.8	35	309	8.2
450	30	6,681	-13.0	34	304	10.3
400	30	7,568	-19.0	33	301	12.8
350	30	8,548	-25.9		294	13.6
300	30	9,647	-34.1		294	16.7
250	30	10,898	-43.8		294	23.1
200	30	12,362	-53.9		300	25.1
175	30	13,209	-59.2		304	23.3
150	30	14,164	-64.0		305	21.2
125	30	15,268	-67.9		317	15.9
100	30	16,603	-68.9		5	9.7
80	30	17,950	-65.0		75	11.9
70	30	18,775	-63.0		80	15.7
60	30	19,725	-59.5		88	16.9
50	30	20,876	-55.8		94	16.5
40	30	22,306	-53.2		91	17.7
30	29	24,174	-49.7		83	22.7
25	29	25,374	-47.2		83	24.7
20	26	26,852	-44.6		85	25.5
15	17	28,794	-41.6		85	29.3

LANDER, WYO. 827 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,696	11.0	66	241	2.3
1000	30	81				
950	30	520				
900	30	983				
850	30	1,468				
800	30	1,977	12.0	52	249	1.7
750	30	2,515	8.9	50	229	2.1
700	30	3,083	5.3	49	237	5.2
650	30	3,678	1.1	50	224	11.9
600	30	4,323	- 3.3	51	218	19.6
550	30	4,998	- 8.1	48	216	24.7
500	30	5,740	-13.2	43	218	28.2
450	30	6,528	-18.6	38	221	31.1
400	30	7,404	-25.2	33	219	35.9
350	30	8,358	-32.7	33	218	39.4
300	30	9,424	-41.1		218	46.2
250	30	10,640	-49.6		225	39.1
200	30	12,081	-54.6		224	40.0
175	30	12,935	-54.7		225	39.4
150	29	13,923	-55.4		225	35.9
125	29	15,082	-57.0		231	26.0
100	29	16,488	-58.6		230	12.4
80	29	17,894	-57.6		188	2.1
70	29	18,739	-57.1		117	2.5
60	29	19,716	-55.5		77	6.6
50	29	20,880	-54.5		74	10.5
40	29	22,314	-52.6		82	12.8
30	27	24,184	-49.5		75	15.9
25	24	25,388	-47.3		78	15.5
20	24	26,870	-45.1		88	14.0
15	22	28,807	-42.0		85	14.8
10	6	31,519	-38.3			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

LAS VEGAS, NEV. 933 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	660	20.3	29	222	6.6
1000	30	55				
950	30	498				
900	30	973	21.3	28	236	5.8
850	30	1,465	17.9	30	265	4.7
800	30	1,979	14.2	34	242	[illegible].5
750	30	2,518	10.1	37	214	5.6
700	30	3,089	5.8	40	216	7.[illegible]
650	30	3,685	2.1	37	227	11.5
600	30	4,332	- 2.4		233	14.4
550	30	5,012	- 6.4		236	18.3
500	30	5,754	-11.7		239	21.4
450	30	6,546	-17.7		241	24.3
400	30	7,423	-24.6		244	28.6
350	30	8,381	-31.9		243	33.8
300	30	9,453	-39.7		241	34.6
250	30	10,679	-47.4		243	41.6
200	30	12,137	-52.3		247	44.5
175	30	12,996	-54.6		246	40.4
150	30	13,977	-56.9		247	35.0
125	30	15,123	-60.4		239	22.5
100	30	16,507	-62.0		228	13.8
80	29	17,888	-60.3		158	5.2
70	29	18,726	-58.6		121	6.0
60	27	19,699	-57.3		100	7.8
50	27	20,855	-55.8		96	10.1
40	22	22,289	-53.2		94	13.0
30	19	24,169	-49.5		91	13.0
25	16	25,360	-47.4		93	15.7
20	12	26,819	-44.6		85	16.5
15	8	28,770	-41.8			

LIHUE, HAWAII * 3/ 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	36	23.4	78	58	9.9
1000	30	159	22.8	78	62	12.6
950	30	604	19.1	84	72	17.1
900	30	1,068	15.8	85	75	15.7
850	30	1,552	12.8	82	81	15.0
800	30	2,059	10.1	70	87	14.6
750	30	2,595	8.4	51	87	12.8
700	30	3,163	6.5	28	79	8.7
650	30	3,764	3.6	26	74	5.6
600	30	4,413	.2	24	51	2.7
550	30	5,099	- 3.9	24	350	2.1
500	30	5,850	- 8.9	25	303	3.1
450	30	6,651	-14.9	29	296	5.6
400	30	7,538	-21.2	31	291	9.9
350	30	8,510	-28.1	25	291	14.8
300	30	9,597	-36.4	22	285	20.4
250	30	10,835	-46.1		291	26.0
200	30	12,281	-57.0		284	33.0
175	30	13,116	-62.1		281	33.8
150	30	14,058	-65.9		280	29.7
125	30	15,159	-68.0		281	16.3
100	28	16,496	-68.6		234	2.9
80	26	17,840	-67.2		88	10.9
70	25	18,647	-64.6		87	19.0
60	25	19,593	-62.0		92	25.1
50	24	20,729	-58.8		92	29.1
40	24	22,140	-55.8		89	30.5
30	23	23,986	-52.4		91	33.4
25	23	25,169	-51.0		91	32.6
20	21	26,628	-48.8		92	36.3
15	21	28,534	-45.2		88	33.4
10	20	31,266	-41.7		88	38.1
7	19	33,707	-37.5		92	39.2
5	13	36,042	-33.6			
4	5	37,601	-31.9			

LITTLE ROCK, ARK. 1005 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	20.4	90	320	.6
1000	30	125	21.0	86	206	1.4
950	30	571	22.4	68	196	5.2
900	30	1,042	19.6	70	211	5.4
850	30	1,533	16.4	72	227	5.6
800	30	2,047	13.3	63	242	5.6
750	30	2,583	10.4	51	262	4.5
700	30	3,160	7.0	46	292	4.3
650	30	3,760	3.4	46	296	3.5
600	30	4,411	- .3	39	291	3.7
550	30	5,094	- 4.5	34	297	4.1
500	30	5,847	- 9.[illegible]	31	297	5.6
450	30	6,645	-14.3		296	8.9
400	30	7,538	-20.5		297	9.1
350	30	8,512	-27.3		298	12.0
300	30	9,605	-35.3		301	14.8
250	30	10,850	-44.8		308	16.9
200	30	12,310	-54.6		315	21.2
175	30	13,156	-59.4		314	23.7
150	30	14,114	-62.5		315	23.1
125	30	15,231	-65.3		318	15.2
100	30	16,585	-66.3		339	10.7
80	29	17,947	-64.0		43	6.4
70	29	18,771	-62.1		65	8.4
60	29	19,729	-59.1		83	11.9
50	29	20,881	-55.9		87	13.4
40	28	22,311	-53.3		89	14.2
30	27	24,182	-49.4		88	15.3
25	27	25,383	-47.3		83	15.3
20	23	26,859	-45.3		83	16.3
15	20	28,796	-42.1		85	16.1
10	5	31,585	-38.0			

MCGRATH, ALASKA 995 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	103	8.5	81	186	3.7
1000	30	61				
950	30	480	7.6	71	218	3.7
900	30	929	4.7	72	212	4.1
850	30	1,393	1.5	75	216	5.6
800	30	1,878	- 2.0	77	258	4.7
750	30	2,384	- 5.3	77	227	5.4
700	30	2,928	- 8.6	76	216	3.7
650	30	3,497	-11.9	71	209	3.3
600	30	4,109	-15.8	64	200	1.7
550	30	4,754	-20.2	55	165	1.4
500	30	5,461	-25.0	50	54	1.7
450	30	6,206	-30.5	49	78	1.0
400	30	7,047	-36.7	46	95	1.4
350	30	7,959	-43.3		324	3.3
300	29	8,979	-49.0		306	5.2
250	29	10,176	-47.9		272	8.4
200	29	11,660	-44.4		237	7.8
175	29	12,556	-44.1		226	5.4
150	29	13,589	-44.4		212	5.4
125	29	14,809	-45.1		188	5.1
100	29	16,296	-45.6		162	4.7
80	29	17,782	-45.8		164	4.3
70	29	18,660	-45.9		152	4.5
60	29	19,697	-46.0		124	4.9
50	29	20,909	-46.0		119	5.8
40	29	22,396	-45.4		100	8.2
30	28	24,315	-44.4		95	10.7
25	28	25,539	-43.2		94	14.0
20	28	27,047	-41.6		93	15.9
15	25	29,021	-39.0		89	18.5
10	12	31,798	-35.5			

MAJURO, MARSHALL IS. 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	27.1	83	94	5.4
1000	30	95	26.5	82	90	6.2
950	30	543	23.6	81	89	8.0
900	30	1,020	20.7	80	92	10.3
850	30	1,514	17.8	80	88	10.1
800	30	2,033	15.5	76	86	9.9
750	30	2,579	12.9	72	88	10.5
700	30	3,158	10.0	69	87	12.0
650	30	3,772	6.6	66	83	11.7
600	30	4,427	2.9	65	88	11.3
550	30	5,119	- 1.1	62	90	10.7
500	30	5,883	- 5.3	57	90	9.9
450	30	6,699	-10.3	59	92	8.5
400	30	7,605	-15.8	52	101	5.6
350	30	8,598	-22.6	45	101	3.7
300	30	9,711	-31.1	43	118	2.7
250	30	10,976	-41.3		135	2.9
200	30	12,452	-53.7		259	.8
175	30	13,296	-61.0		253	1.7
150	30	14,236	-68.6		272	5.4
125	30	15,308	-76.0		262	7.6
100	29	16,583	-78.6		245	3.5
80	29	17,868	-73.9		92	10.1
70	29	18,652	-70.5		85	22.2
60	29	19,577	-65.7		85	37.3
50	29	20,696	-61.3		87	49.4
40	29	22,099	-55.9		89	54.6
30	29	23,950	-51.3		87	51.1
25	28	25,142	-48.7		88	33.4
20	24	26,623	-45.4		98	11.5
15	17	28,546	-42.9		41	1.4

MEDFORD, OREG. 970 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	401	10.7	82	293	2.1
1000	30	143				
950	30	578	12.3	71	292	3.9
900	30	1,027	10.5	72	317	4.5
850	30	1,502	7.7	74	333	4.1
800	30	2,000	5.9	69	341	4.5
750	30	2,523	3.3	60	326	5.6
700	30	3,084	.4	48	319	9.1
650	30	3,671	- 2.9	41	319	11.3
600	30	4,305	- 6.4		318	12.6
550	30	4,978	-10.3		321	15.2
500	30	5,709	-15.3		320	17.9
450	30	6,490	-20.8		321	20.4
400	30	7,358	-27.1		314	21.4
350	30	8,308	-34.1		305	23.7
300	30	9,370	-41.7		312	28.4
250	30	10,585	-49.3		312	31.3
200	30	12,033	-53.1		301	25.1
175	30	12,892	-54.1		287	21.4
150	30	13,882	-54.1		273	18.8
125	30	15,048	-55.2		270	14.2
100	30	16,468	-56.5		246	11.3
80	30	17,886	-56.2		219	4.5
70	30	18,735	-56.0		174	3.3
60	30	19,715	-55.5		125	4.3
50	30	20,880	-54.4		86	7.6
40	30	22,314	-52.7		85	10.7
30	30	24,182	-49.9		82	12.8
25	30	25,380	-47.6		88	11.7
20	30	26,861	-45.0		82	11.1
15	28	28,794	-41.8		74	12.8
10	25	31,577	-37.2		81	15.0
7	24	34,059	-32.8		84	14.2
5	20	36,432	-27.8			

MERIDA, MEXICO 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	24.0	91	103	7.2
1000	30	127	24.2	88	112	11.1
950	30	577	23.0	79	131	18.8
900	30	1,048	21.2	65	129	17.5
850	30	1,542	19.1	54	118	12.6
800	30	2,061	15.8	57	111	8.5
750	30	2,597	12.3	58	125	6.6
700	30	3,183	8.7	58	140	5.6
650	30	3,784	5.1	51	143	4.7
600	30	4,443	1.7	39	106	4.9
550	30	5,127	- 2.1	37	89	3.5
500	30	5,892	- 6.4	38	51	5.1
450	30	6,698	-11.6	35	16	3.5
400	30	7,604	-17.5		2	5.8
350	30	8,589	-24.6		340	8.7
300	30	9,692	-32.9		327	14.8
250	30	10,948	-42.9		323	18.5
200	30	12,414	-54.3		324	20.8
175	30	13,257	-60.3		329	17.1
150	30	14,202	-66.5		333	18.7
125	30	15,290	-71.5		356	19.0
100	30	16,600	-72.5		35	16.3
80	30	17,925	-68.4		74	18.8
70	30	18,734	-65.1		84	23.5
60	30	19,679	-61.2		89	25.1
50	30	20,821	-57.0		85	30.9
40	30	22,243	-54.3		90	34.4
30	27	24,103	-50.6		89	33.0
25	26	25,295	-49.2		86	32.8
20	22	26,768	-46.7		82	38.3
15	8	28,713	-43.7			

MIAMI, FLA. 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	24.4	90	80	1.0
1000	30	141	25.1	78	135	2.1
950	30	589	22.2	78	163	6.2
900	30	1,059	19.2	77	168	5.4
850	30	1,550	16.4	71	177	5.2
800	30	2,064	13.7	63	182	6.0
750	30	2,602	10.7	58	191	5.6
700	30	3,178	7.2	56	192	6.2
650	30	3,778	3.6	51	191	5.6
600	30	4,431	- .2	49	211	4.7
550	30	5,112	- 4.1	43	237	4.1
500	30	5,870	- 8.5	39	267	3.1
450	30	6,672	-13.7	33	274	2.9
400	30	7,566	-19.8	32	281	3.7
350	30	8,543	-26.8		272	3.7
300	30	9,638	-34.9		248	4.3
250	30	10,885	-44.9		217	3.1
200	30	12,340	-56.2		209	4.5
175	30	13,177	-61.8		256	2.3
150	30	14,121	-66.8		327	4.9
125	30	15,215	-69.0		354	8.9
100	30	16,550	-68.4		32	8.2
80	30	17,897	-65.3		77	14.2
70	30	18,724	-62.1		82	16.9
60	30	19,676	-59.5		88	19.8
50	30	20,826	-56.3		92	25.6
40	30	22,254	-53.3		99	27.2
30	29	24,124	-49.9		90	27.2
25	29	25,321	-48.0		86	30.3
20	27	26,809	-44.9		85	33.6
15	27	28,747	-41.0		85	36.5
10	25	31,536	-35.5		89	43.5
7	19	34,045	-30.7		90	43.7
5	7	36,441	-25.3			

MIDLAND, TEXAS * 913 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	874	20.2	79	154	6.2
1000	30	79				
950	30	530				
900	30	1,000	21.0	67	162	11.1
850	30	1,495	19.9	57	184	20.8
800	30	2,016	18.0	47	194	15.2
750	30	2,564	14.4	43	204	7.8
700	30	3,144	10.4	42	217	4.7
650	30	3,753	6.0	38	249	4.7
600	30	4,407	1.3	38	269	6.8
550	30	5,094	- 4.0	42	271	9.3
500	30	5,847	- 8.9	38	266	11.7
450	30	6,652	-14.2	29	257	11.7
400	30	7,539	-20.1	29	260	16.1
350	30	8,515	-27.1	32	259	19.2
300	30	9,608	-35.0	27	258	26.2
250	30	10,857	-43.8		260	32.4
200	30	12,324	-53.7		264	35.9
175	30	13,174	-58.6		263	38.9
150	29	14,127	-63.6		259	33.4
125	29	15,234	-68.2		256	24.5
100	28	16,571	-68.9		226	7.0
80	28	17,914	-65.9		104	6.0
70	28	18,738	-63.1		94	9.9
60	28	19,684	-60.2		94	13.0
50	28	20,828	-57.5		89	15.2
40	27	22,244	-54.1		88	17.5
30	26	24,098	-50.7		87	17.9
25	26	25,290	-49.0		87	18.1
20	24	26,770	-45.8		89	21.0
15	23	28,700	-42.6		85	22.0
10	22	31,467	-37.8		83	26.8
7	20	33,963	-33.6		96	27.4
5	12	36,346	-29.1			

MONTGOMERY, ALA. 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	61	21.8	91		.0
1000	30	135	22.3	86	151	.8
950	30	585	22.4	70	207	2.5
900	30	1,052	19.6	70	239	4.7
850	30	1,542	16.3	69	250	6.2
800	30	2,056	13.0	68	259	6.4
750	30	2,599	9.8	64	269	6.2
700	30	3,166	6.5	59	269	6.8
650	30	3,772	3.1	56	273	7.2
600	30	4,416	- .6	52	267	8.2
550	30	5,104	- 4.5	42	273	9.7
500	30	5,852	- 8.7	44	279	11.5
450	30	6,662	-14.1	38	279	12.6
400	30	7,546	-19.8	33	279	14.2
350	30	8,523	-26.7		276	15.0
300	30	9,618	-34.8		280	16.3
250	30	10,866	-44.5		291	17.3
200	30	12,325	-54.9		293	20.6
175	30	13,170	-59.2		305	23.1
150	30	14,129	-62.6		308	20.6
125	30	15,245	-65.8		313	17.1
100	30	16,599	-66.0		340	9.3
80	30	17,960	-63.5		52	8.0
70	30	18,787	-61.7		69	9.9
60	30	19,744	-59.0		75	11.3
50	30	20,896	-56.1		91	14.6
40	30	22,325	-52.6		90	14.8
30	29	24,201	-49.1		87	16.9
25	28	25,402	-47.5		85	19.0
20	23	26,878	-44.9		85	19.4
15	16	28,810	-42.4		77	21.4
10	6	31,594	-37.5			

NANTUCKET, MASS. 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	14	15.8	86	242	2.7
1000	30	124	17.1	78	231	5.2
950	30	560	16.2	63	268	8.2
900	30	1,021	14.6	57	278	9.7
850	30	1,503	12.0	55	280	10.9
800	30	2,008	9.3	51	281	12.4
750	30	2,540	6.3	50	284	14.0
700	30	3,104	3.2	46	286	15.7
650	30	3,695	.1	40	286	18.1
600	30	4,340	- 3.5	35	282	21.2
550	30	5,016	- 7.3	34	282	21.6
500	30	5,759	-12.2	34	276	23.5
450	30	6,552	-17.6		279	27.4
400	30	7,430	-23.5		276	29.9
350	30	8,393	-30.4		275	32.4
300	30	9,470	-38.7		273	40.0
250	30	10,697	-48.0		274	41.6
200	30	12,142	-55.8		279	40.8
175	30	12,987	-58.2		279	34.6
150	30	13,955	-59.1		280	28.2
125	30	15,098	-59.1		285	22.7
100	30	16,496	-59.4		300	15.5
80	30	17,897	-58.0		315	6.6
70	30	18,744	-56.4		349	2.9
60	30	19,723	-54.4		66	4.7
50	30	20,895	-53.1		83	7.6
40	30	22,338	-51.4		85	9.3
30	29	24,213	-48.5		86	13.4
25	29	25,418	-46.3		[illegible]	12.6
20	29	26,908	-43.8		89	12.2
15	29	28,856	-39.9		86	13.0
10	28	31,663	-34.4		94	12.4
7	23	34,185	-29.1		92	14.8
5	13	36,611	-23.8			

NASHVILLE, TENN. 995 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	177	19.1	93	83	.8
1000	30	134				
950	30	576	20.5	72	268	3.9
900	30	1,044	18.0	69	290	3.7
850	30	1,532	14.9	68	335	5.1
800	30	2,043	11.9	66	316	5.6
750	30	2,580	8.9	61	305	7.0
700	30	3,150	5.7	57	312	7.4
650	30	3,750	2.2	52	310	8.0
600	30	4,395	- 1.7	49	319	9.9
550	30	5,076	- 5.5	41	328	8.4
500	30	5,825	- 9.9	34	318	10.1
450	30	6,624	-14.9	35	307	11.3
400	30	7,512	-20.9	37	311	11.5
350	30	8,484	-28.1	38	313	15.7
300	30	9,573	-36.3	37	293	20.8
250	30	10,812	-46.0		302	23.5
200	29	12,265	-55.9		306	31.1
175	28	13,107	-59.6		303	32.8
150	28	14,066	-61.6		305	29.9
125	28	15,190	-63.2		305	20.2
100	28	16,561	-63.4		321	8.0
80	28	17,933	-62.2		20	8.0
70	28	18,766	-60.7		49	8.5
60	28	19,723	-58.5		69	11.7
50	28	20,876	-55.6		85	13.6
40	27	22,311	-52.7		96	13.8
30	26	24,181	-49.9		87	16.1
25	26	25,378	-47.6		86	17.3
20	26	26,859	-45.3		86	19.0
15	25	28,795	-41.8		83	21.2
10	23	31,572	-37.6		88	22.2
7	23	34,054	-33.9		86	27.4
5	17	36,445	-29.5			

N. Y. INT. AP. IDLEWILD 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	18.7	78	296	2.9
1000	30	129	18.4	72	305	3.5
950	30	567	17.3	59	304	4.7
900	30	1,029	15.0	61	280	5.8
850	30	1,512	12.1	61	274	9.1
800	30	2,018	9.4	56	276	10.9
750	30	2,552	6.5	51	276	11.9
700	30	3,115	3.6	43	280	11.9
650	30	3,711	.3	40	281	15.0
600	30	4,352	- 3.2		278	16.3
550	30	5,032	- 6.9		271	20.4
500	30	5,775	-11.5		270	22.3
450	30	6,573	-16.7		273	24.1
400	30	7,450	-22.8		273	27.0
350	30	8,415	-29.8		271	30.3
300	30	9,495	-38.3		273	32.4
250	30	10,725	-47.3		274	37.5
200	30	12,172	-55.5		279	34.6
175	30	13,018	-57.7		278	31.3
150	30	13,988	-58.6		285	23.7
125	30	15,132	-59.3		289	21.2
100	30	16,528	-59.5		299	13.2
80	30	17,929	-58.1		326	8.2
70	30	18,780	-56.8		358	4.9
60	30	19,754	-55.1		60	4.7
50	30	20,923	-53.3		79	8.9
40	30	22,368	-50.9		88	9.9
30	30	24,252	-48.0		86	13.0
25	28	25,454	-46.4		85	13.0
20	21	26,938	-43.9		86	12.2
15	8	28,844	-41.2			

NOME, ALASKA 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	7	4.4	85	333	3.3
1000	29	58			358	3.9
950	29	479	5.0	69	61	2.9
900	29	917	2.8	68	137	2.1
850	29	1,378	.2	67	152	1.9
800	29	1,862	- 2.4	65	112	1.7
750	29	2,371	- 5.3	60	98	1.4
700	29	2,911	- 8.4	57	103	1.0
650	29	3,479	-11.9	58	115	1.9
600	29	4,090	-15.9	54	156	1.4
550	29	4,735	-20.6	49	189	1.4
500	29	5,438	-25.6	45	225	3.5
450	29	6,186	-31.1	44	198	3.7
400	29	7,019	-37.1	43	223	4.9
350	29	7,929	-43.6		234	3.7
300	29	8,951	-49.5		254	.8
250	29	10,140	-49.5		284	2.7
200	29	11,620	-44.6		232	5.1
175	29	12,515	-44.3		211	4.9
150	29	13,548	-44.3		200	4.3
125	29	14,768	-45.0		184	4.7
100	28	16,258	-45.5		167	4.7
80	27	17,745	-45.4		151	5.2
70	27	18,637	-45.5		147	5.1
60	27	19,662	-45.7		132	5.2
50	27	20,875	-46.0		106	6.6
40	27	22,359	-45.5		98	8.9
30	27	24,282	-44.0		96	11.1
25	27	25,508	-43.1		96	12.8
20	26	27,009	-41.4		92	15.7
15	24	28,968	-38.5		93	17.9
10	11	31,763	-34.6			

NORFOLK, VA. 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	9	19.7	86	221	2.5
1000	30	132	20.1	77	248	3.3
950	30	568	18.9	68	297	3.7
900	30	1,038	16.2	63	292	3.3
850	30	1,523	13.7	54	282	4.1
800	30	2,032	10.7	55	266	7.0
750	30	2,567	7.7	58	259	11.9
700	30	3,134	5.1	53	265	13.2
650	30	3,730	2.1	47	269	13.6
600	30	4,379	- 1.4	43	267	15.2
550	30	5,058	- 5.4	39	267	16.9
500	30	5,809	-10.1	37	263	17.1
450	30	6,609	-15.4	35	265	21.6
400	30	7,493	-21.7	36	265	22.7
350	30	8,463	-28.5	34	261	25.6
300	30	9,549	-36.8		259	28.2
250	30	10,784	-46.4		268	32.3
200	30	12,230	-56.7		272	35.2
175	30	13,068	-60.5		275	32.6
150	30	14,023	-61.8		277	26.0
125	30	15,150	-62.2		277	16.1
100	29	16,530	-61.5		299	9.1
80	29	17,913	-60.5		10	5.1
70	28	18,750	-59.2		59	6.4
60	28	19,720	-56.7		80	9.5
50	28	20,885	-53.9		85	12.4
40	28	22,327	-50.9		89	13.4
30	25	24,210	-47.7		90	15.0
25	24	25,420	-45.3		85	16.7
20	18	26,917	-42.5		90	15.9
15	9	28,859	-40.2			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1963

Standard pressure surface (mb)	NORTH PLATTE, NEBR. 913 MB						OAKLAND, CALIF. * 1013 MB						OKLAHOMA CITY, OKLA. 967 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	848	16.6	83	132	3.1	30	6	12.7	83	295	4.1	29	392	20.5	86	142	6.4
1000	30	64					30	111	12.0	83	283	4.7	29	103				
950	30	508					30	543	12.0	71	280	5.8	29	548	22.2	73	171	11.5
900	30	973	18.1	77	151	7.6	30	998	15.5	40	311	7.4	29	1,019	21.4	63	200	17.1
850	30	1,464	18.1	61	193	17.5	30	1,481	13.8	34	329	8.7	29	1,513	18.5	64	212	14.6
800	30	1,983	16.7	49	212	16.7	30	1,989	10.8	36	331	8.5	29	2,031	15.5	59	219	10.9
750	30	2,526	13.4	45	215	14.8	30	2,518	7.6	33	331	8.5	29	2,573	12.3	47	215	8.7
700	30	3,106	9.5	42	211	14.4	30	3,089	4.4	30	327	10.9	29	3,152	8.7	44	221	7.4
650	30	3,709	5.1	42	221	12.2	30	3,684	.8	26	320	12.8	29	3,752	4.6	45	230	6.6
600	30	4,364	.1	42	231	12.6	30	4,327	- 3.1	24	316	15.3	29	4,408	- .1	44	239	6.6
550	30	5,046	- 5.4	45	235	11.5	30	5,001	- 7.6	25	316	18.5	29	5,090	- 4.5	39	248	7.6
500	30	5,796	-10.7	43	244	12.0	30	5,746	-12.5	24	314	20.6	29	5,844	- 9.1		250	9.5
450	30	6,594	-16.3	37	243	14.6	30	6,535	-18.3	22	312	24.1	29	6,646	-14.6		265	11.5
400	30	7,474	-22.6		245	18.7	30	7,412	-24.7	23	312	27.6	29	7,534	-20.6		265	12.2
350	30	8,440	-29.9		245	21.6	30	8,369	-31.9	25	311	30.9	29	8,508	-27.6		268	14.4
300	30	9,519	-38.4		243	26.4	30	9,440	-40.1	25	312	34.2	29	9,599	-35.7		267	20.8
250	30	10,749	-47.6		241	29.1	29	10,665	-48.4		296	36.1	29	10,842	-45.0		260	24.9
200	30	12,197	-54.2		239	35.4	29	12,110	-54.7		293	35.8	28	12,298	-54.0		273	35.2
175	30	13,068	-57.2		245	39.2	29	12,962	-55.4		280	33.8	28	13,147	-58.1		277	29.5
150	30	14,018	-59.1		251	31.5	29	13,943	-56.3		271	28.8	28	14,108	-62.5		277	27.6
125	30	15,155	-61.2		254	22.7	28	15,096	-58.6		267	21.4	28	15,225	-65.5		279	18.8
100	30	16,539	-61.3		244	11.9	28	16,492	-60.2		257	8.9	28	16,577	-66.4		287	7.4
80	30	17,927	-60.3		246	1.6	28	17,888	-59.2		221	3.3	28	17,935	-63.9		117	3.1
70	30	18,766	-59.0		91	2.5	28	18,729	-58.1		143	1.9	28	18,759	-61.8		85	6.4
60	30	19,733	-57.4		85	4.9	28	19,700	-57.0		81	6.6	28	19,717	-58.9		88	11.1
50	30	20,893	-54.8		88	8.0	27	20,858	-56.1		84	11.3	28	20,869	-56.0		88	14.6
40	29	22,332	-52.2		86	9.5	27	22,284	-53.8		82	11.1	27	22,295	-53.8		89	14.4
30	28	24,206	-49.4		85	10.9	27	24,144	-50.9		83	14.8	27	24,159	-49.8		91	14.2
25	28	25,406	-47.8		84	12.4	27	25,336	-48.9		79	15.0	26	25,352	-47.7		87	14.8
20	28	26,887	-45.4		87	13.2	27	26,808	-46.8		87	15.5	22	26,842	-45.2		78	15.0
15	28	28,819	-42.7		88	13.6	26	28,734	-42.6		87	16.7	11	28,770	-43.0		79	20.0
10	26	31,591	-36.8		82	14.6	23	31,504	-37.6		86	18.7						
7	24	34,091	-32.7		96	16.9	22	33,995	-34.0		82	20.4						
5	23	36,468	-28.2				12	36,368	-30.2									

Standard pressure surface (mb)	OLYMPIA, WASH. 1010 MB						OMAHA, NEBR. 965 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	58	8.8	92	195	4.7	30	403	18.9	83	151	4.9
1000	30	144	10.5	83	201	5.2	30	98				
950	30	574	10.3	75	258	6.0	30	542	19.6	74	175	10.3
900	30	1,021	8.5	67	284	6.6	30	1,009	19.8	62	211	18.3
850	30	1,491	6.4	65	284	6.4	30	1,500	17.5	54	232	15.3
800	30	1,987	4.1	60	293	8.0	30	2,016	14.6	52	237	14.0
750	30	2,507	1.7	51	286	9.7	30	2,554	11.0	53	233	13.0
700	30	3,063	- 1.1	50	288	11.1	30	3,131	7.0	52	237	12.2
650	30	3,647	- 4.2	43	278	13.4	30	3,730	2.9	49	246	10.5
600	30	4,278	- 8.0	41	277	14.4	29	4,377	- 1.5	43	252	9.9
550	30	4,944	-11.9	36	277	14.2	29	5,054	- 6.1	39	260	11.9
500	30	5,673	-16.6	37	285	16.9	29	5,805	-10.9		263	13.8
450	30	6,449	-22.2	42	283	18.3	29	6,602	-16.0		267	12.8
400	30	7,313	-28.2	43	285	18.7	29	7,486	-21.9		266	17.1
350	30	8,257	-35.2	40	292	20.2	29	8,456	-28.9		267	20.6
300	30	9,314	-43.0		298	23.3	29	9,540	-37.3		264	23.1
250	30	10,523	-49.6		300	29.3	29	10,775	-47.0		258	27.2
200	30	11,969	-52.7		291	25.6	29	12,222	-55.7		263	33.8
175	30	12,833	-51.7		281	21.0	29	13,068	-58.3		273	35.0
150	30	13,832	-52.4		271	16.3	29	14,035	-59.3		277	28.6
125	30	15,009	-52.9		257	12.6	29	15,173	-60.5		274	18.8
100	30	16,445	-53.8		241	8.4	29	16,557	-61.7		270	12.6
80	30	17,879	-53.8		214	5.4	29	17,942	-60.7		307	3.5
70	30	18,739	-53.4		215	3.3	29	18,776	-59.4		354	5.6
60	30	19,731	-53.1		118	1.6	29	19,745	-56.8		81	6.8
50	30	20,906	-52.6		82	5.1	29	20,907	-54.6		83	10.9
40	30	22,352	-51.4		85	6.8	28	22,342	-52.1		96	12.6
30	30	24,227	-48.9		87	8.0	28	24,216	-49.8		91	13.0
25	28	25,426	-47.1		79	8.2	27	25,410	-47.4		94	13.0
20	23	26,897	-45.0		75	9.5	25	26,900	-45.1		88	14.6
16	28,820	-41.6			82	11.5	17	28,846	-41.8		92	14.2
							5	31,604	-38.6			

Standard pressure surface (mb)	PEORIA, ILL. 992 MB						PITTSBURGH, PA. 975 MB						PONAPE, CAROLINE IS. 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	200	16.8	81	135	1.4	30	353	14.6	89	247	.8	30	39	24.5	94	138	2.9
1000	30	134					30	136					30	83	25.0	91	144	2.5
950	30	579	20.4	60	235	6.0	30	571	16.8	70	256	3.3	30	530	23.8	83	86	.6
900	30	1,042	17.8	57	262	8.2	30	1,035	15.0	65	283	8.4	30	1,008	21.2	82	77	1.0
850	30	1,530	15.0	56	269	9.9	30	1,517	11.8	65	300	9.1	30	1,503	18.5	80	88	2.7
800	30	2,041	12.1	51	278	9.5	30	2,023	8.8	63	303	10.1	30	2,023	15.8	78	86	4.1
750	30	2,573	9.2	42	278	9.7	30	2,553	6.4	50	299	10.7	30	2,564	13.1	76	94	5.2
700	30	3,148	6.3	34	284	10.9	30	3,119	3.8	47	290	12.0	30	3,149	10.0	72	93	7.0
650	30	3,747	2.8	35	292	12.0	30	3,718	.6	45	291	13.6	30	3,757	6.5	72	98	9.1
600	30	4,395	- 1.3		294	11.9	30	4,358	- 2.7	38	295	14.8	30	4,417	2.7	72	95	11.7
550	30	5,076	- 5.5		290	12.2	30	5,037	- 6.6		297	15.7	30	5,109	- 1.0	73	97	11.5
500	30	5,824	-10.3		291	12.6	30	5,783	-11.1		294	18.1	29	5,874	- 5.4	70	99	11.5
450	30	6,620	-15.9		292	13.2	30	6,578	-16.6		291	18.5	29	6,689	-10.2	64	87	10.5
400	30	7,504	-22.0		294	15.7	30	7,462	-22.6		288	20.6	29	7,595	-15.6	55	85	9.7
350	30	8,473	-28.9		296	18.8	30	8,427	-29.8		291	21.8	29	8,589	-22.6	46	97	7.4
300	30	9,557	-37.0		300	23.7	30	9,508	-38.1		293	22.7	29	9,704	-30.5	44	108	7.8
250	30	10,791	-46.9		298	28.8	30	10,739	-47.5		285	25.5	29	10,973	-41.0		111	6.0
200	30	12,237	-55.9		298	32.3	30	12,186	-55.4		289	33.4	29	12,449	-53.7		93	6.6
175	29	13,084	-59.1		297	33.8	29	13,031	-57.7		288	27.2	29	13,294	-60.9		108	3.7
150	29	14,047	-60.2		300	28.8	29	14,002	-58.4		292	24.7	29	14,235	-68.5			.0
125	28	15,183	-60.5		300	18.1	29	15,146	-59.5		295	17.3	28	15,306	-75.4		264	1.0
100	28	16,569	-61.2		309	12.0	29	16,540	-59.8		302	13.0	28	16,583	-79.0		249	3.3
80	27	17,958	-60.1		348	5.1	28	17,930	-59.2		342	5.8	27	17,864	-74.4		92	11.5
70	27	18,799	-58.7		42	5.6	28	18,772	-57.7		30	5.6	26	18,647	-71.0		86	21.0
60	27	19,767	-56.3		72	8.0	28	19,747	-55.5		57	8.2	25	19,568	-66.9		87	37.3
50	27	20,932	-53.7		83	10.9	28	20,915	-53.2		76	11.3	24	20,681	-62.3		88	48.6
40	27	22,373	-51.8		82	12.2	28	22,359	-51.3		82	11.9	22	22,071	-57.3		87	57.1
30	27	24,251	-48.7		88	13.8	28	24,239	-48.7		85	13.0	22	23,917	-50.9		88	54.6
25	27	25,455	-46.8		79	13.0	27	25,439	-46.7		83	13.8	21	25,105	-49.1		86	38.1
20	25	26,943	-44.3		87	13.8	27	26,927	-44.3		79	12.2	19	26,582	-45.7		80	21.6
15	24	28,889	-41.2		82	16.1	27	28,870	-41.0		89	15.9	18	28,512	-43.4		96	2.7
10	22	31,665	-35.9		83	14.0	25	31,652	-36.6		84	15.5	11	31,256	-42.6			
7	21	34,169	-32.3		87	18.3	23	34,145	-32.2		91	15.0						
5	15	36,562	-27.2				21	36,518	-28.4									

Standard pressure surface (mb)	PORTLAND, ME. 1011 MB						RAPID CITY, S. DAK. 902 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	20	15.9	79	271	1.9	30	966	14.5	82	307	2.1
1000	30	119	16.4	69	293	3.5	30	76				
950	30	553	16.0	60	300	7.2	30	515				
900	30	1,010	13.7	58	297	8.9	30	980			279	1.4
850	30	1,490	11.0	55	303	9.7	30	1,467	15.8	60	223	4.3
800	30	1,993	8.3	52	301	11.3	30	1,981	13.7	56	213	7.0
750	30	2,523	5.2	51	294	14.0	30	2,519	10.8	52	226	8.9
700	30	3,085	2.2	48	292	15.9	30	3,094	7.3	47	233	12.6
650	30	3,675	- 1.0	44	290	17.3	30	3,692	3.2	46	241	13.2
600	30	4,315	- 4.5	42	288	21.0	30	4,343	- 1.7	47	245	17.5
550	30	4,990	- 8.6	33	283	20.6	30	5,021	- 6.8	45	245	21.6
500	30	5,729	-13.3	32	286	22.5	30	5,766	-11.7	42	241	22.3
450	30	6,516	-18.6		284	24.3	30	6,558	-17.4	39	238	24.3
400	30	7,392	-25.0		288	26.4	30	7,437	-23.4		234	25.1
350	30	8,350	-31.9		288	30.3	30	8,399	-31.1		231	27.2
300	30	9,422	-39.7		287	33.4	30	9,472	-39.6		233	30.5
250	30	10,646	-47.9		289	36.5	30	10,693	-49.1		226	34.2
200	30	12,097	-54.0		292	33.4	30	12,130	-56.0		230	39.6
175	30	12,949	-56.3		291	29.9	30	12,979	-55.6		233	40.6
150	30	13,926	-56.8		287	26.4	30	13,960	-56.2		238	31.7
125	30	15,081	-57.0		289	20.6	30	15,114	-58.1		244	20.8
100	30	16,493	-57.1		295	15.5	30	16,514	-59.0		242	11.1
80	30	17,909	-55.8		315	6.2	30	17,915	-58.5		223	4.7
70	30	18,768	-54.5		2	3.1	30	18,759	-57.4		160	2.7
60	30	19,753	-52.9		73	4.1	29	19,732	-55.5		81	4.1
50	30	20,933	-51.7		84	5.6	29	20,897	-54.4		79	8.4
40	26	22,380	-50.2		83	8.0	29	22,332	-52.2		81	11.9
30	27	24,260	-47.8		87	10.7	29	24,207	-49.0		87	13.8
25	20	25,467	-45.7		87	10.5	29	25,407	-47.4		86	14.2
20							26	26,883	-45.5		84	13.4
15	7	28,892	-39.9				15	28,809	-42.9		84	13.0

Standard pressure surface (mb)	ST. CLOUD, MINN. 975 MB						ST. PAUL IS., ALASKA 1007 MB						SALEM, OREG. 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	316	15.1	86	129	1.9	30	10	3.4	91	50	1.9	30	61	10.2	89	238	2.1
1000	30	99					30	62			93	4.1	30	150	11.3	81	264	2.9
950	30	540	17.4	75	191	8.0	30	479	1.6	87	101	4.5	30	576	10.2	76	329	5.6
900	30	998	16.3	68	229	11.1	30	913	.2	82	137	4.1	30	1,026	8.1	76	323	5.8
850	30	1,483	14.1	63	251	11.5	30	1,369	- 1.9	81	149	4.5	30	1,497	6.1	74	304	6.8
800	30	1,993	11.5	58	263	11.7	30	1,851	- 3.4	75	165	4.9	30	1,992	4.1	68	297	7.4
750	30	2,529	8.4	52	266	12.2	30	2,361	- 5.6	67	170	5.8	30	2,509	1.9	57	306	9.1
700	30	3,097	5.1	50	265	13.2	30	2,898	- 8.1	63	207	6.2	30	3,069	- .4	47	307	10.7
650	30	3,696	1.6	46	267	15.5	30	3,469	-11.1	62	214	6.6	30	3,654	- 3.8	45	308	12.0
600	29	4,339	- 2.5	42	273	17.3	30	4,081	-14.7	56	220	8.4	30	4,287	- 7.4	41	306	13.8
550	29	5,020	- 6.8	37	276	20.6	30	4,736	-18.5	51	234	9.3	30	4,954	-11.5	40	310	14.4
500	29	5,763	-11.3	37	276	22.5	30	5,440	-23.1	46	242	11.7	30	5,685	-16.2	38	304	16.1
450	29	6,555	-16.7		278	24.1	30	6,206	-28.4	44	244	11.1	30	6,465	-21.6	39	299	19.0
400	29	7,437	-23.1		280	27.0	30	7,039	-34.2	44	246	12.6	30	7,328	-27.9	39	301	21.8
350	29	8,402	-30.2		281	31.3	30	7,960	-40.9		249	14.8	30	8,274	-35.0		312	23.1
300	29	9,480	-38.7		279	31.5	30	8,994	-47.0		255	18.8	30	9,332	-42.4		311	28.4
250	29	10,707	-48.3		276	38.7	30	10,192	-50.1		252	22.2	30	10,544	-49.6		308	28.4
200	29	12,150	-55.3		274	41.6	30	11,658	-47.0		254	18.8	29	11,989	-52.8		295	23.9
175	29	12,998	-56.9		278	34.6	28	12,544	-46.7		252	15.9	29	12,851	-52.8		287	22.2
150	29	13,973	-57.3		277	28.4	28	13,565	-46.9		247	12.0	29	13,846	-52.9		272	17.7
125	29	15,125	-57.7		281	18.7	28	14,772	-47.2		244	10.1	29	15,018	-54.3		264	13.6
100	29	16,529	-58.6		281	11.7	28	16,246	-47.8		224	9.9	29	16,445	-54.7		246	8.9
80	29	17,935	-57.8		309	5.8	28	17,718	-47.8		195	6.4	29	17,872	-54.9		224	4.9
70	28	18,784	-56.9		19	3.3	28	18,610	-47.8		198	6.8	29	18,728	-54.6		188	2.3
60	28	19,759	-55.4		65	5.2	28	19,616	-48.0		182	5.2	29	19,714	-53.9		89	3.7
50	28	20,928	-53.2		80	5.8	28	20,817	-48.1		157	5.8	29	20,885	-53.5		83	7.0
40	28	22,373	-51.1		79	8.7	28	22,287	-47.9		115	3.7	29	22,325	-51.9		82	8.9
30	28	24,253	-48.9		85	12.0	25	24,178	-47.2		100	7.8	27	24,196	-49.7		88	12.4
25	28	25,456	-46.7		87	14.2	23	25,386	-46.1		98	9.9	27	25,395	-47.4		89	11.3
20	27	26,944	-44.6		86	13.8	20	26,874	-44.6		96	13.0	25	26,877	-45.1		74	12.2
15	23	28,868	-41.9		87	12.2	15	28,800	-42.1		98	16.9	14	28,796	-41.9		72	16.5
10	19	31,637	-36.6		84	13.8	5	31,644	-36.9									
7	15	34,147	-32.1		86	20.8												
5	10	36,535	-28.9															

Standard pressure surface (mb)	SALT LAKE CITY, UTAH 869 MB						SAN ANTONIO, TEXAS 985 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	27	1,288	11.3	74	155	4.7	30	243	23.2	90	155	3.9
1000	27	97					30	109				
950	27	530					30	556	21.4	87	171	12.0
900	27	996					30	1,026	19.4	76	175	15.5
850	27	1,476	14.2	62	160	5.1	30	1,517	17.4	66	171	13.4
800	27	1,987	12.1	55	169	5.2	30	2,034	15.7	51	172	11.5
750	27	2,525	8.5	57	178	4.9	30	2,578	13.1	45	177	9.7
700	27	3,091	4.6	58	198	8.5	30	3,157	10.1	43	168	3.5
650	27	3,691	.4	58	191	12.0	30	3,765	6.0	43	257	1.4
600	27	4,329	- 4.2	61	203	16.3	30	4,420	1.3	46	270	4.1
550	27	5,008	- 9.0	59	206	20.6	30	5,108	- 3.3	42	257	4.5
500	27	5,742	-13.6	50	209	22.3	30	5,863	- 7.9	40	248	6.0
450	27	6,533	-19.0	42	209	24.1	30	6,671	-12.9	36	251	6.8
400	27	7,403	-25.4	38	212	26.8	30	7,564	-18.8	37	265	10.1
350	27	8,357	-32.9		216	29.1	30	8,545	-25.9		269	12.6
300	27	9,422	-41.5		219	30.5	29	9,642	-34.2		274	18.3
250	27	10,635	-49.7		219	32.8	29	10,891	-44.0		280	22.2
200	27	12,077	-53.6		227	32.4	29	12,357	-53.8		282	26.6
175	27	12,936	-53.7		231	30.7	29	13,204	-59.1		285	26.8
150	27	13,924	-55.0		232	28.4	29	14,157	-64.7		288	20.0
125	27	15,086	-56.5		233	19.8	29	15,256	-69.9		291	12.8
100	27	16,493	-58.7		224	11.9	29	16,576	-71.1		35	.8
80	27	17,892	-58.8		189	3.1	29	17,909	-67.2		86	10.3
70	28	18,741	-57.8		132	2.1	27	18,725	-64.4		85	15.9
60	28	19,706	-56.5		99	5.1	27	19,670	-60.5		90	18.1
50	28	20,870	-55.1		85	7.6	27	20,816	-56.9		90	18.3
40	28	22,301	-53.4		82	9.5	27	22,239	-54.1		89	20.4
30	28	24,166	-50.0		88	9.9	27	24,098	-50.8		90	23.9
25	28	25,368	-47.7		87	12.8	26	25,288	-48.8		89	25.3
20	27	26,856	-45.1		87	14.2	23	26,765	-46.1		83	25.8
15	27	28,814	-42.7				14	28,692	-43.4		84	30.3

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1963

SAN DIEGO, CALIF. 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	124	15.0	88	201	1.9
1000	30	108				
950	30	541	13.3	81	213	2.3
900	30	996	13.5	64	287	3.3
850	30	1,479	13.6	51	296	7.4
800	30	1,989	12.5	36	280	8.9
750	30	2,522	10.4	30	272	10.7
700	30	3,099	7.4	27	270	12.0
650	30	3,698	4.1		268	14.4
600	30	4,352	.2		268	17.5
550	30	5,038	-4.3		260	18.7
500	30	5,789	-9.6		262	21.6
450	30	6,588	-15.8		261	24.7
400	30	7,472	-22.8		259	28.6
350	30	8,437	-29.9		258	34.8
300	30	9,519	-37.7		258	41.0
250	30	10,754	-45.9		255	47.2
200	30	12,213	-53.5		254	48.8
175	30	13,066	-56.8		250	47.6
150	30	14,035	-59.9		249	40.8
125	30	15,166	-63.1		246	29.9
100	30	16,533	-64.3		235	12.0
80	30	17,902	-62.6		150	3.9
70	30	18,731	-60.8		112	7.2
60	30	19,693	-58.3		98	11.3
50	30	20,846	-56.1		91	14.0
40	29	22,271	-53.6		84	14.6
30	29	24,134	-49.8		87	19.4
25	28	25,333	-47.5		93	19.6
20	25	26,814	-45.1		93	20.2
15	14	28,747	-41.9		87	22.5
10						
7						
5						

SAN JUAN, P. R. 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	25.7	85	105	5.1
1000	30	152	24.9	82	100	11.9
950	30	597	22.1	79	105	16.3
900	30	1,071	19.3	77	110	16.3
850	30	1,562	16.6	73	109	15.7
800	30	2,076	14.1	61	109	15.5
750	30	2,613	11.6	50	111	13.8
700	30	3,193	8.3	42	107	11.1
650	30	3,797	4.8	39	98	8.2
600	30	4,451	1.2	39	109	6.6
550	30	5,141	-2.5	35	97	5.2
500	30	5,897	-6.8		116	3.9
450	30	6,708	-11.9		95	2.9
400	30	7,604	-18.1		61	1.2
350	30	8,588	-25.2		305	1.4
300	30	9,689	-33.6		298	5.6
250	30	10,940	-43.7		290	9.1
200	30	12,401	-55.6		288	15.7
175	30	13,240	-61.7		294	19.4
150	30	14,180	-67.9		294	21.8
125	30	15,264	-71.6		281	10.1
100	29	16,574	-72.8		49	4.5
80	28	17,893	-68.1		87	15.9
70	28	18,713	-63.8		87	22.2
60	28	19,654	-61.1		89	29.9
50	28	20,793	-58.4		91	35.4
40	28	22,205	-55.7		94	39.2
30	28	24,053	-51.8		90	36.9
25	28	25,241	-49.4		89	38.9
20	28	26,712	-46.4		87	40.0
15	28	28,640	-42.0		89	35.6
10	25	31,420	-37.2		88	33.6
7	24	33,905	-33.3		88	35.9
5	20	36,284	-30.7			

SANTA MONICA, CALIF. 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	15.8	84	40	1.7
1000	30	108	15.4	84	52	.8
950	30	540	13.7	78	121	1.9
900	30	998	13.2	66	35	1.7
850	30	1,479	13.1	53	329	4.9
800	30	1,988	11.4	43	313	7.0
750	30	2,523	9.4	34	289	9.1
700	30	3,095	6.4	32	281	11.7
650	30	3,694	2.8		278	13.6
600	30	4,342	-.9		277	16.7
550	30	5,025	-5.5		273	17.9
500	30	5,771	-11.0		272	21.4
450	30	6,563	-17.2		273	23.9
400	30	7,444	-24.0		268	27.0
350	30	8,404	-31.5		266	31.1
300	30	9,478	-39.2		264	36.5
250	30	10,707	-46.7		262	41.6
200	30	12,163	-53.8		257	46.2
175	30	13,015	-56.3		252	45.1
150	29	13,985	-59.2		254	37.5
125	29	15,119	-62.4		252	28.6
100	29	16,491	-63.4		244	13.6
80	29	17,865	-62.1		184	3.3
70	29	18,701	-60.5		114	5.6
60	29	19,657	-58.6		96	9.1
50	29	20,809	-56.5		84	11.7
40	29	22,233	-53.9		87	13.0
30	29	24,094	-50.8		84	15.9
25	29	25,287	-48.8		90	18.5
20	29	26,763	-46.0		92	18.3
15	28	28,693	-43.1		88	20.0
10	19	31,447	-38.4		91	19.6
7	9	33,932	-35.7			
5						

SAULT STE. MARIE, MICH. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	11.1	89	11	1.4
1000	30	122				
950	30	555	15.2	65	298	3.1
900	30	1,012	13.3	59	287	6.0
850	30	1,492	11.1	57	294	8.4
800	30	1,995	8.4	54	292	9.7
750	30	2,527	5.6	50	290	11.5
700	30	3,088	2.8	42	293	13.2
650	30	3,680	-.6	40	293	15.0
600	30	4,320	-4.4	37	295	17.7
550	30	4,994	-8.7		295	18.7
500	30	5,733	-13.5		297	20.6
450	30	6,520	-18.9		298	22.9
400	30	7,394	-25.0		297	24.5
350	30	8,352	-32.1		294	27.0
300	30	9,423	-40.0		299	30.1
250	30	10,646	-47.9		299	34.6
200	30	12,099	-53.6		300	34.2
175	30	12,954	-55.4		300	31.9
150	30	13,937	-55.4		301	25.6
125	30	15,099	-56.1		304	18.8
100	30	16,514	-56.8		307	17.1
80	30	17,930	-56.0		324	10.5
70	30	18,784	-55.3		345	8.2
60	30	19,768	-53.8		23	6.6
50	30	20,943	-52.2		67	8.0
40	29	22,392	-50.6		72	10.1
30	29	24,277	-48.3		80	11.7
25	29	25,483	-46.3		84	12.2
20	29	26,973	-44.1		84	13.4
15	29	28,916	-41.2		74	13.4
10	29	31,704	-35.8		80	17.1
7	28	34,219	-30.8		88	20.6
5	23	36,627	-26.6			

SHEMYA, ALASKA 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	4.8	91	281	2.3
1000	30	85			290	3.7
950	30	500	2.6	84	264	3.9
900	30	939	.9	82	314	4.1
850	29	1,401	-.7	74	281	3.1
800	29	1,885	-2.3	73	303	2.7
750	29	2,395	-4.6	69	308	5.1
700	29	2,937	-7.0	60	300	5.8
650	29	3,508	-9.7	55	293	5.8
600	29	4,127	-13.1	46	285	6.2
550	29	4,781	-17.0	41	283	6.2
500	29	5,494	-21.9	40	288	8.4
450	29	6,253	-27.5	40	282	8.5
400	29	7,099	-33.6		281	9.3
350	29	8,022	-40.4		280	9.9
300	29	9,058	-46.4		265	12.0
250	29	10,260	-49.3		278	15.5
200	29	11,725	-47.6		275	20.8
175	29	12,608	-47.3		275	19.8
150	29	13,626	-47.9		270	16.5
125	29	14,825	-49.0		272	14.6
100	29	16,288	-49.6		272	9.7
80	28	17,744	-49.4		261	4.7
70	27	18,621	-48.9		237	2.1
60	27	19,629	-48.7		175	1.9
50	27	20,829	-48.5		124	2.7
40	26	22,296	-48.2		104	4.3
30	25	24,191	-47.4		100	7.6
25	25	25,399	-46.3		96	9.7
20	21	26,883	-44.8		86	11.5
15	12	28,792	-42.8		89	13.2
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SHREVEPORT, LA. * 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	22.5	87	169	2.5
1000	30	127	22.8	83	180	3.7
950	30	577	22.9	65	209	8.2
900	30	1,046	20.3	61	201	8.4
850	30	1,538	17.1	58	196	7.8
800	30	2,053	14.1	53	201	6.0
750	30	2,594	10.7	52	203	5.2
700	30	3,166	7.1	48	236	3.1
650	30	3,770	3.6	40	283	3.3
600	30	4,418	-.5	33	300	5.6
550	30	5,103	-4.5	29	298	7.4
500	30	5,853	-8.8	25	305	9.9
450	30	6,658	-14.2	29	295	12.2
400	30	7,546	-20.1	29	289	15.7
350	30	8,522	-26.9	26	290	17.1
300	30	9,617	-35.0	24	293	19.8
250	29	10,863	-44.1		287	23.3
200	28	12,327	-54.2		294	28.0
175	28	13,174	-58.9		295	25.1
150	28	14,133	-62.9		301	21.6
125	27	15,246	-67.1		303	19.0
100	27	16,586	-68.1		329	9.1
80	27	17,933	-65.5		49	7.8
70	27	18,758	-63.1		77	11.7
60	27	19,705	-60.1		87	14.6
50	27	20,851	-56.6		88	14.6
40	27	22,276	-53.3		87	14.8
30	27	24,139	-50.6		94	18.8
25	26	25,333	-48.2		87	21.2
20	25	26,811	-45.5		83	24.7
15	22	28,742	-42.1		87	26.4
10	18	31,503	-37.9		88	31.3
7	14	33,992	-32.9		88	28.4
5	6	36,405	-29.2			

SPOKANE, WASH. 929 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	722	11.2	70	184	4.7
1000	30	99				
950	30	532				
900	30	989	13.1	61	205	8.2
850	30	1,468	11.0	57	235	8.4
800	30	1,971	7.5	61	243	7.6
750	30	2,495	3.7	65	239	7.4
700	30	3,056	-.2	67	242	8.4
650	30	3,638	-3.9	63	239	10.1
600	30	4,273	-7.6	51	244	10.9
550	30	4,938	-11.5	47	245	12.4
500	30	5,670	-16.4	49	240	13.4
450	30	6,444	-21.7	44	240	13.8
400	30	7,310	-28.0	40	242	13.4
350	30	8,255	-35.3	38	245	13.8
300	30	9,310	-43.6		238	12.0
250	30	10,514	-50.7		252	16.5
200	30	11,962	-51.4		249	20.4
175	30	12,830	-50.5		244	18.7
150	30	13,835	-50.9		241	16.9
125	30	15,016	-52.6		234	13.8
100	30	16,454	-53.5		232	10.9
80	29	17,888	-53.4		224	5.6
70	29	18,747	-53.2		157	2.3
60	29	19,742	-52.8		98	3.7
50	28	20,923	-51.8		91	6.6
40	28	22,374	-50.6		86	9.1
30	28	24,258	-48.3		88	12.2
25	28	25,465	-46.2		80	13.6
20	24	26,951	-43.6		80	15.5
15	19	28,909	-39.6		90	16.1
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SWAN ISLAND, W. I. 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	26.9	83	102	9.7
1000	30	110	26.3	83	99	12.2
950	30	560	23.2	82	107	16.3
900	30	1,034	20.3	79	115	17.9
850	30	1,526	17.8	70	115	17.3
800	30	2,044	15.4	61	116	14.2
750	30	2,586	12.5	55	116	13.2
700	30	3,166	9.5	48	115	11.9
650	30	3,773	5.8	50	120	10.3
600	30	4,428	2.0	45	126	7.6
550	30	5,115	-2.2	43	139	4.9
500	30	5,877	-6.4	35	156	2.3
450	30	6,686	-11.4	31	143	1.7
400	30	7,586	-17.8	33		.0
350	30	8,572	-24.5		308	4.7
300	30	9,675	-33.2		293	8.5
250	30	10,929	-43.2		290	14.0
200	29	12,394	-54.8		289	19.4
175	29	13,235	-61.3		288	20.4
150	29	14,174	-68.4		292	17.1
125	29	15,251	-73.7		326	10.7
100	29	16,552	-73.2		45	11.5
80	29	17,866	-70.0		81	18.8
70	29	18,670	-67.0		89	24.3
60	29	19,609	-62.9		90	31.1
50	29	20,743	-59.0		89	38.9
40	29	22,154	-55.5		93	42.0
30	29	24,004	-51.7		94	40.8
25	29	25,192	-49.3		92	35.6
20	26	26,666	-46.3		92	36.3
15	15	28,591	-42.0		89	36.3
10	5	31,364	-38.7			
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TAMPA, FLA. 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	23.8	89	142	3.1
1000	30	144	24.1	82	156	4.5
950	30	594	21.9	74	201	5.8
900	30	1,061	19.0	71	207	6.4
850	30	1,551	16.1	69	206	6.4
800	30	2,065	13.3	64	200	5.6
750	30	2,605	10.3	60	200	6.2
700	30	3,178	7.0	56	198	5.6
650	30	3,783	3.4	54	215	4.9
600	30	4,429	-.2	49	238	5.1
550	30	5,116	-4.1	43	268	4.5
500	30	5,868	-8.6	41	275	4.9
450	30	6,674	-13.9	39	292	6.2
400	30	7,564	-19.9	38	289	5.8
350	30	8,541	-26.9	35	292	7.4
300	30	9,634	-35.1		298	8.2
250	30	10,879	-45.0		308	8.0
200	30	12,332	-56.3		317	8.0
175	30	13,169	-61.7		318	7.2
150	30	14,113	-65.9		3	8.4
125	30	15,210	-69.0		346	9.9
100	30	16,546	-67.8		32	10.3
80	30	17,895	-65.0		64	11.9
70	30	18,722	-62.5		79	14.4
60	30	19,670	-59.6		89	17.5
50	30	20,818	-56.3		94	18.5
40	30	22,246	-53.3		97	21.0
30	29	24,111	-49.7		87	22.5
25	26	25,304	-47.8		80	25.8
20	22	26,791	-45.7		83	26.2
15	12	28,726	-42.3			
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TATOOSH IS., WASH. * 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	10.5	92	201	6.4
1000	30	144	10.3	87	218	6.2
950	30	567	9.1	78	265	8.4
900	30	1,017	7.4	69	280	8.9
850	30	1,486	5.3	66	276	9.7
800	30	1,979	3.1	62	277	10.3
750	30	2,496	.6	56	283	11.5
700	30	3,051	-2.4	50	282	11.7
650	30	3,627	-5.4	48	284	12.6
600	30	4,260	-8.8	40	284	15.0
550	30	4,921	-12.8	44	284	17.9
500	30	5,649	-17.4	44	283	20.0
450	30	6,420	-22.5	43	279	19.4
400	30	7,286	-28.6	42	281	21.6
350	30	8,228	-35.7	41	281	23.9
300	30	9,282	-43.7		277	25.3
250	30	10,486	-50.4		269	31.7
200	30	11,928	-53.2		273	29.7
175	30	12,790	-52.1		268	25.1
150	30	13,788	-52.2		266	19.6
125	30	14,965	-53.2		258	14.8
100	30	16,399	-53.7		249	8.9
80	30	17,834	-53.4		244	5.2
70	30	18,693	-53.2		242	3.7
60	30	19,686	-53.1		150	1.7
50	30	20,863	-52.5		93	4.1
40	29	22,310	-51.6		84	7.4
30	29	24,183	-49.9		94	11.1
25	29	25,379	-48.3		86	12.2
20	29	26,855	-46.0		84	14.6
15	25	28,792	-42.2		83	17.7
10	23	31,563	-36.6		86	18.8
7	21	34,063	-31.4		84	22.0
5	9	36,489	-24.6			

TOPEKA, KANS. 981 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	269	20.2	88	158	6.0
1000	30	106				
950	30	549	21.2	74	191	13.2
900	30	1,020	20.1	67	212	17.3
850	30	1,512	17.4	62	223	13.8
800	30	2,027	14.0	59	229	12.4
750	30	2,566	10.9	47	230	9.9
700	30	3,142	7.2	48	227	8.7
650	30	3,744	3.2	46	232	6.8
600	30	4,392	-1.4	49	241	7.0
550	30	5,075	-5.9	48	253	9.1
500	30	5,821	-10.4	37	253	10.3
450	30	6,626	-15.4		255	10.1
400	30	7,507	-21.1		254	10.1
350	30	8,479	-28.1		262	13.4
300	30	9,569	-36.1		271	15.2
250	30	10,809	-45.9		274	22.3
200	30	12,263	-55.2		277	32.6
175	30	13,109	-58.6		279	31.9
150	29	14,069	-61.1		284	28.4
125	29	15,198	-62.6		284	19.8
100	29	16,572	-63.4		289	13.8
80	28	17,950	-62.1		4	1.4
70	27	18,780	-60.5		55	4.9
60	27	19,745	-57.7		77	9.1
50	27	20,902	-55.3		88	10.1
40	27	22,333	-53.0		89	12.6
30	27	24,202	-49.8		87	13.6
25	25	25,395	-47.8		90	12.2
20	22	26,874	-45.6		90	11.1
15	11	28,834	-42.3			
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TRUK, CAROLINE IS. 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2	26.0	89	73	.8
1000	30	87	26.2	86	94	.8
950	30	536	24.1	83	87	1.0
900	30	1,013	21.4	81	87	.8
850	30	1,509	18.6	80	89	1.4
800	30	2,028	15.9	76	109	1.9
750	30	2,573	13.3	73	101	3.3
700	30	3,155	10.1	70	98	5.2
650	30	3,767	6.5	68	105	5.6
600	30	4,422	2.6	73	106	8.5
550	30	5,120	-1.3	70	102	8.5
500	30	5,878	-5.3	65	97	7.6
450	30	6,696	-9.9	59	93	7.4
400	30	7,601	-15.4	52	90	5.8
350	29	8,596	-22.2	45	99	5.1
300	29	9,711	-30.5	40	113	5.2
250	29	10,979	-41.0		114	5.8
200	29	12,455	-53.6		101	8.5
175	29	13,301	-60.9		107	4.7
150	29	14,241	-68.8		112	4.3
125	29	15,312	-76.1			.0
100	27	16,589	-78.1		238	3.3
80	26	17,871	-75.0		100	9.9
70	26	18,653	-71.4		91	21.0
60	26	19,572	-67.4		91	34.0
50	23	20,684	-62.3		93	43.3
40	20	22,080	-56.7		94	51.3
30	20	23,928	-51.1		95	46.8
25	20	25,120	-48.5		93	37.1
20	19	26,599	-45.5		96	21.4
15	18	28,529	-42.8		102	8.4
10	14	31,270	-41.6		60	6.8
7	7	33,729	-38.4			
5	7	36,054	-36.4			

TUCSON, ARIZ. 921 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	789	19.5	24	148	5.8
1000	30	68				
950	30	512				
900	30	988	23.1	26	181	4.3
850	30	1,483	20.5	27	208	5.2
800	30	2,003	16.9	29	205	9.3
750	30	2,545	13.2	28	211	14.2
700	30	3,125	9.3	29	212	16.7
650	30	3,733	5.1	31	209	19.4
600	30	4,383	.8	26	210	19.8
550	30	5,069	-3.5		218	20.0
500	30	5,824	-8.9		225	22.2
450	30	6,625	-14.4		233	23.7
400	30	7,515	-21.0		237	29.3
350	30	8,487	-28.3		239	32.4
300	30	9,574	-36.2		242	38.3
250	30	10,816	-44.7		242	43.9
200	30	12,280	-53.5		239	50.9
175	30	13,130	-57.5		239	46.8
150	30	14,094	-61.9		242	39.6
125	30	15,211	-65.7		241	29.5
100	29	16,560	-66.6		233	14.2
80	29	17,918	-63.4		130	4.7
70	29	18,750	-61.1		109	10.1
60	29	19,706	-58.2		97	13.0
50	28	20,859	-55.7		95	13.8
40	28	22,289	-52.9		81	16.5
30	28	24,160	-49.4		87	21.0
25	28	25,361	-47.0		89	21.8
20	26	26,841	-44.0		88	23.3
15	24	28,789	-40.8		85	25.5
10	21	31,588	-34.8		87	26.0
7	11	34,094	-29.6			
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WAKE IS., PACIFIC AREA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	26.8	81	90	11.3
1000	30	127	25.8	81	92	13.6
950	30	577	22.6	81	99	15.3
900	30	1,049	19.5	80	103	14.0
850	30	1,540	16.7	75	106	12.8
800	30	2,056	14.4	67	104	11.7
750	30	2,594	11.9	59	97	9.7
700	30	3,175	9.1	44	98	8.5
650	30	3,782	5.7	39	93	7.6
600	30	4,436	2.0	31	87	6.6
550	30	5,125	-2.2		94	5.6
500	30	5,885	-6.2		99	4.1
450	30	6,696	-11.3		95	3.3
400	30	7,595	-17.4		68	1.4
350	30	8,581	-24.5		341	2.1
300	30	9,685	-32.9		324	4.1
250	30	10,941	-43.0		299	8.2
200	30	12,405	-55.1		293	15.9
175	30	13,244	-61.8		286	17.5
150	30	14,182	-68.5		278	15.0
125	30	15,259	-73.4		292	7.6
100	30	16,560	-73.3		57	7.2
80	30	17,879	-68.7		77	17.3
70	30	18,683	-66.0		83	24.1
60	30	19,627	-62.4		88	28.4
50	30	20,762	-58.6		89	33.4
40	30	22,172	-55.8		89	35.0
30	30	24,018	-52.1		86	36.9
25	30	25,204	-49.9		85	38.5
20	29	26,672	-47.6		85	38.5
15	27	28,582	-45.0		91	38.1
10	27	31,313	-40.8		89	38.3
7	27	33,761	-36.6		90	38.1
5	25	36,109	-34.3		94	38.9

WASHINGTON, D. C. 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	84	16.0	90	308	1.4
1000	30	133	17.4	81	321	2.1
950	30	575	18.3	63	296	6.4
900	30	1,036	15.5	61	298	7.8
850	30	1,519	11.9	63	290	6.8
800	30	2,026	9.8	59	280	8.0
750	30	2,558	7.1	54	275	9.5
700	30	3,124	4.3	47	282	11.5
650	30	3,722	1.1	47	276	13.8
600	30	4,364	-2.5	44	273	16.1
550	30	5,046	-6.2	38	270	18.5
500	30	5,790	-10.6	33	270	17.7
450	30	6,591	-16.0		274	20.8
400	30	7,470	-22.1		270	21.4
350	30	8,438	-29.3		267	23.5
300	30	9,519	-37.7		265	25.6
250	30	10,752	-46.8		270	33.2
200	30	12,196	-56.6		278	36.1
175	30	13,037	-59.0		278	30.9
150	30	14,000	-60.1		282	21.0
125	29	15,137	-60.4		278	15.9
100	29	16,525	-60.8		303	9.7
80	29	17,915	-59.8		5	2.5
70	29	18,767	-58.3		37	4.3
60	29	19,727	-56.3		65	6.6
50	29	20,891	-54.3		83	9.5
40	27	22,326	-51.8		85	9.3
30	25	24,208	-48.3		91	8.9
25	24	25,415	-46.7		80	11.5
20	17	26,877	-44.7		78	13.4
15	9	28,817	-41.6			
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See reference note at end of table

RAWINSONDE DATA

Average monthly values

JUNE 1963

Standard pressure surface (mb.)	WINNEMUCCA, NEV. 867 MB						WINSLOW, ARIZ. 850 MB						YAKUTAT, ALASKA 1012 MB						YUCCA FLAT, NEV. 877 MB						YUMA, ARIZ. 994 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	1,310	9.4	77	65	1.9	30	1,492	12.1	31	193	2.9	30	12	7.0	96	106	1.9	26	1,196	12.1	45	270	1.0	29	131	21.9	34	258	.8
1000	30	108					30	95					30	112	7.1	93	136	1.9	26	77					29	55				
950	30	543					30	535					30	530	5.0	88	175	3.5	26	512					29	503	23.9	29	254	5.8
900	30	1,003					30	999					30	972	2.0	85	175	6.4	26	979					29	974	21.9	26	261	8.0
850	30	1,478	11.3	59	32	2.1	30	1,489			192	2.1	30	1,432	- .7	81	184	6.4	26	1,464	16.1	37	317	3.3	29	1,466	19.1	26	243	8.5
800	30	1,982	8.8	56	348	3.7	30	2,004	16.2	26	220	10.5	30	1,914	- 3.3	75	197	7.2	26	1,977	13.4	33	25	.8	29	1,983	15.8	26	230	8.7
750	30	2,513	5.4	57	348	3.9	30	2,545	12.6	28	221	16.9	30	2,422	- 6.1	69	201	6.0	26	2,513	9.7	35	179	3.3	29	2,525	12.3	22	224	7.8
700	30	3,074	1.2	59	309	5.1	30	3,124	8.6	28	219	19.8	30	2,960	- 8.8	64	206	4.7	26	3,085	5.6	38	205	5.8	29	3,101	8.6	21	225	10.7
650	30	3,664	- 2.8	59	278	7.4	30	3,726	4.2	30	214	21.4	30	3,526	-12.1	59	220	5.1	26	3,679	1.6	38	235	8.0	29	3,704	4.9	18	232	13.2
600	29	4,296	- 6.9	52	254	8.5	30	4,377	- .6	34	211	22.5	30	4,140	-15.8	56	228	7.0	26	4,327	- 2.8		243	11.3	29	4,356	.8	16	238	16.1
550	29	4,966	-11.0	44	253	9.5	30	5,058	- 5.4		217	26.4	30	4,787	-19.9	53	232	6.6	26	5,003	- 7.0		249	16.5	29	5,039	- 4.0	16	242	20.0
500	29	5,696	-15.8	34	256	13.2	30	5,809	-10.3		226	27.6	30	5,493	-24.5	54	237	8.9	26	5,747	-12.2		247	21.8	29	5,793	- 9.3	16	241	24.9
450	29	6,478	-21.2		255	16.1	30	6,603	-16.0		230	30.7	30	6,249	-29.8	49	240	12.8	26	6,533	-18.3		251	23.5	29	6,591	-15.4	18	244	28.0
400	29	7,341	-27.8		251	16.5	30	7,488	-22.9		234	32.6	30	7,084	-35.7	48	241	14.6	26	7,414	-24.7		254	23.5	29	7,476	-22.4	19	247	34.0
350	29	8,287	-34.9		248	18.3	30	8,453	-30.1		236	35.4	30	8,000	-41.7		241	17.7	26	8,371	-32.2		247	28.4	29	8,443	-29.4	17	251	42.7
300	29	9,344	-41.8		253	17.5	30	9,532	-38.3		238	40.8	30	9,032	-46.9		258	21.8	26	9,441	-40.2		246	30.3	29	9,525	-37.3	17	253	46.4
250	29	10,563	-48.6		268	18.7	30	10,764	-46.5		239	47.0	30	10,234	-48.0		263	22.7	26	10,663	-47.7		249	34.4	29	10,762	-45.3		249	54.6
200	29	12,017	-51.6		266	21.2	30	12,220	-53.6		240	53.0	30	11,714	-45.8		262	16.5	26	12,118	-52.6		253	38.5	28	12,219	-53.1		249	59.8
175	29	12,882	-52.6		265	21.2	30	13,072	-56.6		239	50.3	30	12,603	-45.9		249	15.0	26	12,978	-54.0		251	37.5	24	13,057	-56.1		249	52.8
150	28	13,878	-53.1		254	20.0	30	14,042	-59.9		242	42.2	29	13,633	-46.0		248	13.4	26	13,963	-56.4		248	34.4	20	14,006	-58.6		247	46.8
125	28	15,045	-56.0		242	16.5	30	15,171	-63.4		240	30.9	29	14,844	-47.0		245	10.1	26	15,112	-59.4		241	22.5	15	15,141	-60.9		246	36.1
100	28	16,457	-57.7		232	9.7	30	16,534	-65.0		223	15.0	29	16,320	-47.4		230	7.2	26	16,502	-61.4		233	13.2	11	16,500	-62.4		238	23.5
80	28	17,865	-57.5		180	2.5	30	17,905	-62.1		142	6.4	28	17,798	-47.6		208	4.3	25	17,891	-59.7		147	2.1	11	17,876	-62.1		184	11.9
70	28	18,717	-57.2		119	3.7	30	18,741	-60.8		108	8.2	28	18,679	-47.7		177	3.1	25	18,732	-58.5		91	6.2	10	18,709	-60.7			
60	27	19,689	-56.2		91	7.2	30	19,696	-59.0		99	10.5	28	19,697	-47.8		109	3.1	25	19,698	-57.1		95	7.4	7	19,684	-58.8			
50	27	20,851	-54.9		99	7.2	30	20,848	-56.3		88	13.4	28	20,900	-47.7		106	3.9	24	20,858	-55.2		94	11.1	6	20,836	-55.9			
40	27	22,283	-52.9		78	9.5	29	22,274	-53.6		89	14.6	28	22,374	-47.3		99	5.4	24	22,289	-52.8		85	9.5	6	22,259	-54.7			
30	25	24,156	-49.8		77	10.9	28	24,137	-50.3		87	16.1	28	24,281	-45.9		99	9.3	24	24,156	-49.7		83	8.9	5	24,113	-50.6			
25	24	25,358	-47.3		81	10.7	26	25,338	-48.1		92	17.3	28	25,498	-44.7		92	11.1	21	25,342	-46.9		75	8.2	5	25,308	-48.6			
20	23	26,844	-44.2		85	10.5	25	26,814	-45.2		88	15.5	27	26,996	-42.7		92	12.6	17	26,840	-44.8		94	7.4	5	26,782	-46.4			
15	18	28,800	-40.8		77	11.7	14	28,762	-42.5				26	28,954	-39.6		89	14.4	12	28,752	-42.5		76	9.1	5	28,706	-43.3			
10							6	31,546	-37.6				17	31,766	-34.8		85	18.5	7	31,526	-37.2									

Note: All observations scheduled at 1200, G. C. T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. Number of observations refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning June 19, 1963
2/ beginning June 8, 1963
3/ beginning June 11, 1963

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. JUNE 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
June									
3	0.58	0.66	0.84	1.00	1.32	1.08	0.88	0.78	0.69
4	----	.91	1.03	1.16	----	----	----	----	----
5	.81	.91	1.03	1.17	1.35	1.07	.88	----	----
6	.86	.97	1.09	1.23	1.40	1.06	.84	.63	.55
7	.83	.93	1.06	1.19	1.40	(.95)	(.81)	----	(.54)
9	.84	.93	1.05	1.18	1.35	1.15	1.00	.89	.81
10	.85	.94	1.05	1.21	1.43	1.19	1.07	.94	.87
11	----	----	----	----	----	----	(.93)	(.86)	(.76)
12	.77	.85	.97	1.13	(1.29)	1.08	----	----	----
13	----	----	----	----	(1.30)	1.12	.97	.85	----
14	.77	.85	.96	1.11	1.32	----	----	----	----
15	.90	.99	1.09	1.21	1.40	1.19	1.04	.94	.85
16	.76	.80	.93	1.09	----	----	----	----	----
17	.76	.83	.96	1.10	----	1.03	.90	.78	.93
18	.73	.80	.92	1.07	1.29	(1.09)	----	----	----
19	.67	.75	.93	1.07	1.26	----	.88	----	----
20	.67	----	.90	----	(1.29)	(1.07)	----	----	----
21	.68	.76	.94	1.10	1.35	(1.16)	1.00	----	----
22	.85	.92	1.05	1.20	1.41	1.17	1.08	.96	.89
23	.85	.94	1.07	1.22	1.41	1.21	1.05	.91	.84
24	.93	1.00	1.11	1.24	1.41	1.14	.99	.83	.77
25	.81	.85	1.01	1.17	1.34	1.11	.99	.87	.81
26	.78	.86	.99	1.13	1.32	1.08	.95	.80	.71
27	.71	.83	.96	1.13	1.29	1.07	.89	.76	.65
28	----	----	----	1.07	1.29	----	.77	----	----
29	.75	.85	.97	1.13	1.32	1.09	.91	.78	.69
30	.74	.81	.95	1.11	1.33	1.16	1.02	.92	.83
Averages	0.78	0.87	0.99	1.06	1.35	1.12	0.95	0.84	0.76

TUCSON, ARIZ.

	Air mass 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
June									
1	0.90	0.90	1.00	----	----	----	----	----	----
2	.60	.70	.80	1.00	----	----	----	----	----
3	.70	.90	1.00	1.20	----	----	----	----	----
4	----	----	----	----	----	----	1.00	0.90	0.80
5	.80	.90	1.00	----	----	----	----	.90	.80
6	.90	1.00	----	----	----	----	----	.90	.80
7	----	----	----	----	----	----	----	----	.80
8	.80	.90	1.00	----	----	----	----	----	----
9	.80	.90	----	----	----	----	----	----	----
10	.80	----	----	----	----	----	----	----	----
11	.70	----	----	----	----	----	----	----	----
12	.80	.90	----	----	----	----	----	----	----
14	.90	1.00	----	----	----	----	----	----	----
15	.80	.90	1.10	----	----	----	----	----	----
16	.70	.80	----	----	----	----	----	----	----
17	.80	.90	1.00	----	----	----	----	----	----
19	.70	.80	----	----	----	----	----	----	----
20	.90	1.00	.70	----	----	----	----	----	----
21	.90	1.20	----	----	----	----	----	----	----
24	.90	1.00	----	----	----	----	----	----	----
25	.80	.90	----	----	----	----	----	----	----
30	.70	.80	.90	----	----	----	----	----	----
Averages	0.80	0.91	0.97	1.10	----	----	1.00	0.90	0.72

BLUE HILL OBS., MASS.

	Air mass 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
June									
1	0.74	0.84	0.98	1.13	1.33	0.98	0.76	0.65	0.55
2	.79	.89	1.03	1.20	----	1.17	1.01	.89	.81
14	.75	.82	.95	1.11	----	----	----	----	----
16	.64	.77	.96	1.16	1.35	----	----	----	----
17	.70	.78	.93	1.08	1.25	----	----	----	----
18	.45	.58	.67	.87	----	----	----	----	----
21	----	----	----	----	1.41	1.12	.93	.83	.74
22	.75	.84	.99	1.17	----	1.12	.96	.83	.74
23	.75	.87	.98	1.13	1.34	----	----	----	----
24	.66	.75	.82	.94	1.28	1.05	.83	.69	.61
25	.70	.81	.93	1.08	----	----	----	----	----
27	.54	.62	.75	.93	----	----	----	----	----
Averages	0.68	0.78	0.91	1.07	1.33	1.09	0.90	0.78	0.69

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
June									
12	----	----	----	S 1.14	----	----	----	----	----
17	----	----	----	S 1.12	----	----	----	----	----
20	S 0.80	S 0.88	S 1.02	1.13	1.35	----	----	----	----
21	S .83	S .92	S 1.04	1.17	S 1.34	S 1.12	S 0.98	----	----
22	S .78	S .95	S 1.01	S 1.16	S 1.36	----	----	----	----
23	----	----	----	M 1.00	----	----	----	----	----
30	----	----	----	----	I 1.06	M .80	H .48	HH	HH
Averages	0.80	0.92	1.02	1.12	1.28	0.96	0.73	----	----

OMAHA, NEBR.

	Air mass 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
June									
4	M 0.23	M 0.42	S 0.50	S 0.66	----	----	----	----	----
9	----	----	----	----	S 1.17	S 0.90	M 0.38	----	----
11	S .65	S .73	S .87	S .94	S 1.36	S 1.03	----	----	----
12	S .58	S .70	S .90	S 1.11	M 1.30	H .95	----	----	----
13	----	M .61	M 1.23	M 1.10	M 1.42	M 1.03	----	----	----
20	M .31	----	M .54	----	----	----	----	----	----
25	I .23	I .33	I .48	M .71	----	----	----	----	----
26	----	----	----	M .73	----	----	----	----	----
27	----	----	----	----	----	I .68	I .35	----	----
28	M .37	M .48	M .62	S .81	1.05	S .79	S .63	S 0.43	S 0.33
29	S .72	S .78	M .82	S .84	S 1.04	S .77	S .61	S .48	S .34
30	M .40	M .48	M .61	M .78	S 1.07	S .77	S .56	S .46	S .34
Averages	0.44	0.57	0.73	0.85	1.20	0.87	0.51	0.46	0.34

MAUNA LOA OBS., HAWAII

	Air mass 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
June									
1	1.05	1.12	----	----	----	----	----	----	----
5	1.01	1.10	1.20	----	----	----	----	----	----
6	1.07	1.17	1.27	1.39	----	----	----	----	----
9	1.10	1.18	1.27	1.39	----	----	----	----	----
10	1.03	1.10	1.22	----	----	----	----	----	----
11	1.00	1.10	1.20	1.32	----	----	----	----	----
12	1.05	1.13	1.23	1.36	----	----	----	----	----
14	1.06	1.15	1.25	1.37	----	----	----	----	----
15	1.04	1.13	1.22	1.35	----	----	----	----	----
16	1.07	1.16	1.25	1.38	1.51	1.35	1.22	1.12	1.06
17	1.10	1.18	1.29	1.40	1.54	1.40	----	----	1.12
18	1.10	1.18	1.28	1.39	1.54	1.39	1.26	1.17	1.10
19	1.12	1.21	1.30	1.41	1.53	1.38	1.26	1.15	1.08
20	1.11	1.20	1.28	1.39	1.52	1.34	1.24	1.12	1.03
21	1.09	1.19	1.28	1.40	1.51	1.35	1.21	1.11	1.04
23	----	----	----	----	----	1.35	1.23	1.12	1.04
25	1.11	1.19	1.27	1.38	----	1.34	1.23	1.14	1.06
27	----	----	1.21	1.38	1.51	----	----	----	----
28	1.03	1.12	1.22	1.35	1.50	1.35	1.22	1.11	1.03
29	1.05	1.14	1.23	1.35	1.53	1.35	1.23	1.13	1.04
30	1.04	1.15	1.23	1.36	1.49	1.33	1.21	1.10	1.01
Averages	1.06	1.15	1.25	1.37	1.52	1.36	1.23	1.13	1.06

GUAM, M. I.

	Air mass 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
			No observation due to cloudiness						

( ) Clouds present
HH Haze, intense
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable
* Values corresponding to true solar noon
H Haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63 of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JUNE 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	745	350	773	498	787	793	797	611	805	814	---	779	687	650	804	727	689	656	719	675	776	810	809	799	785	774	777	759	776	787		731
ANNETTE ALASKA	195	500	54	274	547	442	441	217	370	98	268	468	604	185	294	87	442	217	187	253	620	631	324	432	314	454	454	116	426	612		351
APALACHICOLA FLORIDA	641	710	682	699	544	609	441	441	357	177	634	489	635	678	617	595	492	450	470	693	632	355	347	495	---	581	572	442	666	694		546
ARGONNE NAT. LAB.	686	653	563	484	452	533	551	553	598	456	651	711	423	602	635	616	733	693	421	694	772	790	763	716	691	655	593	537	621	678		617
ASTORIA OREGON	---	462	515	103	256	430	254	231	572	805	248	---	822	818	822	815	671	496	572	503	375	589	340	225	919	653	290	---	136	591		500
ATLANTA GEORGIA	702	751	691	637	681	683	691	695	742	678	580	767	722	695	677	265	209	101	189	325	483	116	131	370	242	208	622	518	600	599		512
BARROW ALASKA	539	494	432	323	432	483	421	556	665	754	764	605	702	797	761	765	722*	675*	431	744*	600	729*	---	---	411	503	268	---	603	393		577
BETHEL ALASKA	717	350	241	406	351	640	590	664	318	541	487	560	692	625	723	601	648	738	402	364	91	225	143	265	357	203	218	377	104	293		431
BISMARCK N.DAK.	575	567	508	713	373	683	690	627	586	315	286	431	645	709	578	---	701	718	689	707	540	416	133	563	602	688	748	648	686	746		582
BLUE HILL MASS.	748	755	723	512	585	520	405	711	474	338	151	163	583	627	132	582	652	677	690	410	593	771	744	745	735	674	686	627	199	515		558
BOISE IDAHO	744	632	190	212	452	562	639	752	186	476	701	771	679	176	762	679	758	692	577	659	577	439	413	670	606	791	739	463	567	785		578
BOSTON MASSACHUSETTS	722	731	719	557	642	542	293	690	407	446	126	154	610	634	127	578	587	717	684	448	608	768	752	731	721	639	673	638	249	584		559
BROWNSVILLE TEXAS	618	667	706	725	649	622	534	690	646	528	564	628	693	710	666	635	---	316	662*	729	635	605	653	394	700	656	670	716	650	525		627
CANTON ISLAND P.I.	538	497	524	506	494*	371	360	379	527	534	486	550	443	542*	556	512	472	549	408	449	496	452	505	552	560	518	462	558	518	555		496
CAPE HATTERAS N.C.	280	115	697	669	615	666	679	556	518	696	546	700	635	459	698	172	123	322	412	493	639	142*	193	639	707	742	643	557	614	689		520
CARIBOU MAINE	503	677	702	236	354	200	664	630	584	---	719	612	696	680	667	608	534	407	691	528	212	335	---	724	701	655	726	702	712	477		569
CHARLESTON S.C.	589	734	557*	699	580	570	685	553	571	604	479	687	711	472	697	315	208	166	364	676	569	81	117	166	260	258	431	609	591	579		486
CLEVELAND OHIO	669	442	499	345	617	584	528	593	523	495	530	129	534	618	712	690	673	693	592	309	664	722	706	661	621	---	574	551	273	593		556
COLUMBIA MISSOURI	677	354	706	703	654	650	695	655	699	625	767	716	720	496	78	397	565	722	354	610	754	796	707	660	683	666	659	591	714	725		627
CORVALLIS OREGON	474	---	---	---	442	433	323	297	554	779	706	749	765	788	759	763	806	728	605	478	198	447	239	322	644	801	376	386	243	582		544
DAVIS CALIFORNIA	786	771	804	740	770	770	737	772	728	712	775	759	758	766	742	742	723	766	780	794	772	761	770	784	756	780	800	750	788	788		765
DODGE CITY KANSAS	640	302	518	632	671	616	703	575	762	765	727	740	600	605	524	107	405	673	695	750	737	384	568	722	745	731	743	749	747	748		629
E. LANSING MICHIGAN	749	718	565	655	630	613	459	479	500	606	291	673	404	284	786	672	767	755	525	704	793	814	800	792	747	678	577	313	644	677		622
EL PASO TEXAS	735	814	809	801	820	537	743	670	828	789	674	623	749	749	789	822	746	770	774	789	779	804	816	793	803	766	775	790	789	755		763
ELY NEVADA	431*	500	320*	428	349	599	575*	538	403	113	298	561	376	557	772	774	507	---	700*	790	827	818	858*	817*	827	---	833	---	845	837		602
EPPLEY.NEWPORT R.I.	721	711	581	618	394	484	355	740	639	130	173	305	639	454	129	660	721	704	699	437	509	746	722	716	720	698	---	644	176	511		543
FAIRBANKS ALASKA	419	566	558	460	270	583	586	584	605	475	688	465	316	491	409	561	350	477	669	468	740	348	437	463	378	673	273	323	549	380		485
FLAMING GORGE UTAH	563	584	588	634	549	660	756	758	338	398	642	780	568	718	308	---	602	489	728	572	659	768	780	789	794	780	788	790	782	705		651
FORT WORTH TEXAS	715	687	752	732	546	422	546*	652	550	678	617	554	613*	730	752	63	354	523	703	706	668	753	648	713	679	729	610	724	679	652		625
FRESNO CALIFORNIA	737	761	780	768	743	456	741	728	687	477	577	596	522	720	726	725	732	726	735	777	785	781	765	756	755	745	779	750	781	787		713
GAINESVILLE FLORIDA	487	675	669	518	430	510	545	622	571	630	473	515	512	495	610	543	592	631	580	375	249	675	534	609	441	579	671	643	592	480		549
GLASGOW MONTANA	409	584	126	334	550	321	532	676	744	487	630	603	746	463	742	741	360	699	627	513	467	618	673	191	728	756	668	712	505	670		562
GRAND JUNCTION COLO.	627	479	537	661	750	675	606	554	428	545	682	810	624	685	599	652	731	474	809	586	831	826	840	810	811	820	815	833	838	811		692
GREAT FALLS MONTANA	607	566	283	313	585	589	410	487	322	425	693	544	664	542	697	635	639	731	568	396	104	381	382	413	596	759	541	477	424	664		514
GREENSBORO N.C.	710	437	530	489	628	573	572	595	619	---	---	716	657	662	702	87	218	339	490	415	234	531	506	494	633	645	377	611	436	619		519
GRIFFIN EXP.STA.GA.	768	796	748	695	732	654	677	728	757	739	668	792	735	714	718	251	271	116	163	497	588	171	153	360	171	213	538	642	483	560		537
INDIANAPOLIS INDIANA	716	600	315	445	549	641	420	709	728	469	---	---	---	747	517	666	---	---	638	398	768	773	767	716	706	629	662	658	508	607		614
ITHACA NEW YORK	703	677	456	124	430	587	367	460	472	184	363	72	633	311	321	707	545	642	714	284	267	692	714	709	657*	657*	658*	474	456	631		499
LAKE CHARLES LA.	633	456	317	593	673	694	688	687	693	705	699	628	628	659	691	620	328	396	622	214	477	525	255	657	459	535	496	602	398	404		548
LANDER WYOMING	537	308	605	638	590	481	687	768	575	495	654	771	719	609	77	456	540	755	734	595	678	760	735	772	795	783	793	789	792	770		642
LARAMIE WYOMING	425	396	564	552	639	570	550	541	177	550	720	689	395	412	189	153	684	493	712	588	715	689	681	749	721	697	746	712	724	691		571
LAS VEGAS NEVADA	670	735	788	796	753	757	767	721	747	396	605	796	658	725	789	779	758	960	763	789	791	972	798	798	800	807	813	819	815	744		764
LITTLE ROCK ARKANSAS	526	609	591	445	---	645	615	633	609	619	686	404	604	391	594	299	657	597	485	377	425	481	554	593	452	---	---	586	473	604		539
LOS ANGELES CALIF.	483	409	242	676	500	566	---	---	186*	95	327	592	622	689	---	483*	349	332	589	493	499*	442	669	723*	724	670	555	750	738	737		524
LOS ANGELES CALIF. U	296	271	140	569	329	241	406	671	286	127	253	448	604	727	739	730	462	552	590	524	315	325	583	757	770	725	664	769	822	804		517
MANHATTAN KANSAS	559	598	513	440	582	671	627	460	662	720	706	661	653	599	303	487	498	676	472	664	290	482	327	650	669	618	663	693	693	694		578
MATANUSKA ALASKA	307	359	237	369	612	316	523	525	364	485	571	679	169	287	233	638	549	688	557	344	585	197	366	575	729	375	148	437	664	126		434
MAUNA LOA OB.HAWAII	513	531	344	681	771	680	469	424	410	266	356	596	632	775	495	815	850	843	844	789	842	789	821	759	668	770	813	826	832	832		668
MEDFORD OREGON	720	500	687	314	507	488	---	---	---	---	---	---	---	---	---	---	---	---	---	515*	---	---	455	770	784	754	538	366	382	754		---
MIAMI FLORIDA	557	545	458	388	491	429	447	305	532	505	452	665	472	429	344	441	714	701	666	848	791	739	676	551	562	247	432	643	706	787		551
MIDLAND TEXAS	172	644	721	624	699	634	502	394	723	735	341	554	422	684	514	699	347	699	700	715	719	701	720	692	739	734	707	671	700	700		620
NASHVILLE TENNESSEE	610	633	467	255	561	499	637	595	590	627	663	538	562	677	429	83	653	627	504	138	334	458	484	555	594	364	298	308	533	427		490
NORTH OMAHA NEBRASKA	522	646	612	709	668	672	688	673	693	628	738	713	732	396	161	681	760	534	711	628	498	643	611	82	691	661	702	741	748	740		623
OAK RIDGE TENNESSEE	590	609	440	207	419	420	363	338	549	495	567	535	581	621	541	103	468	412	422	236	211	374	461	653	494	364	441	577	364	444		443
OKLAHOMA CITY OKLA.	402	580	658	666	630	626	514	316	597	699	647	639	531	533	519	391	124	476	654	682	655	519	385	656	685	697	685	693	678	667		573

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JUNE 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PAGE ARIZONA	508	550	646	543	556	622	685	464	510	220	477	550	219	673	590	652	649	505	640	640	652	648	646	652	669	664	661	666	645	659		582
PHOENIX ARIZONA	677	721	753	759	738	733	759	708	769	768	736	721	718	730	716	717	705	699	731	718	743	749	747	725	736	752	732	732	741	728		732
PORTLAND MAINE	734	741	636	596	572	554	540	713	325	534	400	---	742	720	412	538	702	751	763	615	504	544	656	739	703	604	609	597	398	531		602
PROSSER WASHINGTON	773	594	797*	558*	554*	781	803	702	478	820	668	826	761	807	793	738	777	716	767	612	587	628	735	658	830	789	622	338	751	828		703
RAPID CITY S.DAK.	437	339	567	685	487	677	716	656	390	615	214	668	716	248	62	663	640	707	634	566	536	694	454	643	727	713	721	699	753	682		577
RIVERSIDE CALIFORNIA	568	452	540	707	482	405	606	733	688	403	419	575	648	770	762	772	635	660	616	675	567	513	709	795	795	777	603	805	806	799		643
SAINT CLOUD MINN.	375	361	516	547	317	609	427	447	243	196	415	628	786	662	576	752	702	502	676	743	788	633	614	654	599	773	606	389	711	717		565
SALT LAKE CITY UTAH	590	668	418	674	299	710	627	821	557	273	756	809	290	441	553	722	735	649	815	733	715	822	769	731	837	831	870	864	855	857		676
SAN ANTONIO TEXAS	617	678	619	609	599	538	499	638	620	683	654	326	626	719	669	631	437	596	652	523	635	656	606	342	518	521	691	693	696	532		594
SANTA MARIA CALIF.	615	540	638	654	343	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	784	---	---	---
SAULT STE MARIE MICH	693	637	726	674	685	278	534	561	670	178	134	677	303	684	728	799	720	717	144	376	833	820	793	708	757	705	735	752	677	676		612
SAYVILLE NEW YORK	553	548	285	448	337	384	124	486	453	246	---	---	461	164	123	520	514	488	532	208	446	579	574	549	555	518	515	434	78	282		407
SEATTLE WASH. UNIV.	549	168	496	115	207	566	350	342	399	786	427	536	868	912	905	914	903	664	555	616	345	349	461	351	666	246	470	459	514	869		534
SEATTLE TACOMA WASH.	707	158	333	165	174	626	146	202	455	745	545	520	692	761	759	750	760	521	663	400	424	218	501	205	446	489	211	301	367	634		463
SHREVEPORT LOUISIANA	722	697	658	675	711	646	706	690	704	703	666	668	687	565	683	260	216	545	458	---	---	497	685	578	617	640	573	495	582	470		600
SPOKANE WASHINGTON	690	306	485	526	---	220	506	633	305	748	504	657	767	767	729	567	771	740	749	582	365	365	557	660	510	791	538	524	208	636		566
STATE COLLEGE PENN.	719	430	178	123	433	458	451	331	437	677	495	143	698	537	713	763	541	730	702	358	659	790	791	773	750	692	628	263	332	493		536
STERLING VIRGINA	577	121	67	551	---	610	457	231	576	644	443	658	731	530	772	421	723	671	694	391	592	792	775	748	751	737	723	615	686	567		581
STILLWATER OKLAHOMA	422	623	667	667	688	627	572	423	572	749	713	724	621	471	597	192	351	633	658	671	724	478	240	677	719	---	706	734	711	700		598
SWAN ISLAND W.I.	685	658	616	669	518	559	633	653	628	409	536	655	585	652	685	674	610	339	663	586	685	501	617	670	635	644	671	134	638	437		588
TAMPA FLORIDA	688	591	459	555	548	526	369	489	543	616	684	700	581	715	665	690	688	733	724	679	622	696	559	444	567	387	418	158	430	706		574
TUCSON ARIZONA	657	729	714	720	769	774	759	770	783	783	749	757	759	769	769	757	753	739	751	782	797	788	784	772	773	759	749	745	753	750		757

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month

JUNE 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	266	349	-2	363	206	314	401	329	339	-87	363	411	492	85	272	455	288	440	391	296	292	473	481	355	438	479	492	452	333	454		341

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code λsΩΩΩ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	36341	00346	35335	00336	00333	00351	00313	00324	34349	36349	05354	00349	00338	00349	00353	00342	00345	00351	00333	00345	00354	05319	35353	00315	00349	00323	00315	00311	00314	00329		337
Caribou, Maine	00374	00368	00355	35370	35350	05367	00370	00366	00366	00444	00395	00406	00400	00343	00315	00382	35384	00369	00366	00356	05353	35429	35378	00349	00356	00339	00330	00358	00350	00349		368
Green Bay, Wis.	00370	00364	00352	00352	34365	00342	33353	00333	36346	00346	35375	00381	05384	00372	00367	00365	00385	00390	35385	00387	00388	00381	00368	00354	00356	00330	00347	00347	00345	00338		362
Mauna Loa, Hawaii	00296	00302	-----	00309	00298	00308	-----	-----	00296	00299	00326	00296	00290	00292	00291	-----	00293	00294	00297	00293	00293	00290	00280	00277	00275	00281	00283	00281	00286	00294		293
Midland, Texas	-----	00326	00309	00310	00302	03278	05288	05283	00285	00308	06294	05277	05251	00340	05245	00295	05280	00292	00297	-----	00304	00287	-----	06267	00288	00294	00283	00303	00291	00281		291
Nashville, Tenn.	00368	00361	00371	-----	00375	00370	00340	00309	00307	06292	00346	00336	00327	00331	04309	-----	00339	00350	00333	-----	00324	00338	00327	00361	00369	04345	05354	00366	05390	06353		344
Sterling, Va.	00381	06387	36366	06362	34370	33375	36354	35368	00331	35326	35359	00351	00371	00356	00343	35354	00333	00329	00329	36350	00321	00363	00384	00368	00357	00346	00345	00342	00338	00337		353

The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded ΩΩΩ) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e.g., 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick. The code λs designates the type of measurement made.

STORM SUMMARY

DELAYED DATA

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE	
								PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS			PROP-ERTY	CROPS
May 1963 New Hampshire	3	2	0	0	4									0	0	3	0	0	0	3	0								

See reference notes with current data.

CORRECTIONS

Month: 1961 Annual

pages 22, 32: Winslow, Ariz. — Greatest snowfall in 24 hours occurred on October 30.

pages 25, 35: Baltimore Md. — Data for Baltimore U and AP are reversed - data on first line, AP, is data for Baltimore U.

page 49: Third reference note — Should read "--based on records through 1961--"

Month: October 1962

page 517: Grand Forks, N. Dak. — Heating degree days should be 527, accumulated 898. Please see page 294 this issue for corrected values.

Pembina, N. Dak. — Heating degree days should be 531, accumulated 890. Please see page 294 this issue for corrected values.

Month: December 1962

page 617: Alaska — The "B" should be deleted in the date column under Wind.

Month: Annual 1962

pages 23, 33: Hartford, Conn. — Heating degree days should be 6751 and precipitation 40.40 in. in the English Table; 3751 heating degree days and 1026 mm. precipitation in the Metric Table.

Month: March 1963

page 151: Entire page — Data for dates 1 through 15, as shown, are actually data for 17th through 31st; and the reverse, 17th through Avg. are for the 1st through the 16th. The data in column for the 16th is the Avg. This page will be corrected and appear in this issue, page 314.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. DELAYED DATA

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Dec. 1961									
13----	----	----	----	----	----	----	S 1.26	S 1.06	S 0.96
27----	----	----	----	----	S 1.36	----	S 1.29	S 1.17	----
28----	----	S 0.95	S 1.12	----	----	----	----	----	----
29----	S 0.96	S 1.09	----	----	----	----	----	----	----
Averages	0.96	1.02	1.12	----	1.36	----	1.28	1.12	0.96

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Jan. 1962									
10----	----	----	S 1.23	----	S 1.34	----	S 1.29	S 1.18	S 1.05
16----	M 0.89	M 1.05	S 1.21	----	S 1.39	----	1.29	1.18	1.09
17----	S 1.02	S 1.12	----	----	----	----	----	----	----
24----	----	----	----	----	S 1.24	----	----	----	----
27----	S .99	S 1.09	S 1.30	----	----	----	----	----	----
Averages	0.97	1.09	1.25	----	1.32	----	1.29	1.18	1.07

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Mar. 1962									
1----	S 0.96	S 1.07	S 1.21	S 1.36	S 1.42	S 1.34	S 1.16	S 1.03	S 0.93
2----	----	----	----	----	S 1.44	----	----	----	----
17----	.83	Clock Inoperative							
Averages	0.90	1.07	1.21	1.36	1.43	1.34	1.16	1.03	0.93

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
May 1962									
17----	----	----	M 0.64	M 0.80	----	----	----	----	----
20----	----	----	----	S 1.18	----	----	----	----	----
25----	----	----	----	----	----	S 1.05	S 0.86	S 0.71	S 0.59
Averages	----	----	0.64	0.99	----	1.05	0.86	0.71	0.59

MADISON, WIS.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
June 1962									
12----	S 0.84	S 0.94	S 1.07	----	----	----	----	----	----
13----	S .83	S .93	S 1.04	S 1.21	S 1.39	S 1.10	S 0.99	S 0.86	S 0.75
14----	M .62	M .70	M .80	S .95	S 1.10	----	----	----	----
24----	S .69	S .79	S .91	S 1.07	----	----	----	----	----
26----	S .71	S .79	.81	1.10	----	----	----	----	----
Averages	0.74	0.83	0.93	1.08	1.25	1.10	0.99	0.86	0.75

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Dec. 1962									
2----	1.03	1.15	1.26	1.41	----	----	----	----	----
3----	----	1.16	1.28	----	----	----	1.23	1.09	0.99
4----	1.04	1.15	1.29	1.40	1.45	1.42	1.29	1.19	1.07
5----	1.19	1.27	1.40	1.53	1.58	1.53	1.33	1.19	1.10
6----	1.19	1.29	1.41	1.51	1.47	1.49	1.36	1.22	1.12
7----	1.15	1.26	1.33	1.49	(1.44)	----	----	1.24	1.13
8----	1.13	1.24	1.37	1.49	1.51	1.48	1.31	1.17	1.05
9----	1.13	1.24	1.34	1.52	1.54	1.49	1.34	1.23	1.13
10----	1.16	1.24	1.38	1.53	1.51	1.50	1.38	1.27	1.15
12----	1.09	1.21	1.31	1.48	1.46	1.46	1.30	1.18	1.06
13----	1.07	1.17	1.29	1.47	1.49	1.48	1.34	1.21	1.11
14----	1.19	1.29	1.41	1.52	1.57	1.56	1.40	1.28	1.18
15----	1.19	1.29	1.38	1.54	1.54	1.53	1.31	1.26	1.14
16----	----	----	1.37	----	----	----	1.35	1.22	1.11
17----	----	----	1.29	1.43	1.45	----	----	----	----
20----	----	----	1.29	1.42	----	----	----	----	----
21----	1.03	1.17	1.31	1.47	1.49	1.47	1.36	1.26	1.17
22----	1.19	1.30	1.42	1.56	1.57	1.55	1.40	1.27	1.17
23----	1.08	----	----	----	1.49	1.48	1.28	1.12	.98
26----	1.01	1.14	1.33	1.51	1.54	1.51	1.38	1.25	1.15
27----	1.15	1.27	1.39	1.54	1.54	1.52	1.35	1.25	1.15
28----	----	----	----	1.47	1.45	1.51	1.39	1.26	1.13
29----	1.21	1.31	1.41	1.58	1.58	1.56	1.40	1.27	1.17
30----	1.21	1.33	1.45	1.61	1.62	1.62	1.44	1.31	1.18
31----	----	1.32	1.44	1.56	1.59	1.56	1.39	1.27	1.17
Averages	1.13	1.24	1.35	1.46	1.52	1.51	1.35	1.23	1.12

OMAHA, NEBR.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Jul. 1962									
2----	----	----	----	----	----	1.02	0.82	0.71	0.56
6----	I 0.61	M 0.73	S 0.86	S 1.03	----	----	----	----	----
8----	----	----	.96	1.11	1.28	1.09	.93	.80	.65
9----	.63	.72	.82	----	----	1.01	.87	.76	.61
10----	----	----	----	----	1.19	----	----	----	----
16----	.80	.89	1.00	1.15	----	----	----	----	----
17----	.77	.82	.92	1.07	----	----	----	----	----
20----	----	----	----	----	----	1.10	.99	.86	.73
25----	----	----	----	----	1.38	1.15	.98	.88	.76
26----	----	----	----	1.19	----	----	----	----	----
30----	----	----	----	----	1.25	S 1.10	.94	.83	.71
Averages	0.70	0.79	0.91	1.11	1.27	1.07	0.92	0.81	0.67

See reference notes with current data.

RAWINSONDE DATA

Average monthly values

DELAYED DATA

Standard pressure surface (mb.)	ENIWETOK ATOLL, M. I. 1/ 1010 MB						ENIWETOK ATOLL, M. I. 2/ 1011 MB						KWAJALEIN, MARSHALL IS. 2/ 1011 MB						KWAJALEIN, MARSHALL IS. 3/ 1012 MB						MERIDA, MEXICO 5/ 1019 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	5	27.6	79	76	15.7	30	5	27.8	78	88	9.3	30	4	27.1	81	83	8.7	23	4	27.2	81	84	7.0	31	11	15.6	94	76	4.9
1000	31	97	26.8	80	77	17.1	30	99	27.0	79	84	11.1	30	97	26.4	82	82	9.1	23	106	26.4	83	82	8.0	31	170	20.2	79	85	7.0
950	31	547	23.2	83	78	19.4	30	549	23.6	82	80	13.0	30	541	23.0	86	77	11.3	23	558	23.0	89	85	9.5	31	608	18.1	73	90	7.2
900	31	1,021	20.4	74	85	20.0	30	1,024	20.6	76	88	14.2	30	1,021	20.4	77	84	11.7	23	1,029	20.2	85	84	11.1	31	1,074	15.4	70	68	4.9
850	31	1,514	18.0	65	88	18.3	30	1,517	18.1	67	89	12.8	30	1,514	17.8	74	86	11.5	23	1,523	17.6	82	91	11.5	31	1,557	13.2	59	24	3.1
800	31	2,032	15.6	55	88	16.7	30	2,035	15.6	60	93	13.8	30	2,032	15.2	66	89	12.8	23	2,040	15.2	73	91	11.5	31	2,066	11.2	51	347	2.5
750	31	2,575	12.8	46	89	12.0	30	2,577	12.8	55	93	13.0	30	2,575	12.6	60	89	13.4	23	2,586	12.2	72	91	12.0	31	2,597	8.7	47	325	3.9
700	31	3,154	9.9	45	88	11.5	30	3,158	9.5	50	91	12.4	30	3,154	9.6	56	90	14.0	23	3,162	9.0	65	89	14.0	31	3,172	6.6	40	287	4.7
650	31	3,765	6.6	45	85	8.7	30	3,765	6.0	48	88	11.3	30	3,761	6.3	49	88	13.8	23	3,771	5.6	66	86	14.2	31	3,773	3.3	40	287	7.2
600	31	4,421	3.0	38	81	8.9	30	4,421	2.0	48	88	10.3	30	4,419	2.4	46	90	13.8	23	4,425	2.0	64	88	15.2	31	4,423	- .5	38	274	10.1
550	31	5,119	- 1.1	33	76	8.2	30	5,115	- 2.0	46	79	10.1	30	5,106	- 1.7	47	88	11.7	23	5,118	- 2.0	60	90	14.4	31	5,104	- 4.0	30	250	13.4
500	31	5,875	- 5.5	34	59	5.4	30	5,870	- 6.5	40	82	9.3	30	5,870	- 6.0	38	82	8.7	23	5,876	- 6.2	54	95	13.6	31	5,861	- 8.3		257	14.6
450	31	6,690	-10.3	31	23	3.1	30	6,681	-11.6	35	77	8.7	30	6,677	-11.3	39	85	8.9	23	6,690	-11.5	55	95	14.2	31	6,665	-13.9		256	19.6
400	31	7,593	-16.4	30	315	5.2	30	7,580	-17.6	34	74	5.4	30	7,582	-17.4	39	101	6.4	23	7,588	-17.3	48	94	12.4	30	7,557	-20.2		253	21.8
350	31	8,584	-23.1	33	291	10.7	30	8,566	-24.5	29	93	2.5	30	8,568	-24.4	38	130	5.4	23	8,575	-24.2	41	93	10.3	30	8,532	-27.7		254	23.5
300	31	9,695	-31.3	30	281	18.5	30	9,670	-32.9	26	27	1.4	30	9,672	-32.7	33	169	4.9	23	9,680	-32.8	39	103	9.7	30	9,621	-36.2		258	25.1
250	31	10,959	-41.5		272	22.3	30	10,926	-42.9		281	2.3	30	10,929	-42.8		208	6.8	23	10,937	-43.0		100	6.2	29	10,862	-45.7		258	31.3
200	31	12,433	-53.8		267	27.6	30	12,392	-54.8		262	5.8	29	12,392	-55.2		228	9.7	23	12,401	-55.5		141	4.1	29	12,315	-55.8		259	35.2
175	31	13,277	-60.5		267	27.6	30	13,232	-61.4		257	6.0	28	13,231	-62.0		247	8.4	22	13,238	-62.2		182	3.7	29	13,154	-61.1		255	34.0
150	31	14,221	-67.6		269	28.2	30	14,173	-68.0		251	10.1	28	14,167	-68.9		267	7.8	22	14,174	-69.3		247	3.3	29	14,101	-65.5		245	32.6
125	30	15,300	-74.2		274	22.5	29	15,250	-74.4		276	10.1	26	15,242	-74.7		265	7.8	20	15,245	-75.0		259	3.7	29	15,196	-70.4		243	24.3
100	30	16,584	-78.4		299	10.3	29	16,536	-77.0		344	4.5	24	16,528	-76.6		275	4.7	18	16,529	-76.2		116	7.4	29	16,505	-75.3		250	19.2
80	27	17,863	-76.8		342	4.1	28	17,837	-71.9		75	10.7	22	17,824	-72.2		69	2.1	16	17,830	-72.8		99	11.1	28	17,789	-76.6		238	10.7
70	24	18,837	-72.7		42	4.3	28	18,628	-69.6		83	13.2	20	18,616	-68.9		79	4.5	16	18,617	-70.2		92	16.7	28	18,570	-74.2		226	5.8
60	23	19,551	-67.6		73	5.2	28	19,553	-66.0		87	15.2	19	19,541	-66.1		84	7.8	16	19,542	-66.5		91	23.5	28	19,473	-68.4		111	2.9
50	23	20,662	-63.5		91	8.5	28	20,672	-61.9		84	19.8	19	20,657	-62.5		85	14.8	16	20,654	-63.6		90	29.3	28	20,585	-62.0		72	2.3
40	23	22,046	-59.3		90	14.4	28	12,066	-58.3		84	28.8	19	12,049	-58.0		87	25.8	16	22,036	-60.1		90	40.2	28	11,979	-58.1		19	1.2
30	22	23,870	-54.5		81	32.3	28	23,895	-54.4		89	43.1	19	23,878	-54.5		88	46.8	16	23,844	-57.0		89	58.5	26	23,808	-54.0		309	2.9
25	22	25,044	-52.0		88	42.9	27	25,073	-52.0		89	51.1	18	25,053	-52.1		90	53.8	16	25,005	-54.4		89	64.3	26	24,983	-51.8		303	.8
20	21	26,503	-48.5		88	43.3	27	26,530	-48.7		88	59.3	18	26,507	-49.2		90	61.0	16	26,443	-52.1		90	71.7	25	26,436	-47.7		292	2.5
15	20	28,418	-44.1		90	53.8	26	28,443	-44.2		90	62.4	16	28,412	-44.9		91	67.8	16	28,318	-49.2		90	82.0	15	28,334	-46.5			
10	20	31,176	-38.4		94	58.1	24	31,188	-40.1		89	68.0	9	31,109	-39.6				13	31,011	-43.8		94	81.6						
7	15	33,642	-34.7		89	59.3	19	33,655	-35.6		88	61.4							11	33,408	-42.1		89	67.8						
5	5	35,983	-32.0				8	35,970	-34.0										6	35,672	-38.4									
4																			5	37,218	-35.9									

Standard pressure surface (mb.)	MERIDA, MEXICO 6/ 1016 MB						MERIDA, MEXICO 7/ 1016 MB						YAP, CAROLINE IS. 4/ 1007 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	11	20.5	92	97	6.8	31	11	22.7	86	93	7.4	30	17	26.1	89	228	2.9
1000	31	147	21.5	85	105	11.9	31	148	23.1	82	100	12.0	30	80	26.1	87	230	3.9
950	31	587	19.8	79	124	20.2	31	593	21.0	76	116	16.9	30	520	23.8	82	227	6.4
900	31	1,058	18.0	64	128	18.7	31	1,062	19.2	58	114	14.8	30	1,005	21.0	80	233	7.0
850	31	1,546	16.0	48	126	10.7	31	1,552	17.0	52	90	10.1	30	1,500	18.4	76	242	6.8
800	31	2,059	13.0	44	126	6.0	31	2,067	13.8	54	50	5.8	30	2,018	15.5	74	244	5.6
750	31	2,593	10.1	40	116	5.1	31	2,602	10.8	47	43	4.3	30	2,557	12.6	69	239	5.1
700	31	3,171	8.3	35	84	4.1	31	3,181	7.8	41	51	2.3	30	3,142	9.7	64	244	3.9
650	31	3,771	5.4		57	2.3	31	3,786	4.6	34	26	2.1	30	3,748	6.2	66	235	2.3
600	31	4,430	1.7		5	1.9	30	4,437	1.1		360	4.1	30	4,407	2.7	63	219	1.0
550	31	5,114	- 2.6		267	1.2	30	5,120	- 2.6		354	6.4	30	5,097	- 1.3	62	105	.8
500	31	5,876	- 7.4		233	2.7	30	5,884	- 7.1		352	7.4	30	5,861	- 5.4	56	108	2.5
450	31	6,680	-13.0		237	6.6	30	6,688	-12.6		341	8.7	30	6,678	-10.1	49	90	3.3
400	31	7,577	-19.4		250	10.5	30	7,588	-18.6		324	10.5	30	7,581	-15.8	49	87	4.5
350	31	8,556	-26.8		256	15.0	30	8,570	-25.7		313	14.0	30	8,575	-22.3	43	78	4.7
300	31	9,648	-35.7		264	20.8	30	9,668	-34.2		300	18.8	30	9,689	-30.7		77	8.2
250	31	10,890	-45.3		271	28.4	30	10,917	-44.2		290	21.6	30	10,957	-41.0		71	11.9
200	31	12,345	-55.1		264	39.1	30	12,376	-55.1		281	28.0	30	12,434	-53.4		76	13.8
175	31	13,189	-59.7		260	39.8	30	13,218	-60.6		282	30.1	30	13,280	-60.5		77	18.3
150	30	14,141	-64.7		259	33.2	30	14,167	-65.4		283	29.9	29	14,223	-68.0		74	22.5
125	30	15,238	-70.4		260	28.4	30	15,266	-69.3		291	20.0	29	15,297	-75.8		79	23.3
100	29	16,544	-75.8		264	20.2	30	16,586	-73.0		329	11.9	24	16,565	-81.4		84	21.4
80	28	17,826	-77.2		270	9.1	30	17,891	-72.4		36	12.0	19	17,825	-77.4		87	20.4
70	28	18,594	-75.1		260	2.9	30	18,685	-67.9		65	14.0	18	18,599	-73.1		92	19.4
60	28	19,498	-70.0		103	1.7	29	19,620	-63.1		80	17.7	17	19,510	-68.7		93	19.0
50	28	20,602	-62.9		351	2.1	29	20,754	-58.6		78	18.5	17	20,614	-64.5		87	23.7
40	27	11,992	-57.8		184	4.1	28	12,170	-54.6		84	24.9	16	11,988	-60.7		88	37.3
30	26	23,824	-53.0		74	10.3	24	24,025	-50.1		88	26.2	16	23,803	-55.2		88	52.7
25	26	25,005	-50.0		82	12.8	22	25,225	-48.5		85	28.8	16	24,973	-52.9		86	57.7
20	23	26,471	-46.1		84	16.1	19	26,710	-45.0		85	27.4	16	26,422	-49.8		89	58.5
15	10	28,388	-43.0				7	28,649	-42.6				11	28,317	-45.2			
10													5	31,045	-39.5			

1/ May 1962
2/ June 1962
3/ August 1962
4/ October 1962
5/ December 1962
6/ March 1963
7/ May 1963

Also see reference notes with current data.

SOLAR RADIATION DATA

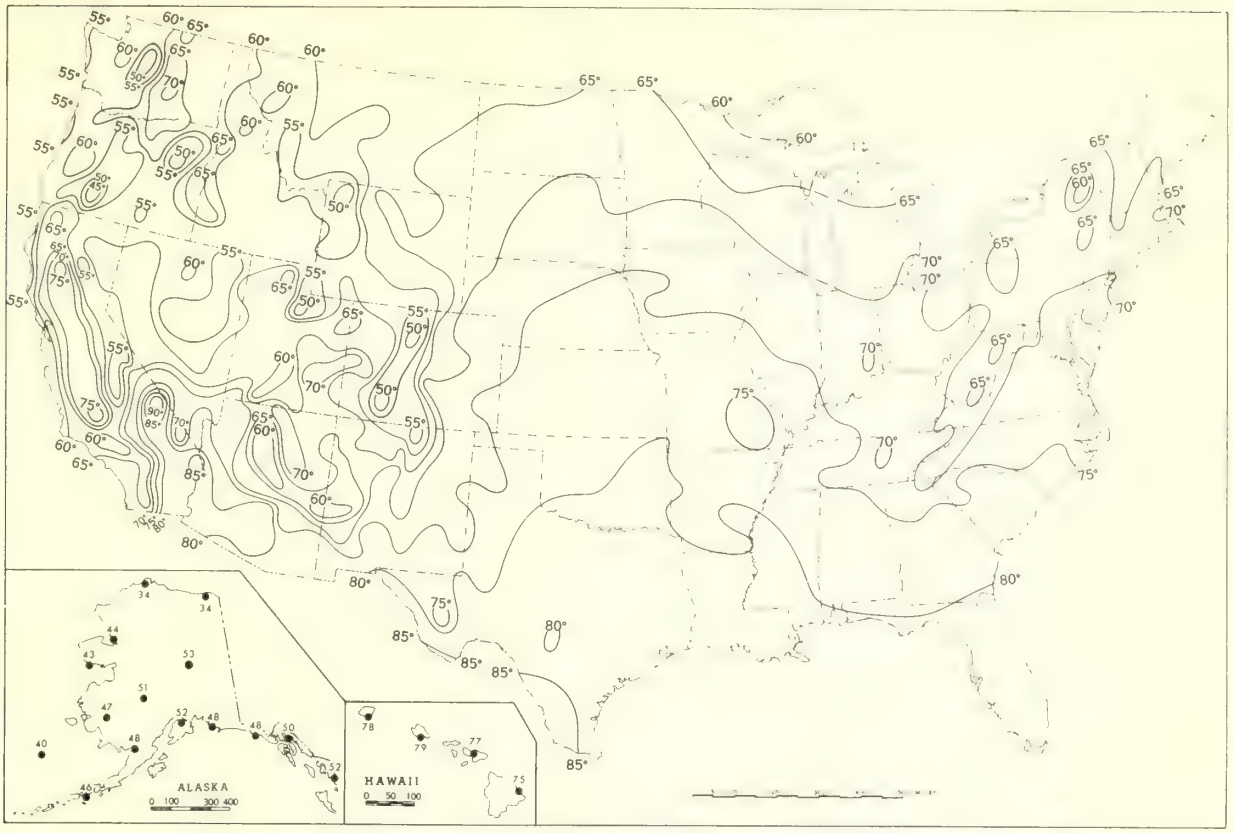
Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

MARCH 1963

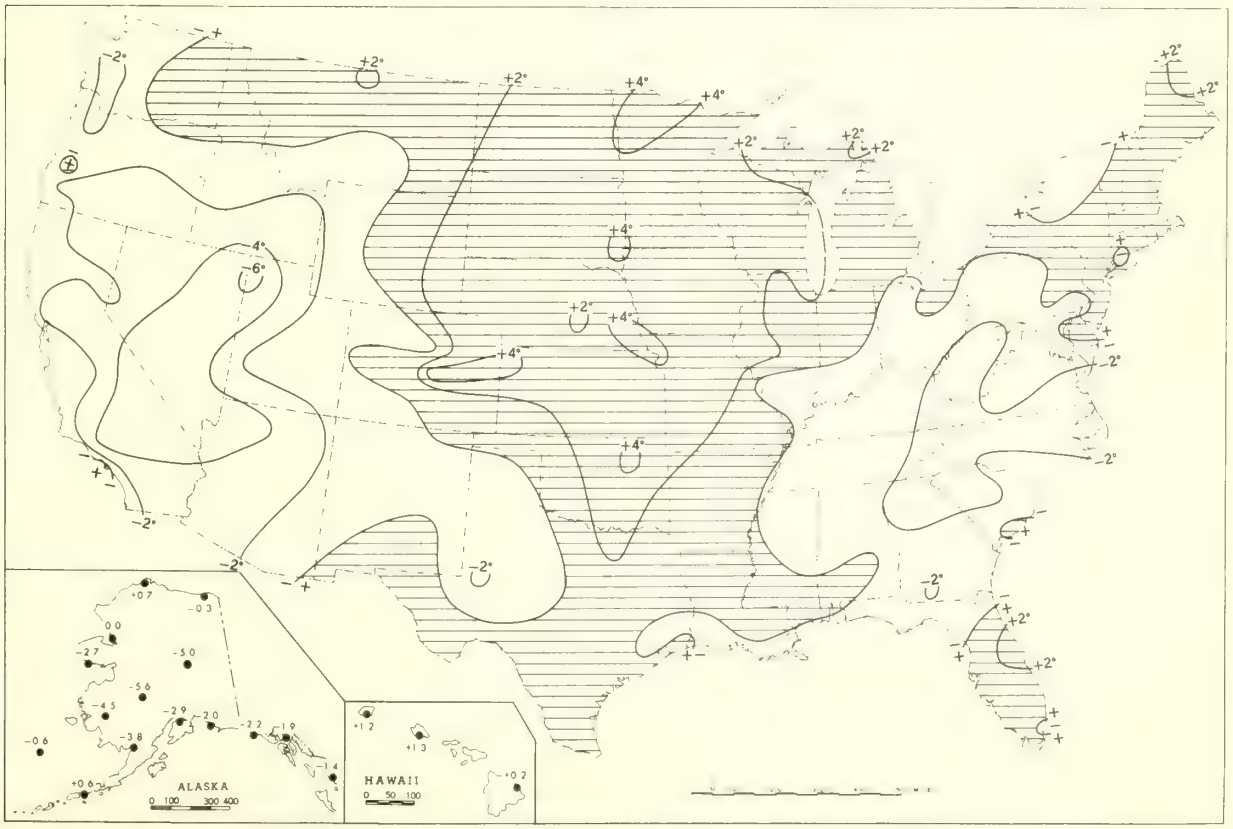
Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
AMES IOWA	324	251	181	38	177	314	300	430	259	433	44	60	243	473	180	221	388	47	114	508	516	480	469	456	251	524	518	432	314	508	298	314
ANNETTE ALASKA	200	200	81	221	226	296	311	225	237	79	188	189	253	359	122	364	328	205	143	229	343	259	336	429	429	154	92	233	340	463	484	259
APALACHICOLA FLORIDA	61	455	269	170	382	569	578	581	134	319	260	388	313	495	539	140	504	335	375	426	639	648	628	601	590	509	628	583	623	628	638	452
ASTORIA OREGON	129	297	394	268	409	405	399	418	126	230	135	409	193	458	165	432	508	257	234	310	273	308	330	143	92	160	63	166	168	305	254	272
ATLANTA GEORGIA	94	496	531	101	127	642	673	530	123	550	101	60	511	337	528	137	334	392	374	591	630	638	609	574	485	445	643	595	619	632	622	443
BARROW ALASKA	130	94	124	122	128	143	123	74	126	109	178	154*	126	173	200	200	214	209	203	200	185	247*	188	255	---	242	289	315	266	172	340	158
BETHEL ALASKA	184	67	117	118	146	83	87	56	142	306	152	286	247	190	291	185	275	355	390	186	216	272	211	200	205	448	432	462	435	262	276	235
BISMARCK N.DAK.	---	---	---	325*	375	375	379	289	347	359	138	279	450	453	339	38	454	402	441	486	439	450	430	173	88	510	487	244	483	492	521	343
BLUE HILL MASS.	217	98	417	146	157	38	452	469	276	113	377	51	120	414	499	489	107	299	491	93	406	552	449	539	460	521	396	464	563	121	585	335
BOISE IDAHO	355	295	462	457	316	---	462	451	452	410	215	472	486	225	360	413	170	401	465	493	374	223	75	502	502	490	79	276	228	401	274	359
BOSTON MASSACHUSETTS	218	80	412	118	197	24	461	446	293	---	---	40	100	416	497	482	80	309	468	77	354	555	482	506	440	494	395	458	571	121	577	334
BROWNSVILLE TEXAS	402	341	342	501	432*	551	384	248	---	228	519	533	409	210	184	547	548	---	172	488	290	192	320	526	398	200	400	417	411	628	627	365
CANTON ISLAND P.I.	700	694	700	687	604	684	690	696	684	644	633	672*	639*	---	676*	540*	639	628	666*	658	671	645	649	599*	---	655	663	500*	542	---	561*	297
CAPE HATTERAS N.C.	208	428	494	428	260	314	449	529	359	524	281	328	466	487	569	137	207	550	127	262	483	360	587	581	561	413	448	456	593	593	555	420
CARIBOU MAINE	415	380	346	417	424	177	252	393	423	179	475	269	246	396	518	502	246	295	516	418	498	430	460	518	380	208	121	391	558	250	563	376
CHARLESTON S.C.	228	427	461	209	298	499	540	569	167	575	174	---	---	---	---	---	---	---	---	409	625*	613*	617*	612	---	450	575	---	633	627	615	---
COLUMBIA MISSOURI	400	244	340	---	---	336	384	321	259	375	143	454	99	530	287	359	537	239	137	---	---	---	---	---	---	---	---	---	---	---	---	---
CORVALLIS OREGON	215	178	299	326	391	425	437	457	462	300	216	450	323	269	198	326	417	193	311	344	259	153	147	189	192	146	101	---	---	---	---	286
DAVIS CALIFORNIA	459	483	501	503	244	253	501	287	480	376	503	540	522	228	538	213	439	510	541	535	400	360	355	571	496	327	64	445	408	362	403	414
DODGE CITY KANSAS	385	394	467	74	517	518	521	298	520	38	504	166	236	552	520	385	550	387	585	581	582	577	550	537	620	601	609	511	520	322	403	453
E. LANSING MICHIGAN	322	337	113	23	100	163	422	328	464	477	126	157	217	473	475	164	57	466	67	213	273	489	516	447	244	111	532	513	366	406	296	302
EL PASO TEXAS	577	575	524	273	605	577	594	607	584	601	557	621	531	476	533	634	640	652	671	642	443	520	628	673	622	657	685	673	489	482	450	574
ELY NEVADA	435	343	434	526	427	526	482	522	515	321	364	425	---	428	332	431	268	---	---	581	594	364	---	---	510	---	381	274*	627	644	593	432
EPPLEY.NEWPORT R.I.	170	138	399	207	95	53	423	419	298	130	358	65	109	458	480	466	125	314	466	72	307	523	398	506	427	496	496	479	542	189	562	328
FAIRBANKS ALASKA	---	212	85	83	99	78	85	61	100	131	236	116	258	168	271	256	285	288	298	297	280	252	164	124	72	208	285	384	379	363	316	208
FLAMING GORGE UTAH	336	287	197	215	441	502	510	507	512	491	193	237	537	493	220	511	430	253	566	580	---	525	521	519	585	536	547	335	---	---	---	429
FORT WORTH TEXAS	468	517	41	264	522	506	534	398	489	214	537	550	449	440	101	493	477	327	601	660	653	491	684	321	---	---	---	564	535	502	520	459
FRESNO CALIFORNIA	395	459	470	464	355	442	433	432	402	345	434	506	498	339	555	126	400	497	517	531	492	422	330	571	479	337	30	589	566	591	456	434
GLASGOW MONTANA	241	305	214	416	131	220	346	180	347	308	288	227	442	404	393	368	444	422	361	433	326	307	417	196	480	474	459	67	419	435	475	340
GRAND JUNCTION COLO.	273	225	194	309	533	539	540	535	539	543	285	222	585	538	276	466	209	385	525	586	586	501	563	547	613	576	569	---	635	---	---	461
GREAT FALLS MONTANA	223	310	---	373	256	227	388	254	394	280	265	281	428	348	180	306	422	302	333	299	302	373	394	312	472	442	---	195	405	462	268	327
GREENSBORO N.C.	77	459	508	306	62	480	528	532	334	529	59	58	467	349	551	56	250	517	328	555	362	601	599	561	514	105	584	527	571	566	480	402
GRIFFIN EXP.STA.GA.	101	531	530	79	118	630	601	618	101	597	154	145	541	220	251	161	246	277	465	668	696	698	679	630	576	434	697	649	675	702	679	456
INDIANAPOLIS INDIANA	154	397	481	28	64	350	319	531	116	475	51	503	64	361	404	50	495	375	211	161	361	582	533	500	179	65	549	607	496	241	44	314
LAKE CHARLES LA.	562	---	414	291	98	588	601	470	548	348	113	461	453	120	155	298	401	210	316	549	543	409	544	323	434	552	568	553	532	548	573	419
LANDER WYOMING	215	289	260	456	347	485	483	481	469	474	196	339	547	587	465	526	447	497	540	532	542	515	533	542	---	545	531	295	542	568	508	458
LARAMIE WYOMING	105	239	174	293	475	462	452	443	458	457	244	338	496	482	416	473	343	117	521	501	506	505	443	473	546	431	434	375	553	524	397	409
LAS VEGAS NEVADA	512	484	441	552	478	524	505	526	519	516	540	539	562	556	460	182	480	---	589	598	589	329	511	615	591	---	536	401	642	636	564	516
LITTLE ROCK ARKANSAS	---	---	---	---	179	500	498	489	415	441	360	448	423	415	117	136	448	220	451	543	565	557	538	306	367	510	519	501	515	488	492	424
LOS ANGELES CALIF.	475	439	505	517	477	490	464	463	495	465	486	442	501	416	426	187	439	541	570	579	547	489	514	572	537	456	463	347	527	564	502	480
LOS ANGELES CALIF. U	453	430	513	518	488	496	360	489	372	397	447	404	521	407*	555	193	387	551	582	595	561	510	462	601	542	477	480	308	509	568	464	472
MANHATTAN KANSAS	373	273	284	13	256	398	433	266	460	246	116	62	241	519	409	472	511	61	424	515	546	522	466	454	500	555	375	510	405	172	161	355
MATANUSKA ALASKA	193	84	77	43	119	60	25	169	28	169	222	80	285	82	293	149	191	210	306	327	292	330	348	258	67	205	401	365	395	398	314	209
MAUNA LOA OB.HAWAII	536	557	702	584	350	---	695	713	736	730	230	575	---	---	223	281	313	513	347	696	508	377	438	665	769	608	641	489	582	550	412	529
MEDFORD OREGON	365	168	377	403	193	340	427	373	444	351	338	452	380	180	212*	322	262	417	461	388	395	432	305	400	361	119	148	406	431	497	401	333
MIAMI FLORIDA	453	487	454	356	566	477	316	526	397	513	543	527	573	543	579	560	609	607	619	565	636	630	564	511	615	644	615	611	440	624	361	533
MIDLAND TEXAS	---	---	---	---	---	---	---	---	---	---	---	552	526	239	471	579	561	581	597	585	402	542	460	601	595	489	580	606	571	300	520	---
NASHVILLE TENNESSEE	23	417	439	321	91	531	523	504	81	488	17	312	510	85	453	128	547	126	256	554	615	595	564	527	---	---	549	520	525	536	506	391
NORTH OMAHA NEBRASKA	338	138	186	64	282	439	397	485	418	423	107	50	258	515	361	298	469	39	195	514	572	536	528	---	297	---	---	---	390	527	365	340
OAK RIDGE TENNESSEE	59	364	442	214	52	389	466	473	191	472	37	65	434	350	415	215	408	252	169	507	323	547	522	480	247	330	523	494	534	510	498	354
OKLAHOMA CITY OKLA.	288	476	170	125	409	419	516	382	449	66	508	509	140	492	152	548	518	378	563	547	571	561	518	476	568	559	559	457	481	45	455	416
PAGE ARIZONA	---	353	---	492	483	465	428	488	440	484	412	443	526	507	421	270	182	447	547	553	547	440	488	573	553	529	484	269	572	565	505	464
PHOENIX ARIZONA	529	518	368	515	548	539	561	551	560	547	522	547	527	567	460	578	127	599	628	624	612	382	630	636	616	575	615	350	365	643	601	530

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

Chart I. A. Average Temperature (°F.) at Surface, June 1963.



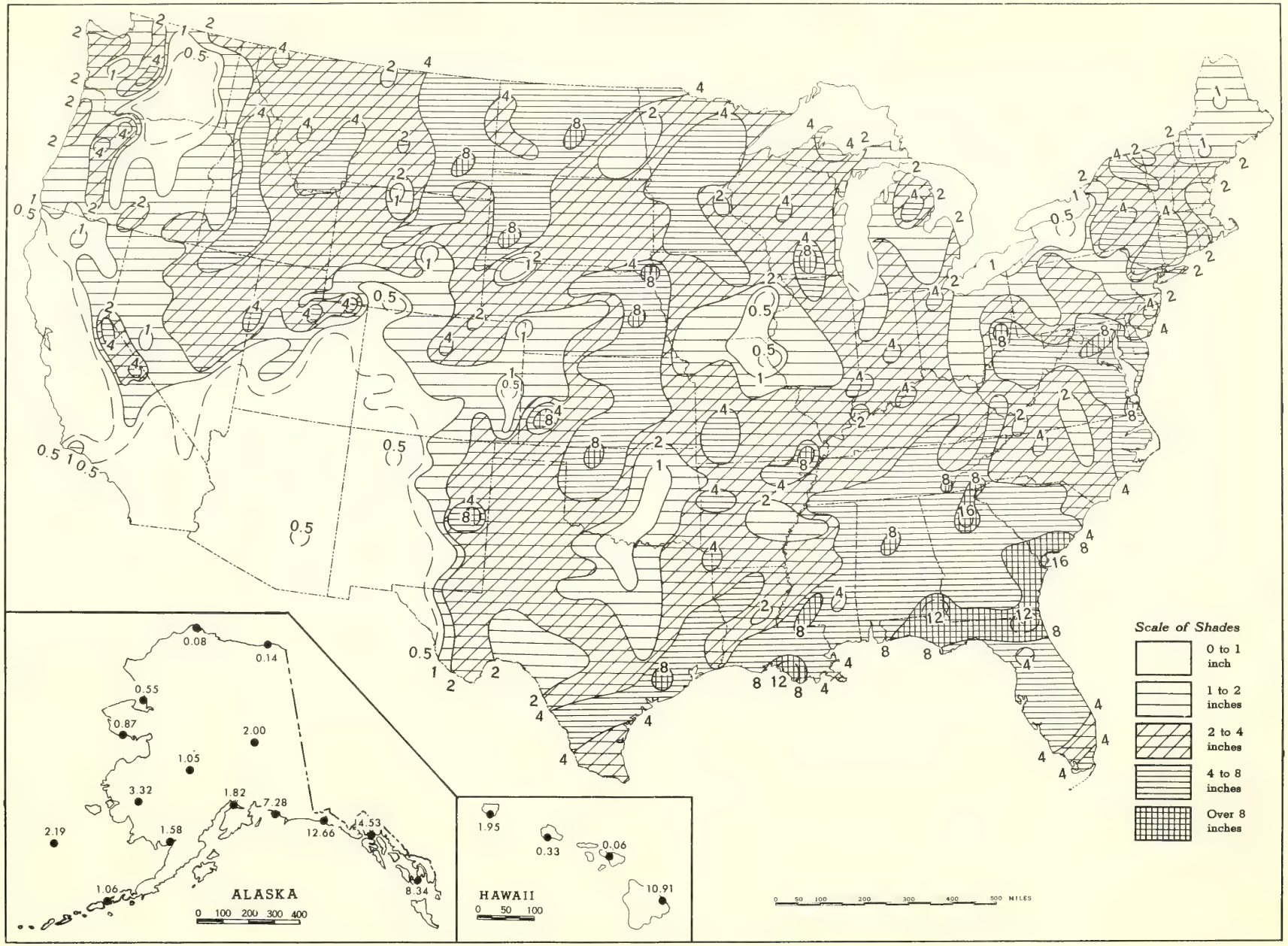
B. Departure of Average Temperature from Normal (°F.), June 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

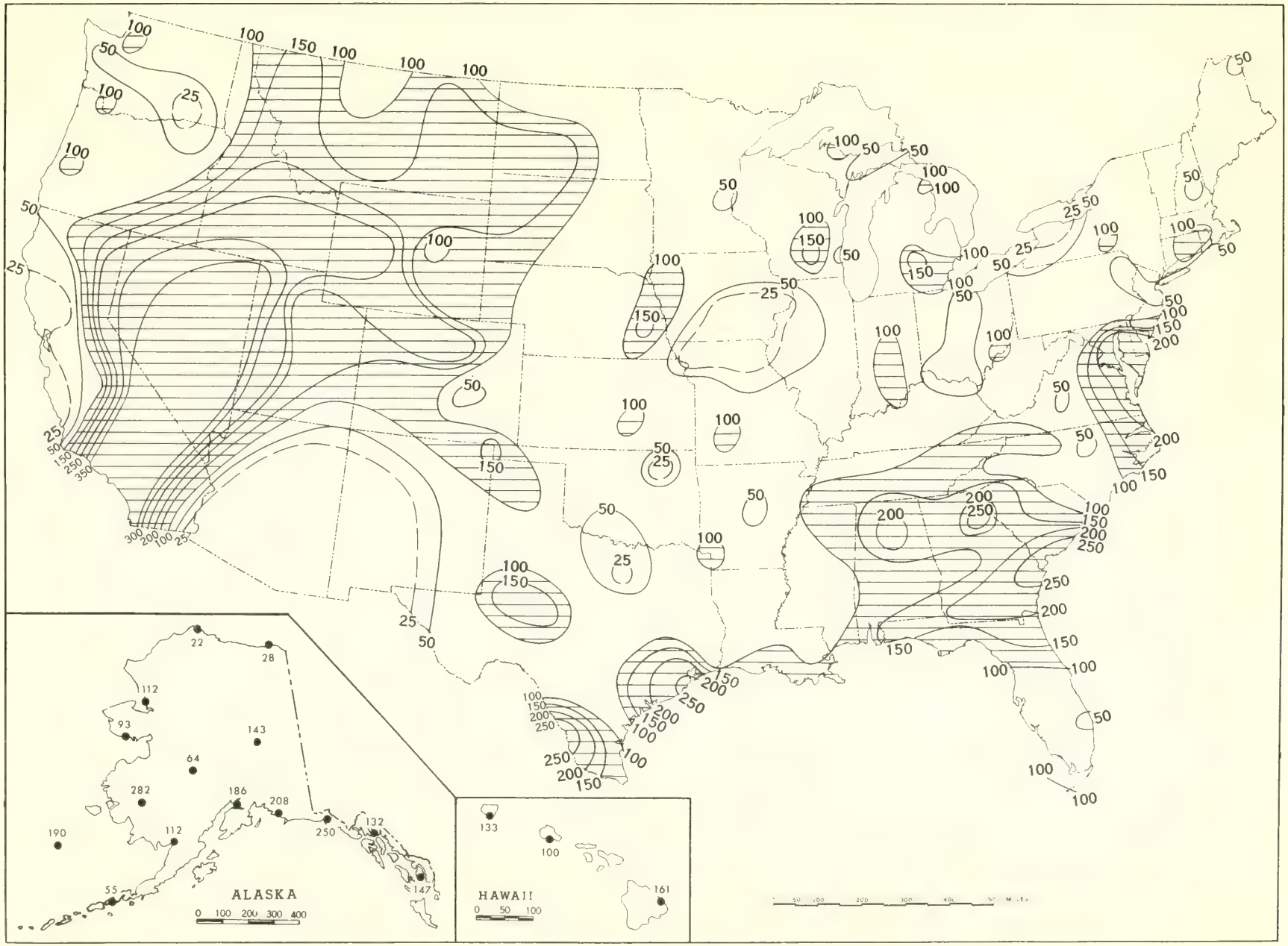
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), June 1963.



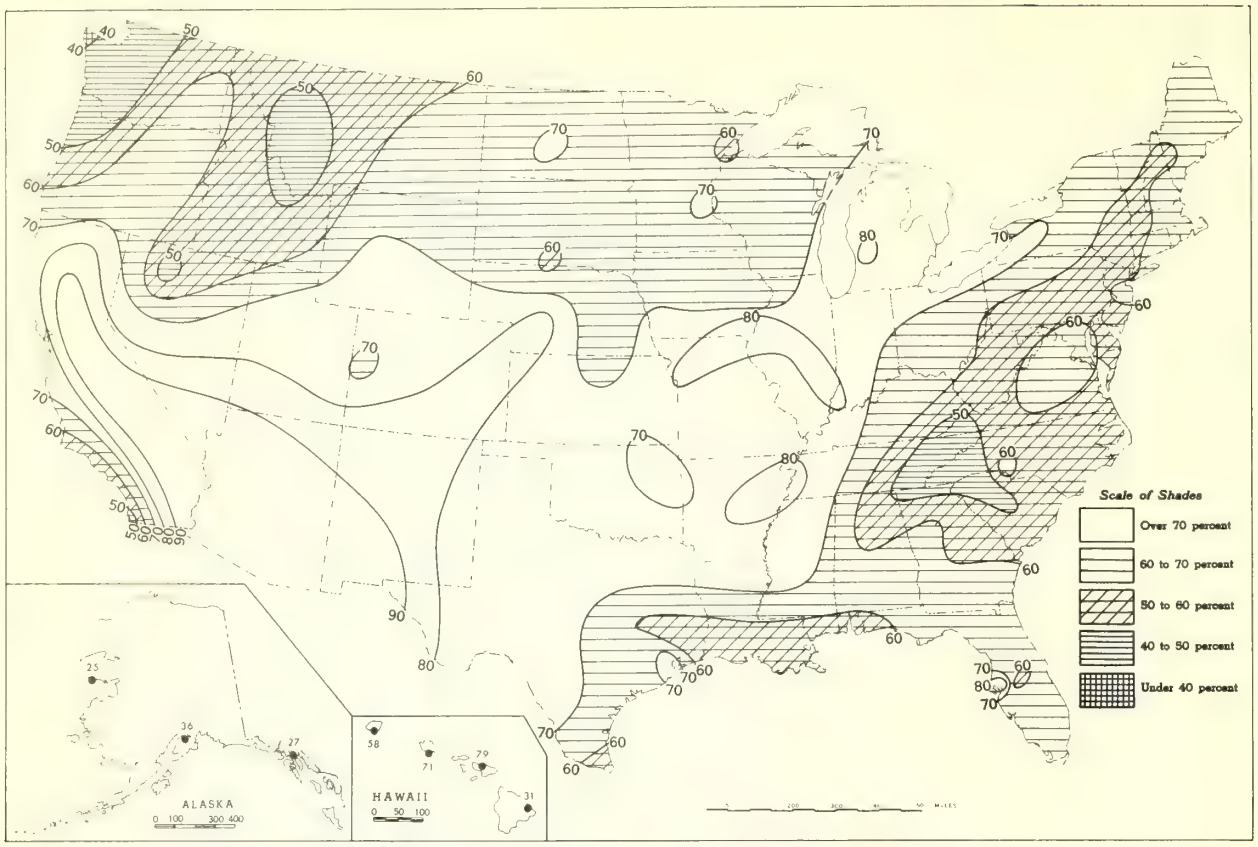
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, June 1963.

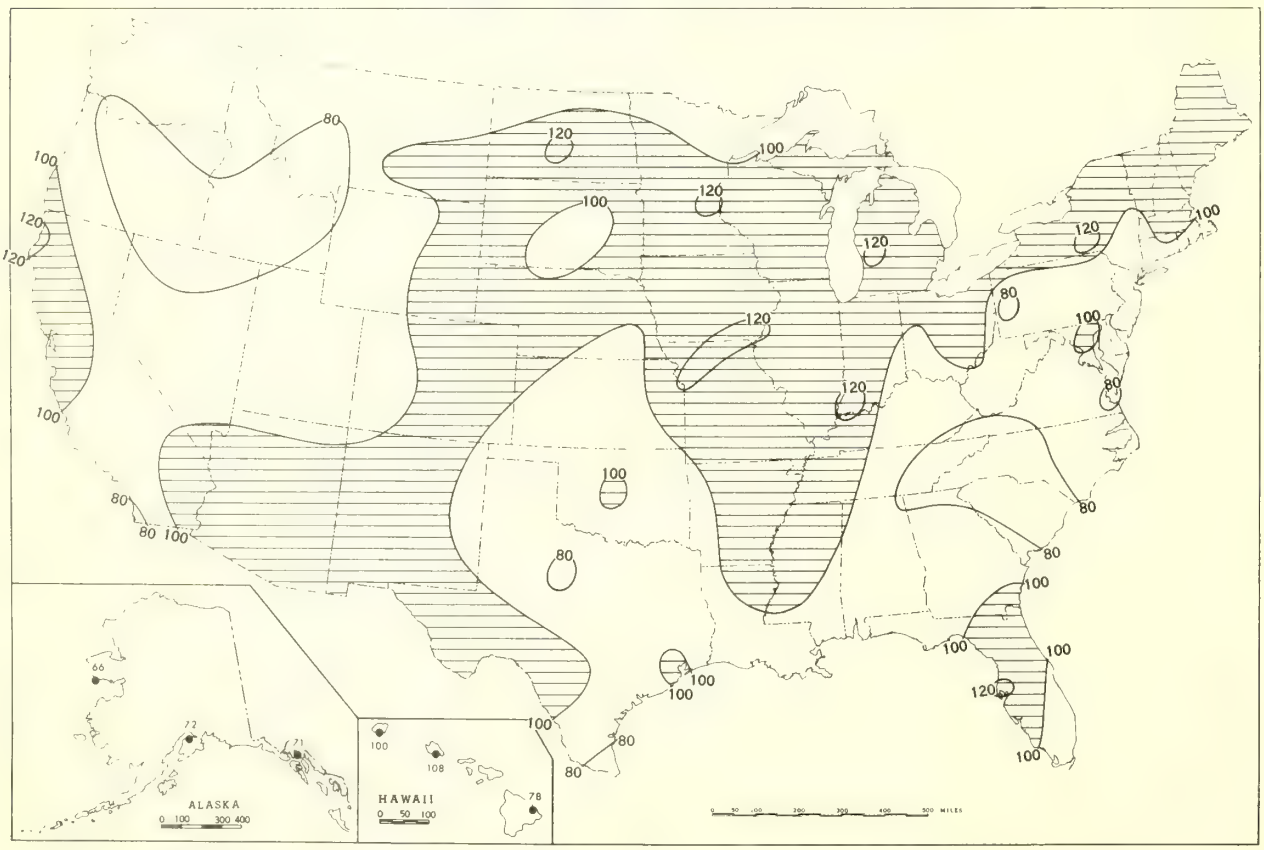


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, June 1963.

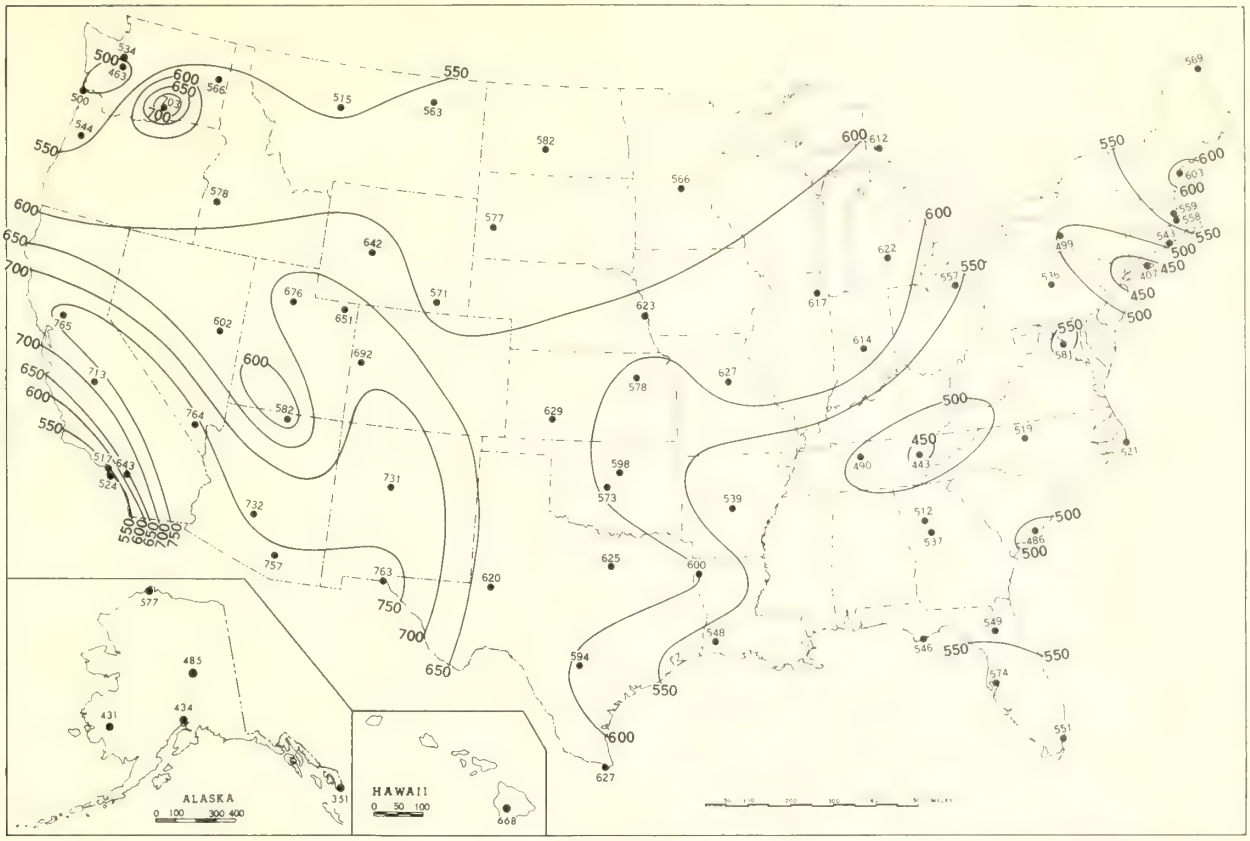


B. Percentage of Mean Monthly Sunshine, June 1963.

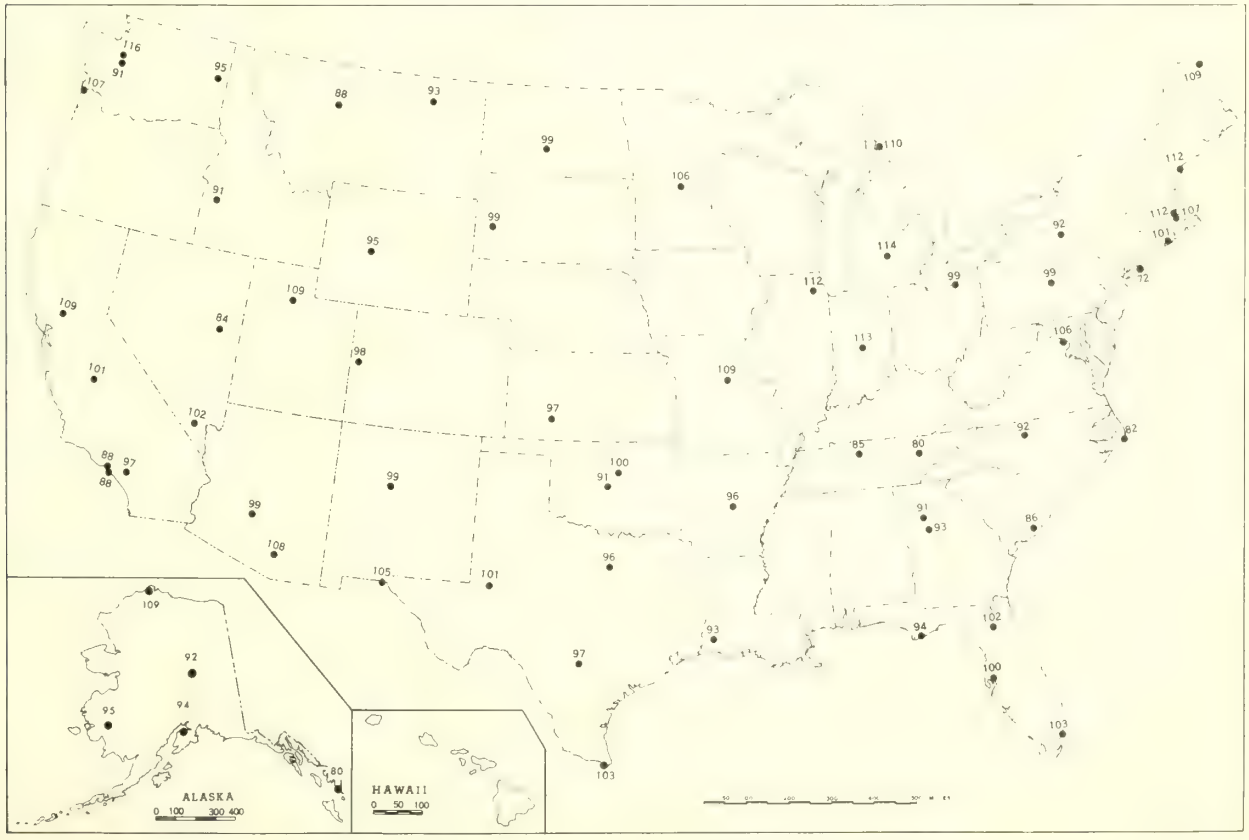


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, June 1963.

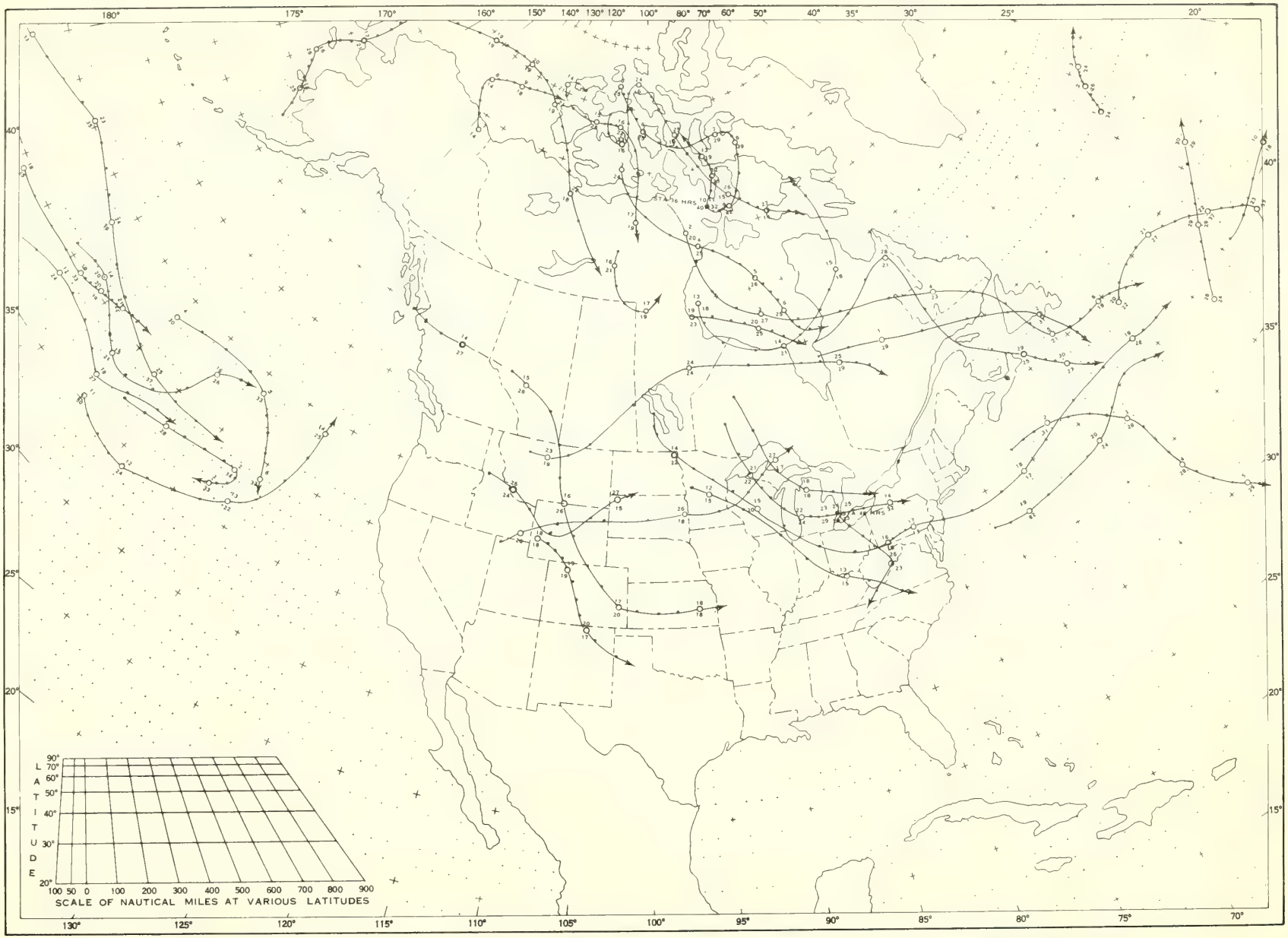


B. Percentage of Mean Daily Solar Radiation, June 1963.



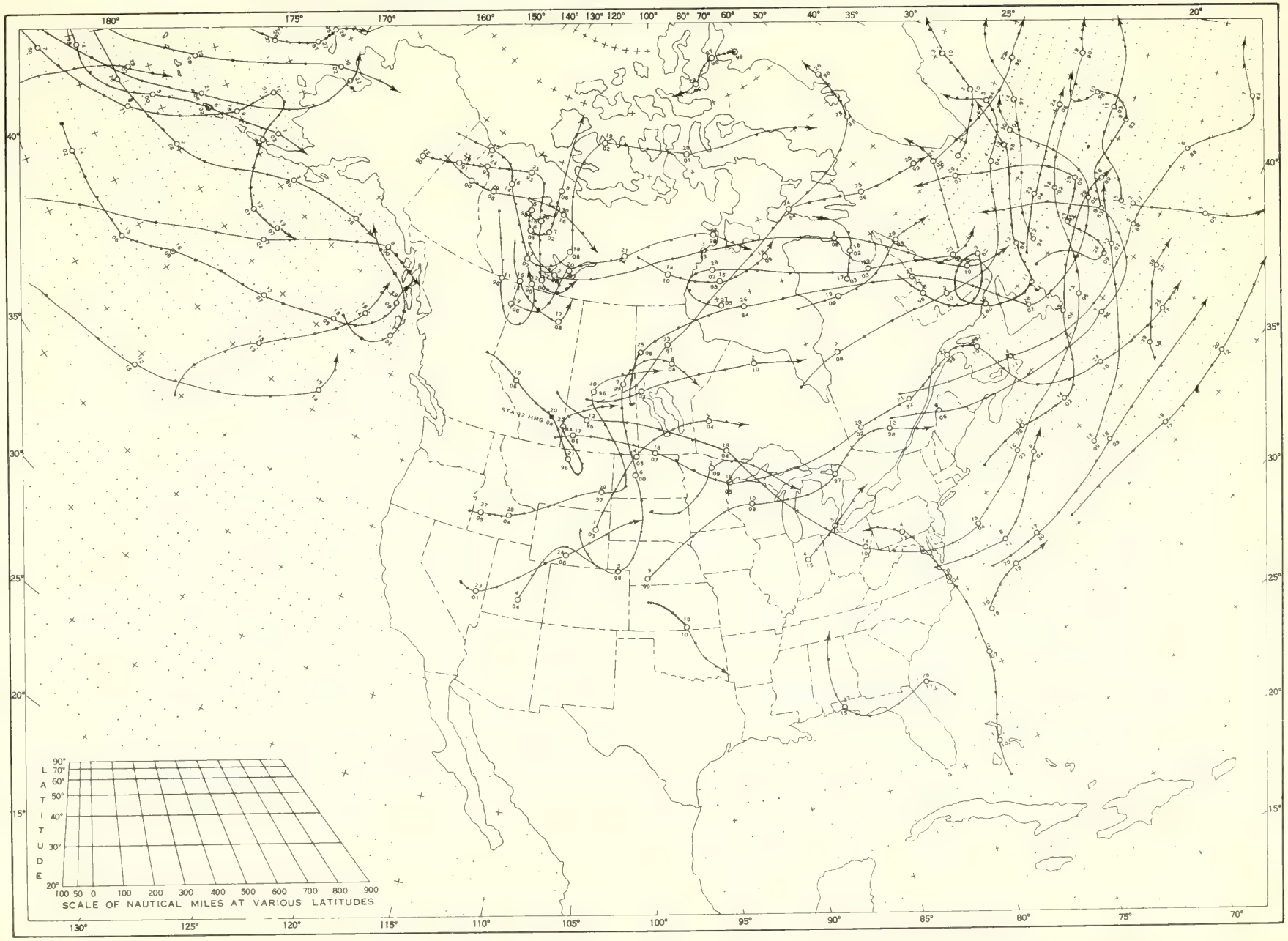
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, June 1963.



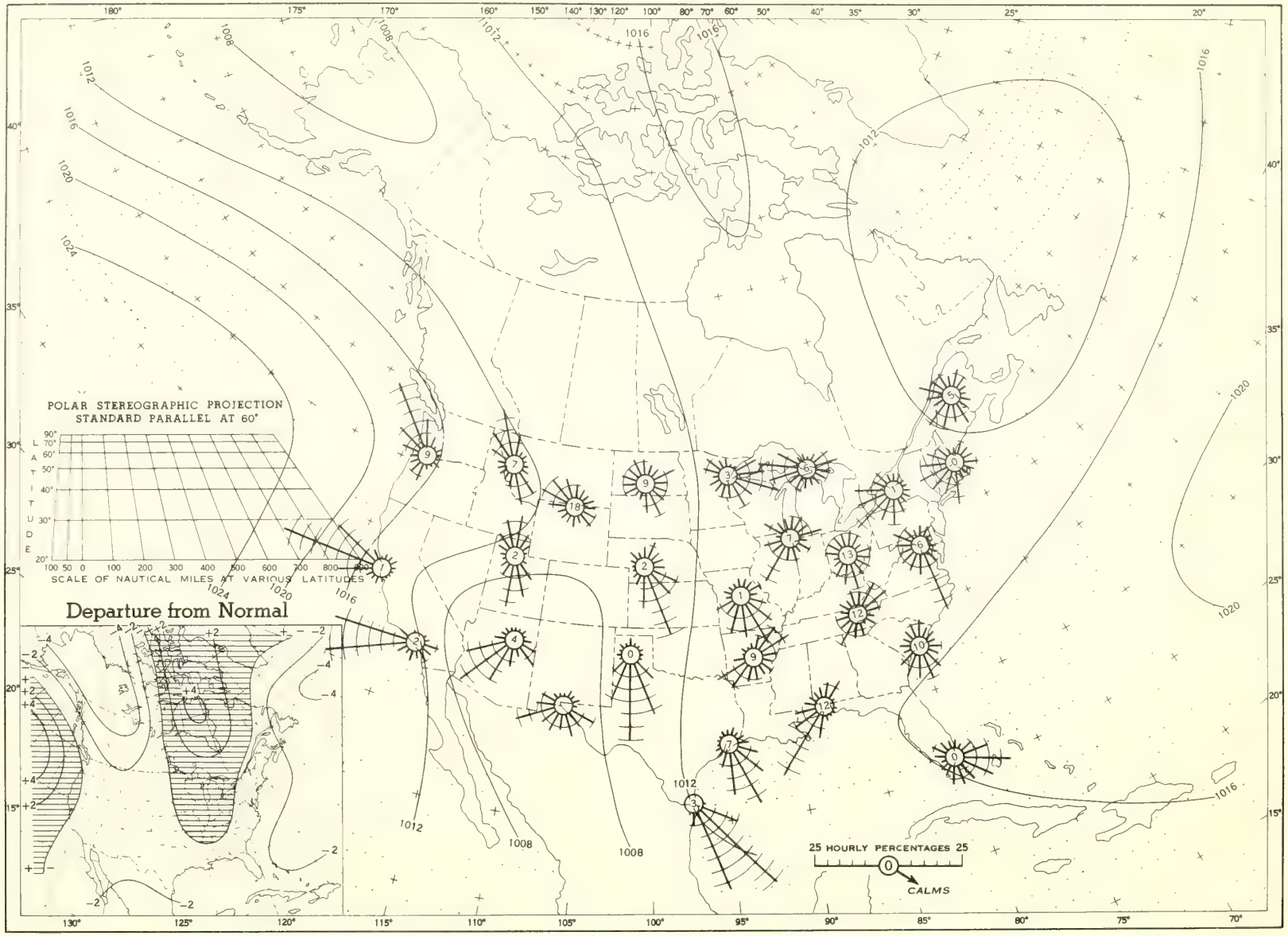
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, June 1963.



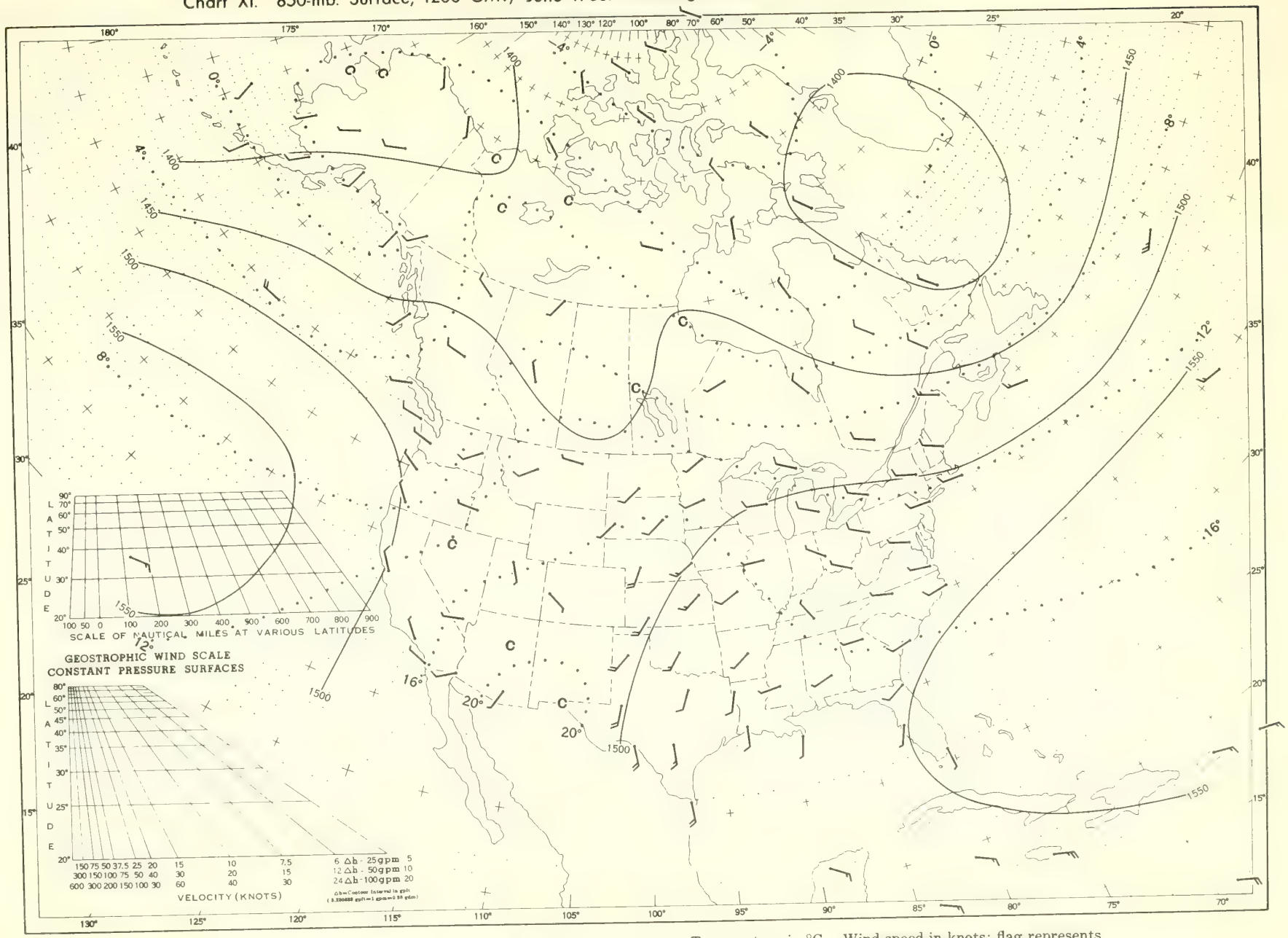
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, June 1963. Inset: Departure of Average Pressure (mb.) from Normal, June 1963.



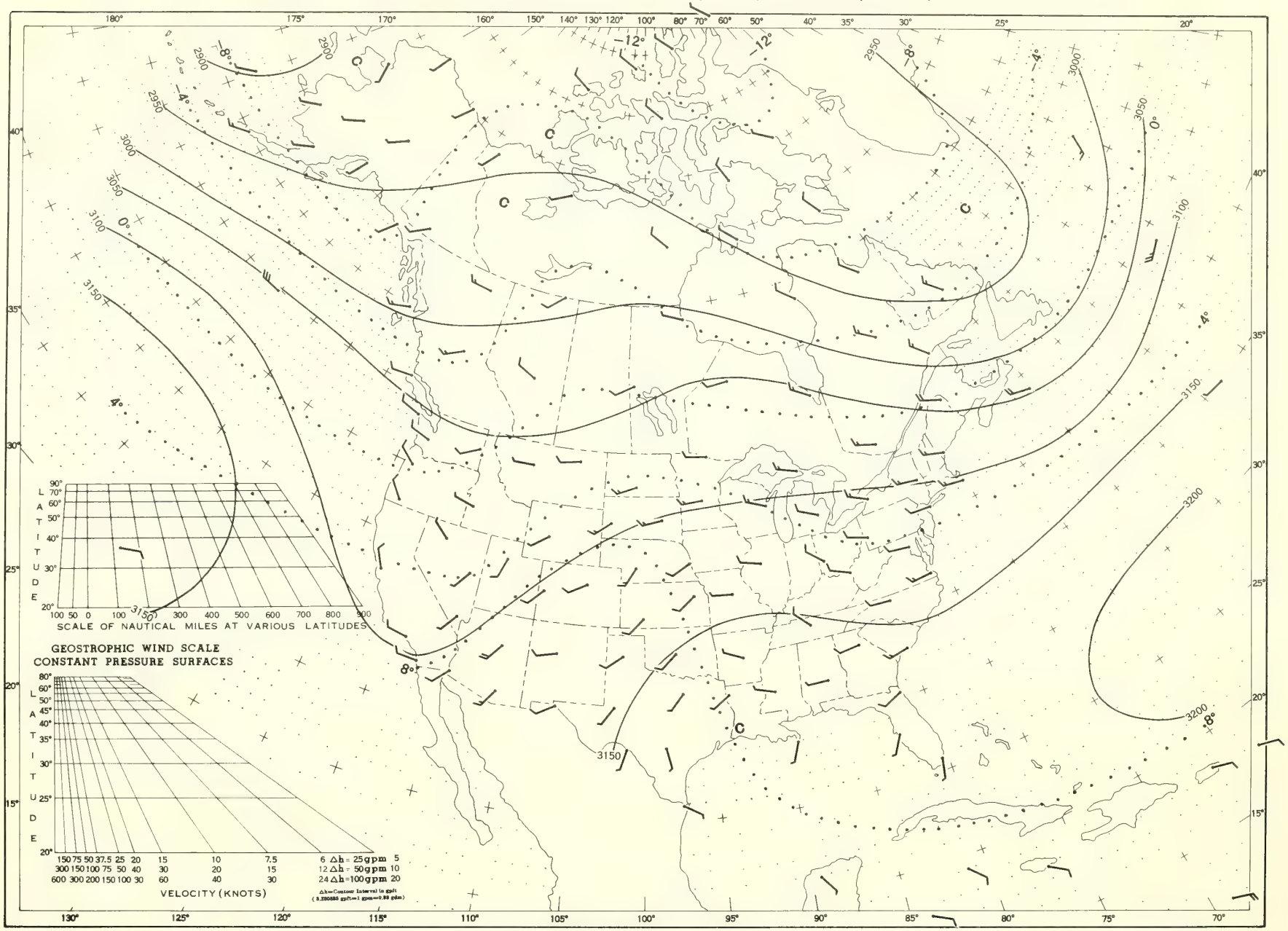
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.



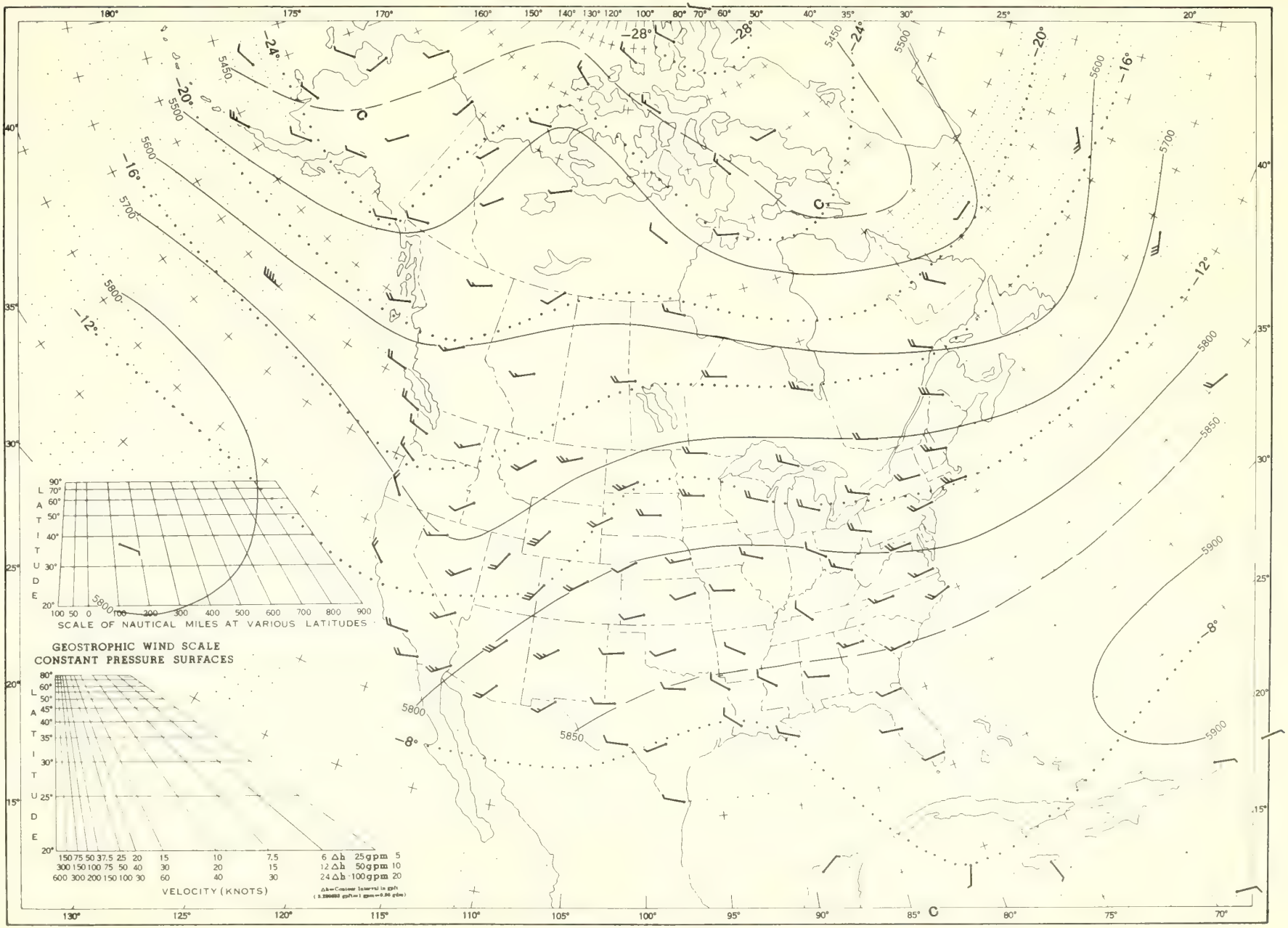
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.



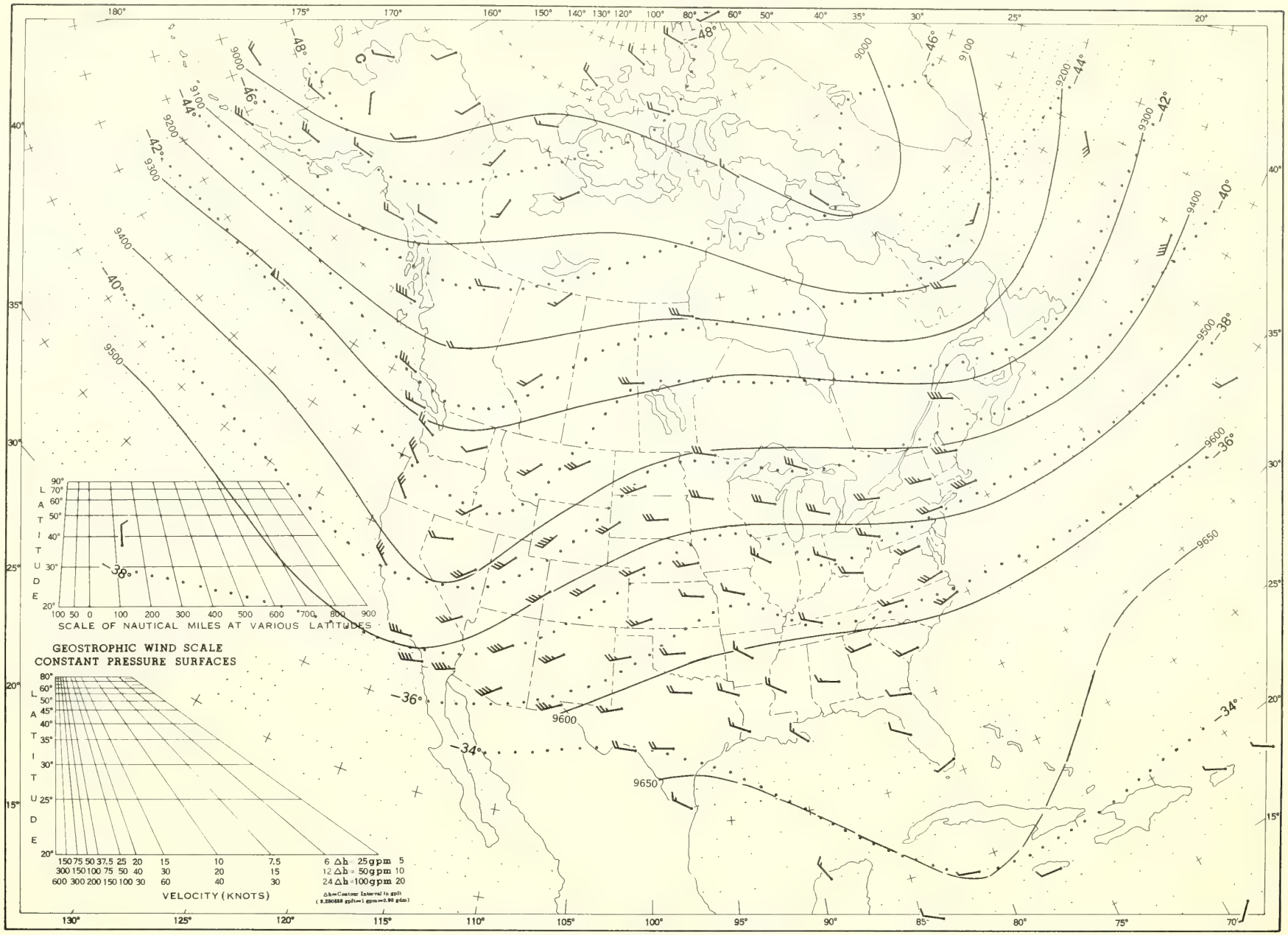
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.



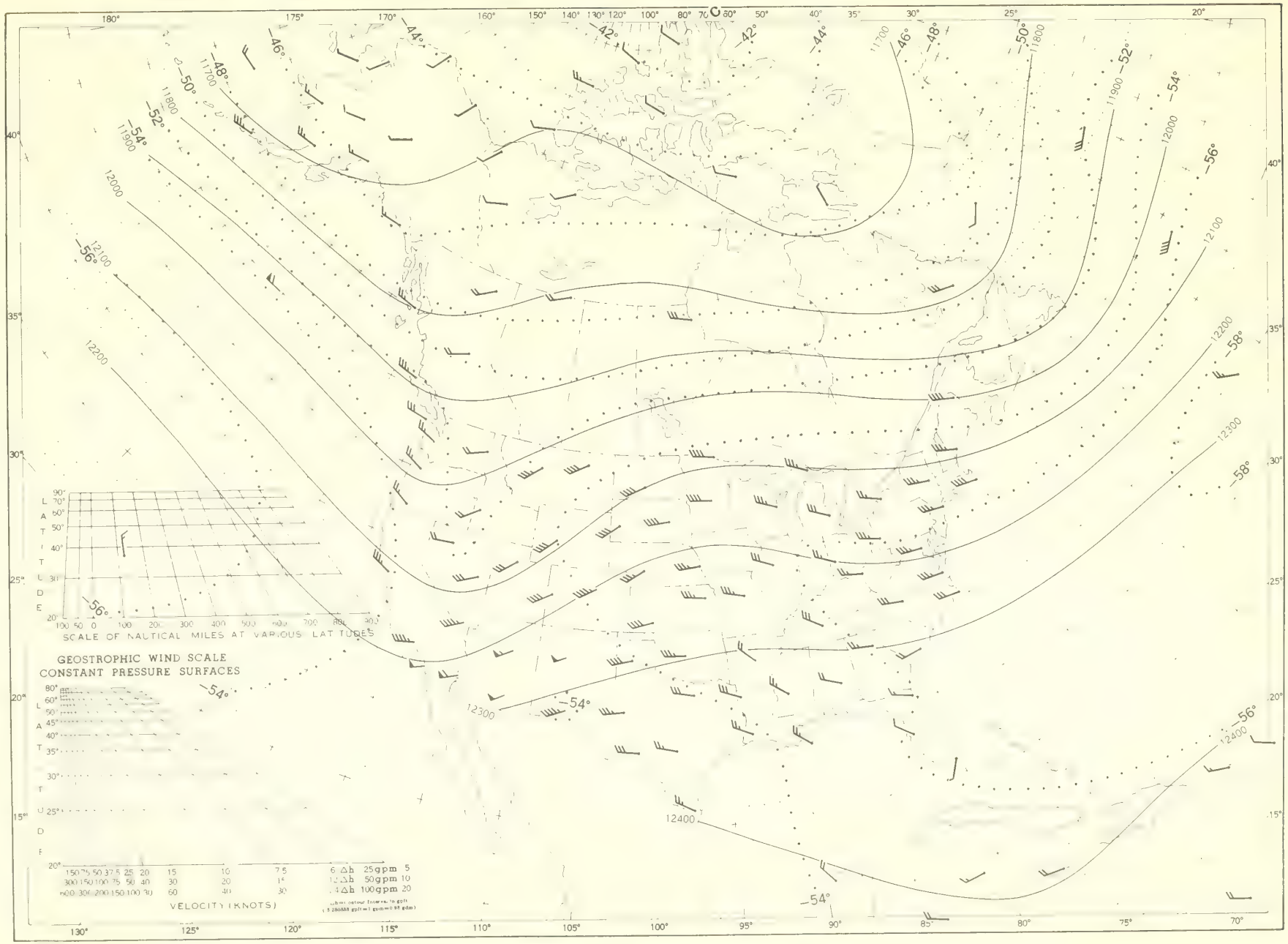
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.



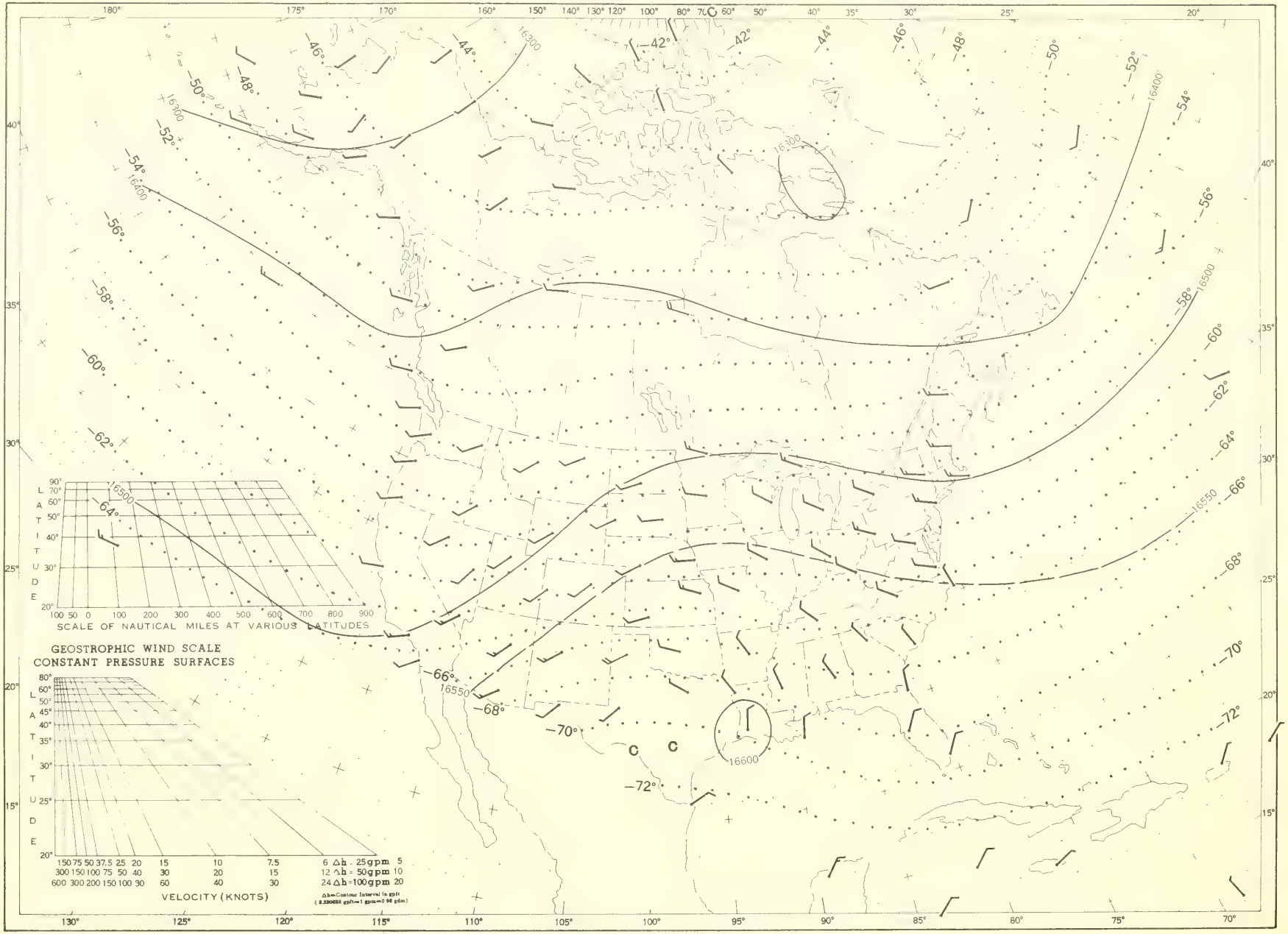
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.



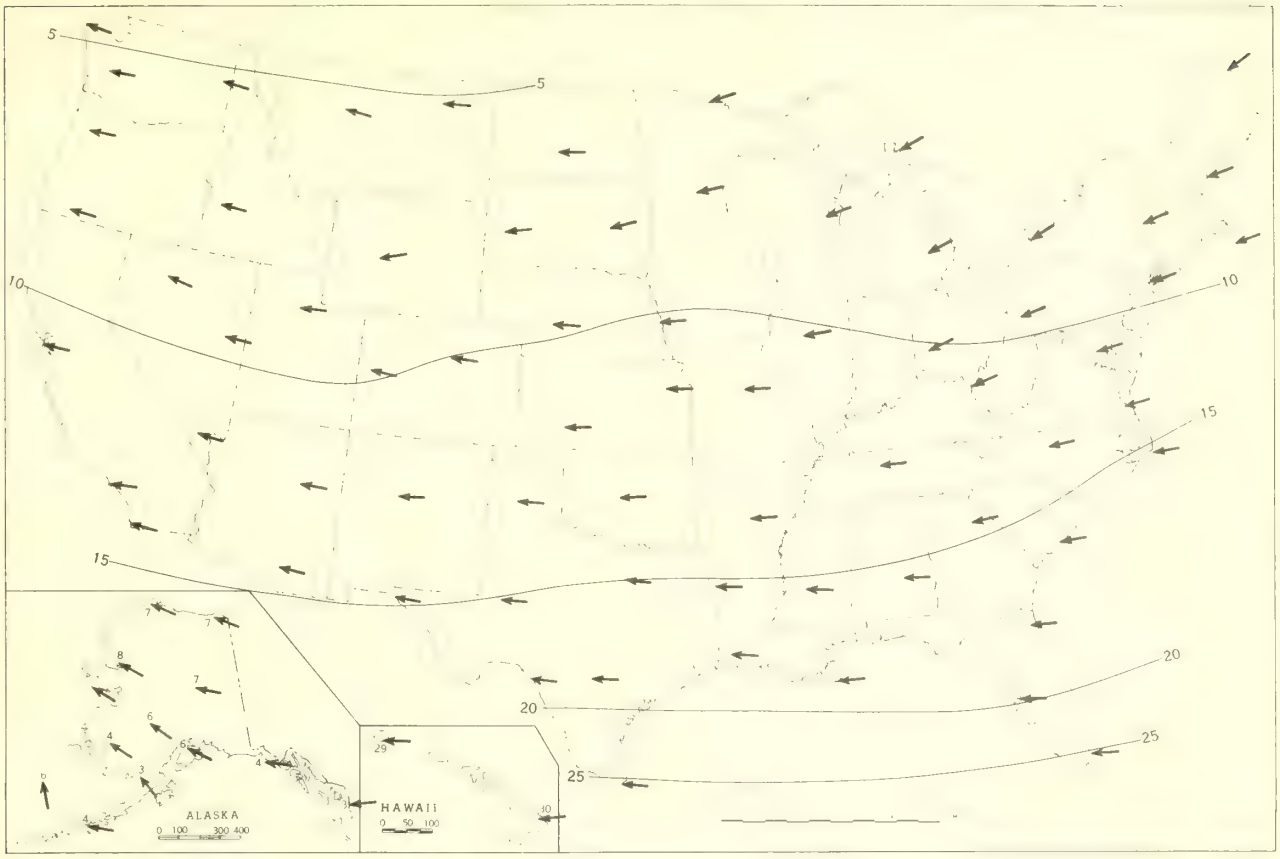
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, June 1963. Average Height and Temperature, and Resultant Winds.

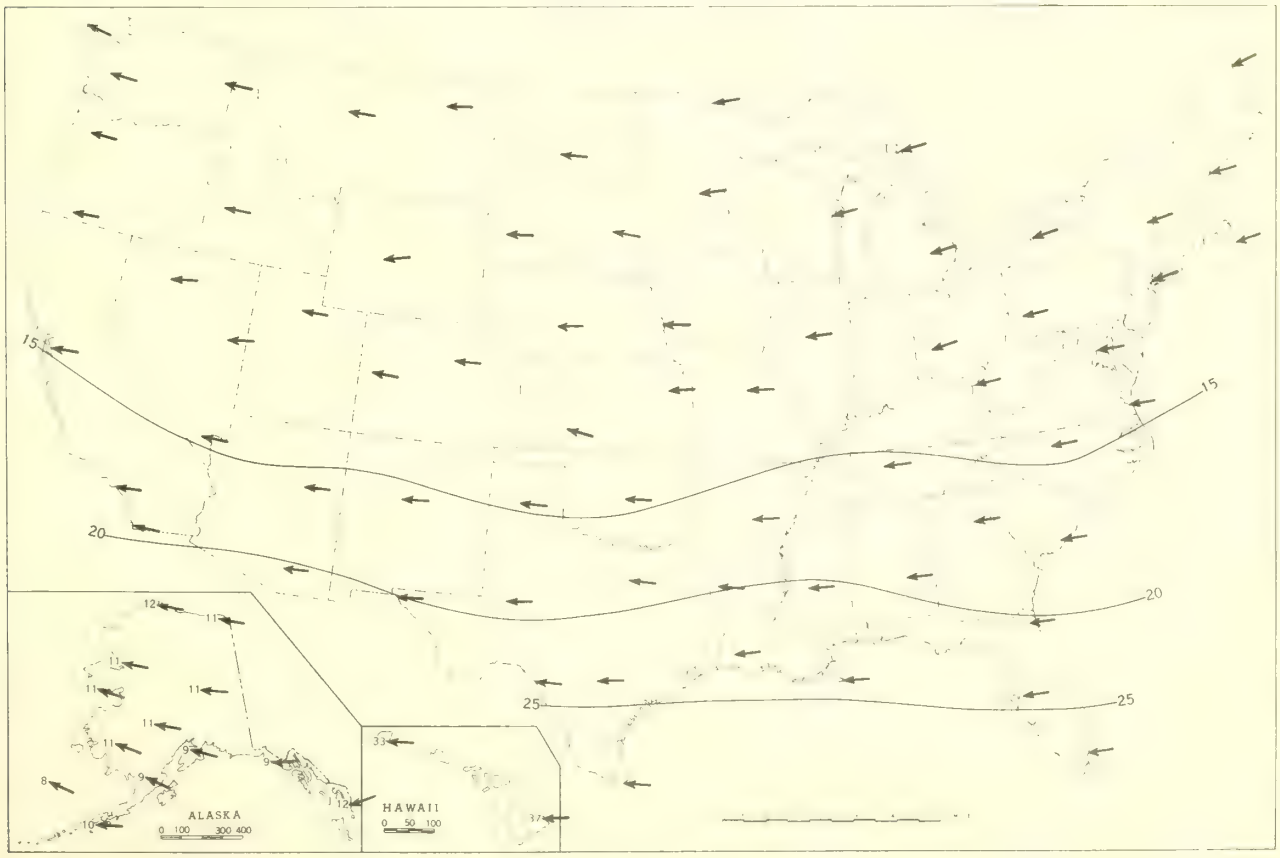


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, June 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, June 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 7 JULY 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

July provided weather in almost endless variety. It was cool and cloudy in the Northwest, hot and dry in the Southwest. Crop-saving rains fell over the Northern Prairies. Hot and cool weather alternated in the Northeast. Frequent thundershowers replenished the soil moisture over much of the Southeast. Frost occurred in the Alleghenies. Warm weather predominated in the southern Rockies. The following paragraphs describe, in a general way, the weather over the Nation in July 1963.

July was unusually cloudy over the Northwestern States. The cloud cover held afternoon temperatures down and prevented radiational cooling at night. The highest temperature at Seattle, Wash., was 78°. This was the only July of record in which the temperature at Seattle did not reach 80°. At Olympia, Wash., July was cool and cloudy. Afternoon temperatures averaged 5.7° below normal and early morning temperatures averaged 2.0° above normal. July was cloudy, cool, foggy, and wet at Stampede Pass, Wash. The temperature reached only to 72° during the month. It had exceeded this in all previous Julies. The cool weather at Yakima, Wash., increased the growers problems in the control of mildew and insects in crops.

Cool, cloudy weather persisted over Oregon also in July. Temperatures at some stations averaged above normal on only 1 or 2 days during the month. At several Oregon stations it was the coldest July of record.

Nevada was cool but sunny, and like California, received very little rain. Temperatures at Elko, Nev., averaged below normal on every day of the month. The sun shone 98 percent of the time it was above the horizon at Reno and 99 percent at Ely.

Lewiston, Idaho, was unusually cool and Pocatello received no measurable rain--only a light sprinkle on 2 days.

Similarly, July 1963 was the driest July of record in parts of Arizona. Phoenix received 0.03 inch of rain on the 22d., the first measurable rain in 87 days. The Rocky Mountain States and Texas were dry. Numerous stations in Texas not only received little rain, but also experienced one of the hottest months of record. Temperatures at Abilene, Tex., reached 95° or higher on 28 days and 100° or higher on 13 days. They reached 90° or higher at Denver, Colo., on 25 days. This is 11 days more than the average for Denver.

In contrast with the dryness over western portions of the Nation, heavy thundershowers occurred over the Central and East. Williston, N. D., received 5.03 inches in 24 hours on the 9th and 10th, flooding basements and streets. Heavy rains in July ended the drought at Sioux Falls, S. D. Crop-saving rains fell at St. Joseph, Mo., on the 12th and 31st. Flash floods at Tulsa, Okla., totaling 7.54 inches on the 27th, forced residents from several homes in the northern part of the city.

Well distributed rains throughout the month relieved the drought from the Northern Prairies to the Gulf of Mexico. Generous rains beginning on the 13th ended a dry period which had begun in early June. Louisville, Ky., received 7.33 inches of rain in July--the greatest July rainfall in 40 years. There was much thunderstorm activity along the Gulf. Thunder or lightning occurred at Mobile, Ala., on almost every day.

Temperatures ranged widely in the Northeast. Reports of frost came from West Virginia. Erie, Pa., registered 44° on July 9, an alltime record low for July. Buffalo, N. Y., registered record-breaking heat on July 1 and record-breaking cold on July 6 and 9. July 5 to 11 was the coldest of record at Hartford, Conn., but July 24 to 29 was extremely hot over the Northeast. Boston, Mass., remarked that the weather was too dry for agriculture but ideal for vacationers. Nantucket complained that only three clear days during the month made July a poor month for the tourist trade. The drought continued in Virginia. Richmond received 0.52 inch of rain during the month--less than one-tenth of the July normal.

So, as one might expect in a Country as large as the United States, the variety of weather was almost without limit. Some areas were too cold; others, too hot. Many, too dry; a few too wet. Few storms, here; tornadoes and waterspouts, there.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	99	29+	2 Stations	48	11	Reform	17.61	Dayton	1.72
Alaska	Manley Hot Springs	88	10+	Holy Cross	26	4	Yakutat WBAP	9.31	Tok	T
Arizona	Buckeye	118	13	2 Stations	36	14+	Canelo 1NW	6.21	22 Stations	.00
Arkansas	2 Stations	108	23+	Gilbert	47	10	Blakely Mountain Dam	16.32	Bentonville	.53
California	Death Valley	120	16+	2 Stations	26	25+	Little Valley	1.15	546 Stations	.00
Colorado	Eversoll Ranch	110	23+	Fraser	25	30+	Ruxton Park	5.52	Penrose 3NNW	T
Connecticut	2 Stations	97	2	2 Stations	39	9+	Wolcott Reservoir	7.53	Baltic	2.47
Delaware	Newark University Farm	99	27	Newark University Farm	50	10+	Georgetown 5SW	2.73	Bridgeville 1NW	1.11
Florida	Jasper 3SE	104	29	Carrabelle 1NNW	57	11	Apalachicola WB City	13.73	Perrine	.90
Georgia	Cordele Water Works	102	22	2 Stations	45	11	Embry	11.42	Stillmore	1.73
Hawaii	Ewa Pltn 741, Oahu	91	22+	Haleakala Summit, Maui	28	17	Kahana 883, Oahu	25.14	4 Stations	.00
Idaho	Swan Falls PH	105	21	2 Stations	25	31+	2 Stations	1.23	23 Stations	.00
Illinois	2 Stations	102	1	Marengo	41	4	Moline WBAP	8.78	Harrisburg Disposal Plant	1.98
Indiana	Gary Disposal Plant	100	2	3 Stations	40	10+	Kentland	12.69	Cypress Dam 48	1.71
Iowa	Elkader	104	1	2 Stations	46	9	Forest City	12.29	Harlan	1.44
Kansas	Fredonia 1E	112	23	do	53	10	Hillsboro	11.16	Girard	.96
Kentucky	Princeton	98	31	McKee	40	11	Waynesburg 7NE	11.49	Milburn 1E	1.94
Louisiana	Logansport	105	23+	Tallulah Delta Lab	59	11	Marion	12.79	Shreveport WBAP	1.00
Maine	Woodland	99	29	Middledam	40	7	St. Francis	7.74	Lewiston	1.23
Maryland	5 Stations	99	27+	Sines Deep Creek	35	9	Sines Deep Creek	6.12	Rock Hall 3SE	.52
Massachusetts	Fitchburg 2S	101	29+	Barre Falls Dam	38	6	Taunton	5.39	Shelborne Falls	1.23
Michigan	3 Stations	99	1	Vanderbilt Trout Station	30	4	Escanaba WB City	5.78	Lanse 2S	.48
Minnesota	Winona	100	1	Cotton 7E	31	3	Canby	13.61	Duluth Harbor Station	.97
Mississippi	Merrill	104	5	3 Stations	52	11	Scott	17.05	Paulding	1.66
Missouri	Nevada Sewage Plant	107	23	do	46	11+	2 Stations	7.76	Union	.75
Montana	Raymond Border Station	110	22	Lakeview	23	25	Medicine Lake 3SE	5.39	Pleasant Valley	T
Nebraska	2 Stations	107	25+	Crescent Lake Natl WLR	42	4	Gavins Point Dam	7.73	Mitchell 5E	.26
Nevada	Sunrise Manor Las Vegas	112	23+	Charleston	26	27	Denio	.07	72 Stations	.00
New Hampshire	Manchester	101	27	4 Stations	37	10+	First Conn Lake	5.60	Lebanon FAA AP	.58
New Jersey	Flemington 1NE	101	3	Layton 2	40	9	Orange	6.79	Chatsworth	.90
New Mexico	Orogrande	110	25	Eagle Nest	31	1	Cloudcroft RS	5.49	3 Stations	.00
New York	Hempstead Malverne	101	1	Allegany State Park	25	8	Middletown 2NW	8.06	Theresa	.22
North Carolina	Rocky Mount 8ESE	102	27	Celo 2S	36	11	Highlands 2S	12.76	Rocky Mount FAA AP	1.16
North Dakota	3 Stations	104	25+	Park River	38	2	Cooperstown	6.62	Fargo WBAP	.66
Ohio	Toledo Blade	99	3	Danville	35	10	Sayre	8.47	Middlebourne	1.10
Oklahoma	Great Salt Plains Dam	111	24	Cushing	51	27	Wetumka 3NE	13.97	Magnum Research Sta.	.34
Oregon	Ontario KSRV	101	21+	Ukiah	21	12	Brightwood	3.32	4 Stations	.00
Pennsylvania	Bethlehem Lehigh Univ.	104	1	Clermont 4NW	28	9	Bradford 4W Res	7.30	York Haven	.72
Puerto Rico	Ponce Mercedita AP	98	16	Juncos 1E	60	14	Lares	13.20	Melania Dam	.15
Rhode Island	2 Stations	95	26	Newport	41	15+	Kingston	4.69	Greenville	2.94
South Carolina	4 Stations	98	30+	Dillon 4SW	49	11	Longcreek 1N	13.26	Rock Hill 5NE	.91
South Dakota	Philip FAA AP	110	25	Deerfield 5NW	34	1	Brookings 1NE	12.10	Pine Ridge 1NNW	1.06
Tennessee	2 Stations	99	3	Mountain City 2	39	11+	Chattanooga WBAP	10.82	Covington 1W	1.33
Texas	Presidio	112	13	Mount Locke	53	3+	Kirbyville Forest Ser.	10.27	55 Stations	.00
Utah	St. George PH	109	25	Strawberry Reservoir	27	1	Parowan	2.50	25 Stations	.00
Vermont	Vernon	99	27	Somerset	35	6	Enosburg Falls	6.03	Newfame	.50
Virginia	2 Stations	100	28+	Burkes Garden	36	10+	Concord 5S	6.53	Nassawadox	.16
Washington	Bickleton	102	4	Mount Spokane Summit	30	1	Neah Bay 1E	6.47	Dallesport FAA AP	.02
West Virginia	Williamson	98	27	Canaan Valley	32	10	Thomas	9.37	Grafton 1NE	.70
Wisconsin	La Crosse State College	103	1	Newald	32	9	Kenosha	7.11	West Allis	1.18
Wyoming	Spencer 10NE	107	25	Bondurant 3NW	22	1	Tennyson	3.99	Thermopolis	.00

\+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure: Station ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 90°F. or above	Temperature: No. of days Min. 32°F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .01 inch or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile Speed	Wind: Fastest mile Direction	Wind: Fastest mile Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	992.4	1017.3	88	70	78.7	- 1.4	94	6	58	11	9	0	70	78	6.54	1.38	1.36	18	14	0.0	0	5.8	W	47	NE	24	4	14	13	6.5	58
HUNTSVILLE	605	993.9	1016.8	88	68	78.4	- 2.7	94	6	56	11	15	0	68	74	6.08	1.83	1.90	12	11	0.0	0	6.5	SE	63*	N	20	10	10	11	5.7	
MOBILE	211	1014.5	1016.7	92	74	82.7	1.7	96	21+	69	25	22	0	72	77	8.25	- 1.42	1.77	16	17	0.0	0	5.9	SW	21*	SW	25+	3	18	10	6.3	
MONTGOMERY	195	1008.8	1016.9	91	71	80.8	- 1.0	94	28+	63	11+	22	0	71	76	3.60	- 1.80	0.96	11	15	0.0	0	6.6	WSW	29	W	7	3	17	11	6.4	67
ALASKA												B																				
ANCHORAGE	90	1008.1	1012.9	65	52	58.6	1.5	72	13+	45	28	7	0	50	76	2.75	0.89	1.16	9	0	0.0	0	5.4	SE	17*	SE	15	3	10	18	7.6	50
ANNETTE	110	1012.2	1016.3	65	53	59.2	2.4	77	4	47	21	7	0	52	82	5.60	- 0.42	1.46	13	0	0.0	0	7.5	S	24*	S	18	2	9	20	8.0	
BARROW	22	1009.4	1010.2	41	33	36.9	- 2.2	63	25	28	14	0	14	35	92	1.65	0.88	0.51	12	0	3.5	3	12.6	E	25*	WSW	27	2	5	24	8.5	
BARTER ISLAND	39	1007.9	1009.7	45	36	40.0	- 1.3	61	26	31	29	0	7	37	89	1.48	0.60	0.28	13	0	0.4	T	11.4	ENE	40*	WSW	5	2	5	24	8.4	
BETHEL	125	1009.9	1012.8	62	47	54.2	- 0.5	81	10	39	1	9	0	48	83	2.05	0.02	0.60	14	0	0.0	0	11.4	SSW	25*	SSW	31+	3	4	24	8.4	
COLD BAY	94	1013.9	1017.7	55	47	50.6	0.9	61	13	42	9+	0	0	48	93	4.28	2.46	1.74	14	0	0.0	0	15.8	SSE	38*	WSW	21	1	2	28	9.4	
CORDOVA	40	1012.8	1014.4	61	47	53.7	0.5	72	5	38	20	1	0	50	88	9.17	2.90	2.33	17	0	0.0	0	5.6	E	21*	WSW	22	1	7	23	8.8	
FAIRBANKS	436	994.5	1011.3	70	50	60.0	0.3	84	11	40	28	14	0	49	69	1.36	- 0.48	0.51	14	2	0.0	0	6.2	SW	21*	WSW	12	1	7	23	8.2	
JUNEAU	17	1015.2	1015.2	63	48	55.4	0.1	75	8	41	22	5	0	49	81	5.22	0.73	1.49	19	0	0.0	0	7.8	NNW	30*	FSE	5	3	1	27	8.7	28
KING SALMON	43	1012.8	1014.1	64	46	54.8	- 0.1	79	29	40	4+	9	0	48	82	1.66	- 0.40	0.47	10	0	0.0	0	10.5	SW	33*	W	17	1	4	26	8.7	
KOTZEBUE	10	1009.8	1010.2	55	45	49.9	- 2.8	66	6	38	4	0	0	46	86	2.81	1.35	1.38	14	0	0.0	0	14.2	WNW	35*	WNW	18	1	8	22	8.3	
MC GRATH	334	999.5	1012.1	67	49	58.1	- 0.6	83	10	40	2	14	0	48	71	0.78	- 1.65	0.16	13	4	0.0	0	7.1	S	23	SW	4	2	6	23	8.3	
NOME	13	1010.3	1011.0	53	43	48.0	- 1.5	65	31	36	5	0	0	44	85	0.94	- 1.35	0.26	12	0	0.0	0	12.6	W	31*	NW	17	6	4	21	7.5	28
ST. PAUL ISLAND	22	1013.8	1014.7	49	42	45.3	- 0.2	54	11	36	7	0	0	44	97	4.29	2.04	1.80	14	0	0.0	0	14.0	WSW	35*	W	19	0	2	29	9.7	
SHEMYA	122	1008.7	1012.7	49	44	46.5	0.1	55	29	41	13	0	0	45	96	3.47	1.32	0.56	18	0	0.0	0	14.9	S	49*	S	31	0	2	29	9.6	
YAKUTAT	28	1014.6	1015.7	59	50	54.6	0.5	69	28	41	20	0	0	52	90	9.31	0.88	3.92	18	0	0.0	0	5.9	FSE	22*	ESE	5	3	3	25	8.6	
ARIZONA																																
FLAGSTAFF	6993	793.3	1013.5	84	52	68.0	2.0	89	24	44	1	0	0	39	38	0.32	- 1.96	0.24	5	6	0.0	0	6.7	SSW	20*	WSW	27	14	11	6	4.7	
PHOENIX	1117	969.7	1007.5	106	78	92.0	0.7	112	24	69	6	31	0	51	25	0.03	- 0.74	0.03	1	4	0.0	0	7.5	W	37*	S	27	21	9	1	2.4	92
PRESCOTT	5014	847.8	1010.7	93	63	78.0	2.0	98	30	59	13+	26	0	41	30	0.54	- 1.54	0.28	4	6	0.0	0	9.5	SW	32	S	19+	18	11	2	3.3	78
TUCSON	2584	923.2	1008.7	100	75	87.6	1.5	107	25	70	28+	31	0	54	37	1.66	- 0.40	0.74	10	14	0.0	0	9.7	SSE	45	W	10	8	17	6	4.9	78
WINSLOW	4880	851.9	1010.8	98	64	80.9	0.2	104	25	56	13+	30	0	45	32	0.15	- 0.87	0.06	4	6	0.0	0	8.2	WSW	37*	WSW	28	12	13	6	4.9	
YUMA	199	1002.2	1007.3	108	80	93.6	- 1.2	114	25+	69	7	31	0	54	30	0.05	- 0.18	0.05	1	0	0.0	0	9.5	SSE	35	SE	26	23	7	1	2.2	94
ARKANSAS																																
FORT SMITH	449	998.0	1014.6	95	71	82.8	- 0.2	103	24+	62	10	25	0	71	72	6.21	3.41	2.67	9	8	0.0	0	6.2	ENE	36	SW	6	11	10	10	5.5	67
LITTLE ROCK	257	1002.6	1015.6	92	71	81.5	- 0.4	104	4	57	11	22	0	71	75	5.54	2.20	1.91	11	13	0.0	0	6.8	WSW	42	W	22	7	12	12	6.3	64
TEXARKANA	361	1001.7	1015.4	92	73	82.3	- 0.3	99	22+	68	10+	22	0	72	76	4.52	0.68	2.52	7	11	0.0	0	7.8	SSW								
CALIFORNIA																																
BAKERSFIELD	494	993.8	1011.1	94	66	79.8	- 4.5	103	13	57	2	22	0	48	34	0.00	- 0.01	0.00	0	0	0.0	0	6.6	NW	15*	NNW	4+	30	1	0	0.5	
BISHOP	4108	872.1		97	52	74.8	- 1.3	102	25+	43	4	31	0			0.00	- 0.12	0.00	0	0	0.0	0						30	1	0	0.6	
BLUE CANYON	5280	840.9		73	54	63.5	- 5.0	80	26+	47	6+	0	0			0.00	- 0.09	0.00	0	0	0.0	0	6.9	SSW	24	ENE	26+	30	1	0	0.3	
BURBANK	699	986.8	1012.4	84	60	71.8	- 2.0	90	24+	55	29	3	0	56	63	0.00	0.00	0.00	0	0	0.0	0	6.9	S	16*	S	26+	27	4	0	2.0	
EUREKA U	43	1015.1		62	53	57.2	0.9	65	24+	48	3+	0	0			0.11	0.00	0.05	5	0	0.0	0	7.1	N#	26	NW	25+	9	12	10	5.2	69
FRESNO	326	999.3	1010.9	96	61	78.5	- 2.1	103	14+	54	3+	25	0	48	37	0.00	0.00	0.00	0	0	0.0	0	8.4	WNW	21	NW	7	31	0	0	0.1	100
LONG BEACH	34	1011.6	1013.1	81	60	70.5	- 1.4	88	18	55	3+	0	0	59	75	T	0.00	T	0	0	0.0	0	6.5	WNW	17*	NW	18+	20	9	2	3.2	
LOS ANGELES	97	1009.0	1012.8	76	62	68.7	1.1	80	26	57	2	0	0	59	75	0.00	- 0.01	0.00	0	0	0.0	0	8.0	WSW	20*	W	4	18	12	1	3.2	
LOS ANGELES U	312			82	62	72.1	- 0.9	87	25+	58	12	0	0			0.00	0.00	0.00	0	0	0.0	0	5.3	W#	17	W	28	26	5	0	2.1	88
MT SHASTA R	3544	892.3		80	47	63.5	- 4.5	93	27+	39	8+	2	0			0.07	- 0.23	0.07	1	1	0.0	0						23	4	4	1.8	
OAKLAND	3	1014.1	1014.4	72	56	63.6	- 0.7	94	26	50	3	1	0	52	70	T	0.00	T	0	0	0.0	0	10.9	WNW	24*	NW	27+	21	10	0	2.5	
POINT ARGUELLO R	367	1000.5		65	52	58.4	- 0.1	80	26	48	9	0	0			0.04	0.02	0.03	3	0	0.0	0	7.3		20*	NW	3	6	10	15	6.5	
RED BLUFF	341	999.0	1011.3	93	63	78.2	- 5.6	104	13+	52	2	22	0	45	34	0.00	- 0.04	0.00	0	0	0.0	0	9.2	SSE	25	SE	23	27	4	0	0.9	97
SACRAMENTO	17	1011.4	1012.2	91	56	73.9	- 3.5	100	26+	51	3	20	0	54	58	0.00	0.00	0.00	0	0	0.0	0	7.1	SW	22	SW	4	30	1	0	0.6	100
SACRAMENTO U	23			89	57	73.1	- 2.9	99	12	52	3+	15	0			0.00	0.00				0.0	0										
SANDBERG R	4517	862.9		83	59	71.0	- 3.4	91	23	51	5	1	0			0.00	- 0.02	0.00	0	0			11.2	NNW	31*	NNW	18+	29	1	1	0.7	
SAN DIEGO	13	1009.5	1012.6	74	62	68.2	- 1.4	78	24+	59	10	0	0	59	77	0.00	- 0.01	0.00	0	0	0.0	0	6.7	WNW	18	NW	1	15	13	3	3.9	71
SAN FRANCISCO	8	1014.1	1014.7	71	54	62.2	- 0.5	94	26	50	25	1	0	52	75	T	- 0.01	T	0	0	0.0	0	12.2	W	34	WSW	21	24	7	0	1.8	
SAN FRANCISCO U	52			65	54	59.7	0.9	88	26	52	29	0	0			T	- 0.01	1	0	0	0.0	0	11.3	W#	29	W	8					77
SANTA CATALINA	1568	957.3		79	60	69.5		90	14	54	1	1	0			0.00	0.00	0.00	0	0	0.0	0						25	6	0	1.6	
SANTA MARIA	238	1005.7	1014.3	70	51	60.4	- 1.8	75	25+	45	3	0	0	53	82	T	- 0.03	T	0	0	0.0	0	8.0	WNW	26*	WNW	3	21	10	0	2.6	
STOCKTON	28	1010.9	1012.4	92	58	74.9		101	27+	52	3	21	0	49	45	0.00	0.00	0.00	0	0	0.0	0	7.1	WNW	21*	W	1	31	0	0	0.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO																																
ALAMOSA	7536	775.4		84	49	66.5	1.6	89	25+	43	16	0	0			1.10	0.03	0.44	11	13	0.0	0					12	17	2	4.1	
COLORADO SPRINGS	6173	814.6	1013.2	90	61	75.5	5.5	99	22	55	15	20	0	48	44	1.35	- 1.02	0.54	12	22	0.0	0	10.1	N	31*	NNW	23	9	17	5	5.1	
DENVER	5283	837.7	1011.0	91	58	74.8	1.4	99	25	52	29	25	0	48	44	0.55	- 0.98	0.42	6	8	0.0	0	9.3	S	33	W	14	8	19	4	4.7	75
GRAND JUNCTION	4849	858.4	1009.5	94	65	79.8	1.6	100	25+	58	13	26	0	38	27	0.93	- 0.36	0.73	4	7	0.0	0	6.8	SE	44	N	12	16	12	3	3.9	79
PUEBLO	4639	856.1	1010.1	96	64	79.9	3.4	103	22	57	15	30	0	50	41	0.25	- 1.57	0.10	6	13	0.0	0	11.0	SSE	47	N	11	15	13	3	3.8	78
CONNECTICUT																																
BRIDGEPORT	7	1014.2	1015.0	82	64	73.0	- 0.7	97	2	51	9	7	0	63	74	5.22	1.45	2.61	9	5	0.0	0	10.7	WSW	36*	SSW	14	8	13	10	5.5	
HARTFORD	169	1008.0	1013.9	85	61	72.9	0.7	95	25+	46	9	10	0	62	72	3.89	0.28	1.36	9	7	0.0	0	6.8	S	26	W	19+	7	14	10	6.0	78
NEW HAVEN	6	1013.5		81	63	71.9	0.0	95	1	52	9	3	0			3.52	0.09	1.78	10	10	0.0	0	6.3		30	SW	2	8	14	9	5.5	74
DELAWARE																																
WILMINGTON	78	1011.4	1014.8	87	65	76.3	0.3	97	27+	54	10	11	0	61	63	1.65	- 2.60	0.97	7	4	0.0	0	5.6	WNW	48*	W	29	11	13	7	4.9	
DIST. OF COLUMBIA																																
WASHINGTON U	72			89	69	79.0		98	28+	59	10+	15	0			0.67		0.57	3												
WASH NATL AP	14	1010.8	1015.3	88	68	77.6	- 0.6	96	27	56	10	13	0	61	58	1.95	- 2.20	0.68	4	2	0.0	0	8.1	S	50	WSW	19	11	12	8	4.9	76
FLORIDA																																
APALACHICOLA U	13	1015.2		87	75	80.9	- 0.6	92	7+	68	23	3	0			13.73	5.80	5.38	12	14	0.0	0		W	29	E	25	6	16	9	6.1	
DAYTONA BEACH	31	1016.5	1018.3	89	73	80.6	0.5	94	20	66	12	11	0	73	82	6.89	0.15	1.82	13	16	0.0	0	8.1	SW	40*	WSW	9	6	10	15	6.8	
FORT MYERS	13	1017.2		93	75	84.0	1.8	95	28+	72	31	30	0			4.06	- 5.02	2.08	13	19	0.0	0	8.2		32*	ESE	29	3	17	11	6.1	
JACKSONVILLE	24	1014.6	1017.4	90	72	81.3	- 1.3	95	31	65	11	21	0	72	78	6.47	- 1.21	2.27	11	15	0.0	0	8.7	SW	40	SE	7	1	16	14	6.7	68
KEY WEST	5	1016.4	1017.5	90	79	84.8	1.5	94	9	73	12	22	0	74	70	1.63	- 2.53	0.88	13	11	0.0	0	12.0	ESE	35	SE	18	2	22	7	5.9	68
LAKELAND U	214			90	74	82.0	0.4	94	30+	68	21	25	0			7.92	- 0.38	3.03	16	22	0.0	0	6.8					0	20	11	7.1	59
MIAMI BEACH	9			89	79	84.3	2.0	97	8+	73	26	8	0			2.31	- 2.14	0.60	9		0.0	0	13.0	E	24	NW	8	3	23	5	5.4	70
MIAMI	7	1016.6	1017.9	90	76	83.2	1.4	95	7	72	5	16	0	73	73	1.77	- 4.98	0.66	11	14	0.0	0	9.7	E	35*	WNW	8	1	22	8	6.1	
ORLANDO	106	1013.5	1018.1	93	73	82.9	1.4	98	30	68	12	26	0	72	76	3.83	- 4.17	1.35	15	21	0.0	0	8.9	WSW	35*	W	22	2	16	13	6.8	
PENSACOLA U	13			88	75	81.4	- 0.4	94	7+	67	24	9	0			9.87	2.31	4.22	13	13	0.0	0	7.6	WSW	26	NE	24					70
TALLAHASSEE	58	1014.9	1017.6	91	72	81.4	0.1	96	6	63	11	22	0	71	77	7.13	- 0.92	3.21	13	21	0.0	0	7.6	S	36*	SW	8	0	23	8	6.4	
TAMPA	19	1016.6	1018.2	90	74	81.7	0.1	95	27+	71	25+	13	0	72	77	8.11	- 0.51	2.83	16	20	0.0	0	11.1	W	58*	NW	10	2	19	10	6.5	70
WEST PALM BEACH	15	1017.4	1018.6	92	75	83.9	1.3	98	9	70	11	31	0	72	71	1.62	- 5.04	0.42	8	13	0.0	0	8.4	ESE	44*	W	23	2	20	9	6.2	
GEORGIA																																
ATHENS	803	988.0	1016.6	87	67	77.2	- 2.5	92	6+	59	12+	8	0	68	77	4.74	- 0.25	2.12	13	14	0.0	0	6.6	WSW	23*	WSW	29	9	14	8	5.6	
ATLANTA	1005	976.0	1017.3	85	67	75.8	- 3.0	90	6	60	11	1	0	68	82	8.12	3.40	2.75	16	11	0.0	0	5.9	W	34*	NW	6	12	7	12	5.5	72
AUGUSTA	143	1009.7	1016.4	90	69	79.3	- 1.4	95	28	57	11	20	0	70	77	3.03	- 1.47	0.66	14	12	0.0	0	6.2	SW	24*	WNW	16	4	16	11	6.5	
COLUMBUS	385	1002.9		90	69	79.4	- 1.7	94	7	61	11	19	0			3.20	- 2.67	1.08	13	11	0.0	0	6.4		35*	N	6	6	12	13	6.4	
MACON	356	1003.7	1017.2	91	70	80.1	- 1.8	96	7	62	13	23	0	69	74	7.14	1.50	1.93	16	15	0.0	0	6.1	SW	38	NW	6	5	16	10	6.0	69
ROME	637	994.5		87	65	76.0	- 3.0	92	6	53	11	7	0			6.31	1.42	1.92	18	18	0.0	0						7	13	11	6.3	
SAVANNAH	48	1014.3	1016.9	90	70	80.1	- 1.2	95	20	63	12	19	0	70	77	7.94	1.33	1.69	14	18	0.0	0	8.0	WSW	30	NE	7	5	14	12	6.4	70
THOMASVILLE U	283			90	71	80.4	- 1.6	96	6	64	11	21	0			7.53	0.72	1.11	14	12	0.0	0						8	12	11	5.9	
HAWAII																																
HILO	31	1014.9	1016.6	83	68	75.4	0.5	85	26+	64	18+	0	0	68	79	12.40	2.58	2.90	29	0	0.0	0	8.6	WSW	24	E	29	1	15	15	7.3	42
HONOLULU	7	1016.0	1016.4	87	74	80.7	1.9	89	23+	69	31	0	0	66	63	1.01	0.57	0.74	8	0	0.0	0	11.8	ENE	32	NE	25	8	20	3	4.8	73
KAHULUI	44	1013.3	1016.0	86	70	78.1		89	22+	66	31+	0	0	67	71	0.29		0.12	7	0	0.0	0	22.3	ENE	39*	ENE	6	14	15	2	3.8	81
LIHUE	115	1012.4	1017.9	85	73	79.0	1.4	87	28+	69	31+	0	0	68	72	1.63	- 0.31	0.35	19	0	0.0	0	12.7	NE	23	NE	17	0	23	8	6.2	65
IDAHO																																
BOISE	2838	917.1	1011.1	89	56	72.2	- 2.5	99	21+	46	11	16	0	39	33	T	- 0.21	T	0	2	0.0	0	7.7	NW	24	SE	1	27	4	0	0.9	94
IDAHO FALLS 42NW R	4790			88	47	67.3	- 1.8	97	21	39	28+	13	0			0.02	- 0.42	0.02	1		0.0	0	12.0	SW	35A	SW	10					
IDAHO FALLS 46W R	4933	847.1		86	48	66.7	- 2.3	93	24+	39	28	8	0			T	- 0.26	T	0	0	0.0	0	7.8	WSW	26A	WSW	10					
LEWISTON	1413	961.7		85	56	70.3	- 3.5	95	19+	46	23	8	0			0.42	- 0.01	0.25	4	2	0.0	0						18	9	4	3.4	
POCATELLO	4444	862.1	1011.4	88	53	70.3	- 2.1	96	24+	42	1	12	0	37	33	T	- 0.51	T	0	3	0.0	0	8.5	WSW	30	W	24+	25	5	1	1.9	97
ILLINOIS																																
CAIRO U	314	1002.5		89	71	80.2	- 0.9	96	2	60	11	15	0			4.16	0.97	1.36	9	6	0.0	0	7.0	S#	35	N	14	11	14	6	4.9	75
CHICAGO O HARE	658	990.7	1015.1	83	61	72.1		95	1	45	10	2	0	58	61	4.09		1.98	7	5	0.0	0	8.3	SSE	29*	NNE	19	11	13	7	4.9	
CHICAGO MIDWAY	610	992.8	1015.3	84	66	75.0	- 0.7	99	1	55	10	4	0	59	61	7.31	3.94	2.19	6	5	0.0	0	9.5	SW	42	E	21	10	14	7	4.9	68

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ILLINOIS																																
MOLINE	582	993.1	1015.0	86	64	74.8	- 0.8	99	1	51	9	8	0	64	72	8.78	5.52	5.41	11	6	0.0	0	7.8	E	59	NW	19	15	10	6	4.4	72
PEORIA	652	994.0	1016.0	86	63	74.3	- 1.7	97	1	51	10+	6	0	62	68	3.56	0.02	1.98	8	6	0.0	0	8.2	S	41	NW	19	12	11	8	4.8	72
ROCKFORD	728	988.4	1015.2	85	63	73.8	- 0.4	98	1	50	10+	3	0	61	66	5.16	1.02	3.05	10	7	0.0	0	8.2	SSE	35*	WNW	18	11	13	7	4.9	
SPRINGFIELD	588	991.9	1014.7	85	65	74.6	- 2.4	96	2	51	10	4	0	65	72	6.97	3.48	2.68	10	7	0.0	0	7.8	S	25	NW	31+	14	10	7	4.2	81
INDIANA																																
EVANSVILLE	381	1000.0	1015.8	89	65	76.7	- 1.6	96	19	51	11	15	0	66	72	5.20	1.88	1.38	13	10	0.0	0	5.3	NW	30	W	1	11	13	7	5.0	79
FORT WAYNE	791	984.9	1015.7	85	61	73.1	- 1.1	96	2	47	10	4	0	60	67	5.10	1.73	2.45	10	7	0.0	0	7.4	NW	42	NW	19	9	17	5	5.1	79
INDIANAPOLIS	793	986.3	1015.9	84	63	73.4	- 1.8	93	2	50	10	4	0	64	74	4.66	1.16	2.34	12	7	0.0	0	6.3	SW	36*	NNE	20	8	18	5	4.9	72
SOUTH BEND	768	987.5	1015.3	82	62	71.7	- 1.9	93	1	47	10	2	0	59	67	5.11	1.64	1.88	10	9	0.0	0	8.5	S	40*	NNW	19	7	19	5	5.1	
IOWA																																
BURLINGTON	694	990.1	1015.2	86	65	75.5	- 1.1	98	1	52	4	7	0	64	71	6.18	2.78	2.19	10	5	0.0	0	8.0	SSE	33	N	1	14	11	6	4.5	80
DES MOINES	948	983.9	1014.7	86	66	75.9	- 1.1	97	1	58	10	2	0	65	71	4.01	0.95	1.20	7	7	0.0	0	8.1	SSE	42	NW	16	12	15	4	4.5	72
DUBUQUE	1065	989.6		83	62	72.5	- 0.1	98	1	53	10	1	0			6.38	2.87	3.83	10	5	0.0	0			42*	S	18	13	10	8	4.9	
SIOUX CITY	1095	972.9	1013.2	86	67	76.6	0.2	94	23	58	14	10	0	66	71	2.39	- 0.72	0.85	7	7	0.0	0	8.2	SE	50	SW	18	14	9	8	4.7	72
WATERLOO	868	983.6	1015.1	84	63	73.2	- 1.1	96	1	54	4	6	0	65	77	8.73	4.94	4.33	10	6	0.0	0	7.8	ESE	54*	NE	19	12	9	10	5.0	
KANSAS																																
CONCORDIA	1470	963.0	1011.8	92	69	80.2		101	23+	63	10	22	0	66	66	4.41		1.68	12	14	0.0	0	11.5	SSE	44	SW	14	15	10	6	4.3	66
DODGE CITY	2594	925.4	1011.1	95	69	82.3	2.1	103	23	61	15	28	0	60	51	2.27	- 0.04	1.01	8	14	0.0	0	13.8	SSE	42	N	17	19	7	5	3.6	81
GOODLAND	3645	887.0	1010.4	96	64	79.6	3.0	104	31+	58	29+	27	0	57	51	3.22	0.55	1.29	9	11	0.0	0	13.7	SSE	52*	NE	29	20	10	1	3.1	
TOPEKA	877	978.1	1013.0	91	69	80.3	0.4	101	23	61	10+	20	0	67	66	3.13	- 0.47	2.81	6	8	0.0	0	11.0	S	54	N	31	11	12	8	5.2	75
WICHITA	1321	964.7	1012.0	93	72	82.6	1.7	104	22	65	29	22	0	66	60	2.70	- 0.94	0.90	7	10	0.0	0	10.9	S	42	N	17	14	11	6	4.5	76
KENTUCKY																																
COVINGTON	869	984.3	1015.8	84	61	72.3	- 4.1	91	19+	47	11	3	0	61	72	4.34	0.73	1.72	9	5	0.0	0	6.6	SSW	23*	WSW	28+	9	12	10	5.6	
LEXINGTON	979	981.2	1016.5	83	64	73.6	- 3.8	88	19	53	10	0	0	63	72	7.18	3.20	2.13	11	9	0.0	0	6.6	S	21*	WSW	14+	8	17	6	5.4	
LOUISVILLE	474	996.8	1015.7	85	65	74.8	- 2.3	91	19	53	11	1	0	66	76	7.33	3.97	1.71	11	8	0.0	0	5.9	S	26	W	28	10	14	7	5.2	64
LOUISIANA																																
ALEXANDRIA	92	1012.1	1016.4	92	70	81.0		99	22+	65	3	25	0	72	81	5.31		1.45	11	17	0.0	0	4.6	SW	32	ENE	4	3	18	10	6.3	
BATON ROUGE	64	1014.0	1016.9	92	73	82.2	0.4	95	22+	68	24	28	0	73	80	10.98	4.71	2.52	18	18	0.0	0	5.5	SW	29	W	1	5	10	16	6.8	
LAKE CHARLES	14	1015.1	1016.5	91	75	82.6	- 0.2	94	23+	71	27+	24	0	74	80	5.28	- 2.01	2.51	9	19	0.0	0	7.2	SSW	26*	ENE	23	0	20	11	6.6	
NEW ORLEANS	3	1014.8	1016.9	90	73	81.2	0.1	93	22+	69	5	18	0	75	84	6.40	- 0.32	0.99	17	19	0.0	0	5.7	SW	30*	ENE	1	3	18	10	6.5	
NEW ORLEANS AUDUBON	6	1010.3		90	76	83.0		93	22+	72	5	21	0			5.93		1.72	18	20	0.0	0	2.9	W#	16	SW	8	2	22	7	6.6	51
SHREVEPORT	252	1006.8	1016.0	94	73	83.7	0.5	103	21	68	2	28	0	71	70	1.00	- 2.75	0.55	9	9	0.0	0	9.7	S	32	SSE	4	9	13	9	5.6	74
MAINE																																
CARIBOU	624	988.5	1011.3	78	57	67.5	3.0	93	26+	48	6+	4	0	60	78	3.66	- 0.38	1.08	12	8	0.0	0	9.3	WSW	38*	NW	2	3	15	13	6.8	
PORTLAND	61	1008.8	1012.9	81	57	68.9	0.8	94	28+	45	6	5	0	60	76	2.51	- 0.35	1.14	8	3	0.0	0	7.0	S	26	W	5+	6	12	13	6.1	66
MARYLAND																																
BALTIMORE	146	1010.3	1015.1	88	65	76.3	- 0.5	97	27+	56	5	13	0	62	65	0.69	- 3.53	0.58	3	2	0.0	0	8.2	W	23	NW	3	16	11	4	4.0	81
BALTIMORE U	14			89	71	80.1	1.0	98	27	60	9	15	0			0.91	- 3.48	0.56	5													
FREDERICK	294			87	62	74.2	- 1.4	95	28+	48	10	12	0			2.08	- 1.84	0.80	6		0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	989.8		82	61	71.9	1.0	97	26	49	9	10	0			2.33	- 0.94	0.72	9		0.0	0	11.4	SSW	43	SSW	14					65
BOSTON	15	1003.1	1013.2	84	66	74.7	1.0	98	2+	55	9	10	0	60	64	1.72	- 1.16	0.51	6	6	0.0	0	12.3	SSW	40	NW	3	7	14	10	5.8	68
NANTUCKET	43	1013.7	1014.4	74	62	67.8	0.3	86	19	54	10+	0	0	62	86	2.58	- 0.13	0.81	7	3	0.0	0	11.4	SW	27	NW	19	3	10	18	7.5	57
PITTSFIELD	1170			80	56	67.7	- 0.1	92	2	41	10	3	0			2.47	- 2.42	0.96	11		0.0	0										
WORCESTER	986	977.6	1013.9	79	61	70.0	0.2	91	27+	46	9	7	0	59	69	1.88	- 1.75	1.04	10	6	0.0	0	9.0	W	27*	NW	4	6	16	9	5.6	
MICHIGAN																																
ALPENA	689	989.7		81	53	67.2	0.3	96	1	39	9	3	0			2.11	- 0.75	1.12	7	5	0.0	0	6.6	SW	24	E	20	14	11	6	4.3	81
DETROIT	619	988.3	1015.0	85	64	74.5	0.6	94	18+	52	9	9	0	59	59	2.91	0.09	1.33	10	5	0.0	0	8.1	SW	31	NW	14	11	14	6	4.5	71
DETROIT M WAYNE CO	633	991.4	1015.3	85	58	71.5	- 1.4	94	1	46	10+	8	0	61	71	1.92	- 0.77	0.73	7	2	0.0	0	6.1	WNW				11	15	5	4.6	
DETROIT WILLOW RUN	711	987.2	1015.1	85	61	73.0	- 1.2	96	2	48	9	10	0	58	63	2.12	- 0.56	1.00	7	4	0.0	0	9.6	NW	31*	SSE	14	8	17	6	4.8	
ESCANABA U	594	992.3		76	59	67.5	0.3	85	20+	44	9	0	0			5.78	2.25	1.50	10	5	0.0	0	8.4		59	S	1	12	14	5	4.8	70

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average dew point	Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
				Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below			Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Station Ø Mb.	Sea level Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																	
FLINT	766	988.5	1015.9	83	58	70.4	- 1.2	97	1	41	4	6	0	58	66	1.38	- 1.53	0.66	8	4	0.0	0	7.8	SW	23*	SE	13	12	15	4	4.7	
GRAND RAPIDS	689	990.5	1015.4	84	61	72.1	0.2	96	1	45	10	5	0	57	62	3.41	0.68	1.49	7	4	0.0	0	8.8	WNW	31	S	19	12	12	7	4.6	81
LANSING	852	983.4	1015.0	83	58	70.7	- 1.0	94	1	44	10+	3	0	57	61	3.48	0.90	1.70	7	6	0.0	0	10.1	S	49	W	28	13	9	9	4.8	70
MARQUETTE U	677	987.7		78	59	68.6	1.9	99	1	49	16+	4	0			2.53	- 0.67	1.11	6	3	0.0	0	7.1	SW#	22	SW	12	11	6	14	5.6	71
MUSKEGON	627	992.3	1015.2	81	60	70.1	- 0.2	93	1	45	10	1	0	58	68	1.92	- 0.49	1.05	6	4	0.0	0	9.6	SSW	26*	NW	21	16	10	5	3.9	
SAULT STE MARIE	721	991.9	1014.5	76	55	65.7	1.6	93	1	43	8	1	0	55	71	2.25	- 0.23	0.84	7	1	0.0	0	8.7	WNW	25*	WNW	2	12	9	10	5.2	69
MINNESOTA																																	
DULUTH	1426	973.9	1015.0	78	55	66.9	0.9	90	21	40	3	1	0	58	75	1.82	- 1.72	0.64	12	5	0.0	0	8.6	WNW	37	W	19	6	12	13	6.4	58
INTERNATIONAL FALLS	1179	973.3	1014.0	79	56	67.4	1.8	90	23	39	3	1	0	59	74	4.99	1.50	1.78	8	10	0.0	0	6.0	S	22*	W	1	5	15	11	6.2	
MINNEAPOLIS	822	981.8	1014.6	85	62	73.5	0.5	93	22	53	15	6	0	61	70	1.53	- 1.74	0.74	8	5	0.0	0	9.1	SSE	28	SW	16	8	14	9	5.3	75
ROCHESTER	1297	968.1	1015.4	81	61	70.7	- 1.1	94	1	52	15+	1	0	62	77	3.95	0.27	1.44	12	8	0.0	0	9.8	S	29*	NW	18	11	10	10	5.2	
ST CLOUD	1034	976.0		84	61	72.1	1.1	92	23+	52	15	4	0			2.04	- 1.22	0.60	7	6	0.0	0						7	15	9	5.7	
MISSISSIPPI																																	
JACKSON	305	1004.6	1016.5	91	71	81.1	- 0.5	97	4	62	10	22	0	71	77	6.28	1.64	4.14	13	15	0.0	0	6.4	SSE	29	SSE	18	5	15	11	6.1	
MERIDIAN	292	1003.5	1017.0	91	69	80.0	- 1.5	95	20+	58	11+	23	0	71	78	3.56	- 2.66	0.85	11	14	0.0	0	5.1	S	23*	W	13	6	13	12	6.3	
VICKSBURG U	234	1007.2		89	71	80.0	- 1.8	94	22+	67	11+	17	0			8.95	5.05	2.65	16	17	0.0	0	6.6		38	NW	22	4	22	5	6.0	71
MISSOURI																																	
COLUMBIA	778	985.9	1013.8	89	68	78.5	- 0.2	98	19	58	10	18	0	65	68	5.70	2.29	1.60	10	6	0.0	0	9.4	SSE	38	NE	2	13	11	7	4.6	76
KANSAS CITY	742	979.3	1013.2	91	72	81.7	0.7	100	19	62	10	21	0	67	62	4.40	1.21	3.70	6	5	0.0	0	9.2	SSW	24	N	31+	12	11	8	4.9	87
ST JOSEPH	809	979.6		91	70	80.5	1.1	101	5	58	10	21	0			4.06	0.84	3.07	7	6	0.0	0	8.0	SE	23*	NW	31+	14	12	5	4.4	
ST LOUIS	535	994.7	1015.2	88	67	77.3	- 2.3	97	31+	54	10+	11	0	64	66	1.37	- 1.93	0.50	7	6	0.0	0	9.4	SSE	24	SE	2	14	13	4	4.4	74
ST LOUIS RFC	465			88	70	79.0	- 1.7	97	19	60	9	13	0			2.13	- 1.18	0.94	8		0.0	0										
SPRINGFIELD	1265	968.3	1014.9	87	69	77.5	- 1.3	92	20+	58	10	11	0	69	76	2.89	- 1.00	1.10			0.0	0	8.7	SSE	49	N	22					
MONTANA																																	
BILLINGS	3567	890.3	1011.8	86	57	71.4	- 1.8	98	22+	50	11+	9	0	48	48	0.49	- 0.41	0.41	4	10	0.0	0	10.0	SW	33	NE	7	11	16	4	3.9	79
GLASGOW	2277	938.0		85	59	72.0	1.3	103	22	48	1	5	0			1.65	0.32	1.14	6	9	0.0	0						14	15	2	3.9	
GREAT FALLS	3662	887.4	1011.9	85	53	68.9	- 1.0	100	22	42	1	7	0	43	43	0.96	- 0.32	0.62	6	9	0.0	0	10.4	SW	43	W	14	17	11	3	3.3	81
HAVRE	2582	924.3		86	54	70.4	0.4	104	22	40	1	10	0			2.13	0.86	0.83	9	9	0.0	0	9.0	W#	52	SW	24	21	8	2	3.0	81
HELENA	3893	873.0	1012.7	84	52	68.2	- 0.2	98	21+	43	1	7	0	43	45	0.80	- 0.23	0.45	5	9	0.0	0	8.7	WNW	38	W	24+	20	8	3	3.1	77
KALISPELL	2965	910.7		80	46	63.0	- 2.7	95	7	35	23	4	0			0.95	- 0.09	0.32	7	8	0.0	0	5.7					18	8	5	3.5	
MILES CITY				90	61	75.5	0.2	102	24	49	1	17	0			1.19	- 0.15	0.69	10	15	0.0	0	8.6	SE	30*	W	5	15	12	5	3.8	
MISSOULA	3190	901.3	1014.1	82	46	64.1	- 2.9	94	7	37	16	6	0	46	57	1.11	0.26	0.62	5	7	0.0	0	7.2	NNW	29	NW	22	21	3	7	3.2	76
NEBRASKA																																	
GRAND ISLAND	1841	947.5	1012.3	90	65	77.7	- 1.0	105	23	55	28	18	0	64	68	2.18	- 0.33	0.62	10	12	0.0	0	10.8	SSE	39*	NNW	16	16	8	7	4.4	
LINCOLN U	1150			90	70	79.7	- 0.4	98	23+	62	14	18	0			2.82	- 0.45	1.31	8	4	0.0	0	10.8	S#	35	SE	30	10	11	10	5.1	70
NORFOLK	1544	958.0		87	66	76.7	- 0.3	98	18	59	14	10	0			3.43	0.41	0.88	13	14	0.0	0						13	10	8	4.6	
NORTH PLATTE	2779	914.0	1010.5	91	64	77.5	1.4	101	23+	51	28	22	0	61	62	1.60	- 0.92	0.35	11	13	0.0	0	10.7	SE	49	SW	20	16	11	4	3.7	77
OMAHA	978	974.0	1013.0	89	69	79.0	0.5	101	1	60	14	20	0	65	65	2.25	- 1.12	0.88	5	8	0.0	0	9.1	SE	35	NW	17	12	12	7	4.7	74
OMAHA N OMAHA AP	1323	966.0		86	67	76.4	0.3	96	1	59	14	9	0			1.32	- 2.25	0.82	8	8	0.0	0						11	12	8	5.4	
SCOTTSBLUFF	3950	878.1	1010.8	92	62	76.9	2.2	101	25	56	31+	23	0	56	54	1.60	0.15	1.10	5	11	0.0	0	10.5	ESE	40*	NW	7	14	13	4	4.0	
VALENTINE	2587	922.3		91	63	77.1	1.7	103	23	52	20	19	0			3.59	1.27	1.06	14	17	0.0	0	10.8	S#	42	NW	29	19	10	2	3.5	78
NEVADA																																	
ELKO	5075	844.3	1011.8	88	42	65.3	- 4.3	94	23+	37	27+	14	0	29	28	0.00	- 0.40	0.00	0	0	0.0	0	6.6	SW	22*	SSW	6	30	1	0	0.7	
ELY	6257	809.6	1009.6	87	46	66.5	- 1.0	91	24+	37	1	8	0	26	22	0.01	- 0.64	0.01	1	0	0.0	0	10.2	S	32	S	6	24	7	0	1.7	99
LAS VEGAS	2162	943.5	1007.8	105	75	90.4	0.2	110	23+	65	7+	31	0	25	11	0.00	- 0.50	0.00	0	1	0.0	0	13.3	SW	29*	SW	17+	25	6	0	1.5	96
RENO	4404	865.8	1013.5	88	42	65.1	- 3.1	95	13	35	4+	12	0	36	36	T	- 0.27	T	0	0	0.0	0	6.4	WNW	30	NW	13	29	2	0	0.5	98
WINNEMUCCA	4299	866.8		89	46	67.5	- 3.5	95	21	40	1	14	0			0.00	- 0.27	0.00	0	0	0.0	0	8.2	W	29	W	7	31	0	0	0.5	98
NEW HAMPSHIRE																																	
CONCORD	339	1002.4	1013.1	85	59	72.1	2.5	99	26	43	10	9	0	58	66	2.94	- 0.47	2.40	8	5	0.0	0	5.6	NW	25	NW	4	6	15	10	5.7	66
MT WASHINGTON OBS	6262	808.3		55	44	49.4	0.3	70	2	31	4	0	3			6.93	0.22	1.60	13	4	0.0	0	23.0	W#	89Y	W	4	1	13	17	7.7	31
NEW JERSEY																																	
ATLANTIC CITY	58	1012.9	1015.1	86	66	76.1	1.0	98	19	55	9	10	0	63	68	2.60	- 1.12	1.46	5	4	0.0	0	10.8	S	32*	SSW	28	10	13	8	5.3	68

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																																
ATLANTIC CITY U	10			82	69	75.7	1.5	94	27	60	9+	5	0			3.68	- 0.18	1.50	6		0.0	0	14.1		38*	WSW	20					
NEWARK	11	1013.2	1014.6	87	67	77.0	0.7	100	1	56	9	11	0	61	60	2.24	- 1.43	1.05	8	6	0.0	0	9.4	SSW	31*	NW	3	9	14	8	5.2	
TRENTON U	56	1007.0		86	66	75.7	- 0.3	97	1	53	9	9	0			3.93	- 0.25	2.04	8	9	0.0	0	7.5	NW#	29	SE	28	11	10	10	5.3	71
NEW MEXICO																																
ALBUQUERQUE	5310	848.8	1010.1	95	68	81.4	2.9	103	25+	62	17	29	0	48	36	1.43	- 0.23	0.45	12	13	0.0	0	9.6	N	43	SE	7	15	14	2	4.0	73
CLAYTON	4969	846.7		92	63	77.2	2.7	99	23	57	14	23	0			1.17	- 1.16	0.69	8	17	0.0	0						13	18	0	3.9	
RATON	6379	808.0		90	56	72.8	3.0	96	23	52	26+	15	0			0.31	- 2.09	0.08	11	22	0.0	0						5	22	4	5.3	
ROSWELL	3619	892.1		98	66	81.9	4.8	107	17	60	1	29	0			0.21	- 1.56	0.08	6	7	0.0	0	9.7		30	NW	26	18	8	5	3.9	80
SILVER CITY	5373	836.8		92	63	77.4		98	25+	58	29+	22	0			3.22		0.99	17	20	0.0	0						8	16	7	5.2	
NEW YORK																																
ALBANY	277	1010.0	1013.9	84	60	72.0	- 0.1	97	25+	41	9	11	0	59	66	1.20	- 2.29	0.42	10	7	0.0	0	6.7	SSE	32	W	3	6	14	11	6.2	66
BINGHAMTON	1590	956.4	1014.5	77	57	67.0	- 2.4	88	2	39	9	0	0	59	76	2.51	- 1.20	0.92	9	7	0.0	0	7.7	WSW	29	NW	5	7	12	12	6.0	64
BUFFALO	705	988.1	1015.2	81	60	70.2	0.4	93	1	47	9+	2	0	58	68	6.43	3.86	3.38	5	5	0.0	0	9.4	WSW	30	SW	7	11	10	10	5.1	71
NEW YORK U	132	1003.5		86	67	76.4	- 0.4	98	27+	54	9	11	0			2.19	- 1.51	0.69	11	6	0.0	0	7.0	W	30	W	3	12	14	5	4.5	66
NEW YORK LA GUARDIA	19	1012.3	1014.2	84	68	76.2	- 0.6	97	1	57	9	8	0	61	62	1.79	- 1.92	0.81	8	6	0.0	0	10.5	S	30	NW	3	6	15	10	5.5	
ROCHESTER	543	995.8	1014.8	82	59	70.9	- 0.7	95	2	42	9	6	0	58	68	2.72	- 0.12	0.81	9	7	0.0	0	9.7	WSW	33	SW	29	11	11	9	5.3	69
SCHENECTADY	217			83	61	72.4	- 1.2	96	26+	45	9	9	0			1.73	- 1.73	1.25	11	0								22	7	2	2.8	
SYRACUSE	417	992.2	1013.8	83	60	71.7	- 0.5	96	2	48	9	9	0	58	66	1.21	- 1.88	0.52	8	6	0.0	0	7.5	W	27	S	14	8	13	10	5.3	74
NORTH CAROLINA																																
ASHEVILLE U	2203	939.1		82	61	71.4	- 3.0	90	27	49	11	1	0			2.93	- 1.38	0.93	14	8	0.0	0	6.1	N#	26	NW	6	7	11	13	6.0	51
CAPE HATTERAS R	7	1014.8	1015.5	83	70	76.4	- 1.6	88	20+	55	5	0	0	70	81	2.87	- 3.28	1.12	10	13	0.0	0	10.2	SW	23*	WSW	15	5	8	18	7.1	61
CHARLOTTE	735	988.7	1016.4	89	67	77.9	- 0.8	96	28	55	11	16	0	66	70	2.19	- 2.69	0.82	9	9	0.0	0	6.3	SW	26	SW	16	6	14	11	5.9	73
GREENSBORO	891	985.5	1016.5	85	63	74.0	- 3.3	93	20	50	11	5	0	63	74	3.49	- 1.30	1.78			0.0	0	6.5	SW	27	W	23					
RALEIGH	433	1002.1	1015.7	87	65	76.0	- 1.9	97	28	49	11	13	0	65	73	3.51	- 1.98	1.12	11	10	0.0	0	6.2	SW	26*	NW	2	5	16	10	6.1	58
WILMINGTON	30	1013.6	1016.3	87	69	78.0	- 2.0	94	20	60	11	14	0	69	78	11.74	4.06	3.67	15	16	0.0	0	6.0	SW	42	N	28	3	17	11	6.5	63
WINSTON SALEM	967	981.6	1016.4	85	65	74.7	- 3.3	93	28+	54	11	7	0	64	73	4.19	- 0.44	1.50	14	9	0.0	0	6.5	WSW	21*	WSW	29	5	14	12	6.1	
NORTH DAKOTA																																
BISMARCK	1647	953.2	1012.5	85	59	71.9	- 0.3	101	25	51	14+	8	0	57	63	2.76	0.57	1.22	10	11	0.0	0	9.4	SSE	45	NE	31+	15	9	7	4.8	79
FARGO	900	979.6	1013.2	86	61	73.6	2.2	99	25	48	2	8	0	61	67	0.66	- 2.25	0.22	10	5	0.0	0	9.7	SSE	29	S	10	8	14	9	5.3	75
WILLISTON	1899	945.2		86	59	72.5	1.2	100	22	49	31	9	0			6.20	4.33	5.03	8	8	0.0	0	9.7	SE#	63	NW	5	11	13	7	4.9	76
OHIO																																
AKRON	1209	978.3	1016.1	83	59	71.2	- 0.4	92	1	43	9	5	0	55	59	1.95	- 1.82	0.74	10	8	0.0	0	6.8	WSW	23*	NW	20	11	12	8	4.9	
CINCINNATI OBS	761			86	65	75.4	- 1.5	92	2	55	10	6	0			3.99	0.40	1.65	9	5	0.0	0	4.7	S#	17	N	22+					73
CINCINNATI U	553	993.1		87	67	76.9		93	19+	58	11	8	0			4.10		1.70	9	5												
CLEVELAND	777	988.1	1015.6	82	60	71.3	0.3	93	2	44	9+	5	0	59	66	1.88	- 1.43	0.91	10	5	0.0	0	9.4	S	29	S	22	11	13	7	4.9	72
COLUMBUS	812	986.6	1016.2	86	62	73.9	- 0.9	94	18	45	10	10	0	61	66	2.90	- 1.03	1.12	8	7	0.0	0	7.5	SW	26	W	27	7	17	7	5.5	70
COLUMBUS U	724			85	65	75.1	- 1.3	93	1	53	10	7	0			2.28	- 1.39	0.99	8	4	0.0	0										
DAYTON	997	983.7	1016.0	83	62	72.4	- 2.8	89	18+	48	10	0	0	59	67	3.13	- 0.40	1.35	10	8	0.0	0	8.8	SSW	34	NW	19	6	17	8	5.2	76
MANSFIELD	1296			82	60	71.2	- 0.5	91	2	45	10	2	0			3.08	- 0.40	0.77	11	9	0.0	0						7	19	5	5.4	
SANDUSKY U	606	994.1		84	65	74.8	- 0.2	97	2	52	9	6	0			2.58	- 0.95	1.09	13	8	0.0	0	7.9	SW#	42	NW	14	17	12	2	3.3	85
TOLEDO	676	990.2	1015.2	85	60	72.7	0.0	96	2	45	10+	9	0	59	66	1.98	- 0.61	0.98	9	8	0.0	0	7.1	SW	27	W	14	9	17	5	4.9	79
YOUNGSTOWN	1178	973.8	1016.0	81	58	69.5	- 1.5	90	17+	44	9	3	0	57	66	2.07	- 2.25	0.70	7	5	0.0	0	8.2	SW	27*	WSW	19	12	11	8	5.2	
OKLAHOMA																																
OKLAHOMA CITY	1280	970.1	1012.4	95	71	83.1	2.1	102	25+	66	15	26	0	67	63	6.19	3.82	2.12	7	8	0.0	0	12.3	SSE	41	S	29	13	10	8	4.7	80
TULSA	676	989.5	1013.4	96	74	85.0	2.8	104	22+	65	11	24	0	70	65	10.60	7.66	7.54	9	6	0.0	0	11.5	SSE	26	S	29+	11	13	7	5.0	67
OREGON																																
ASTORIA	8	1017.6	1018.2	67	53	60.3	0.2	73	23	44	3+	0	0	53	79	1.52	0.25	0.86	11	0	0.0	0	8.9	NNW	23*	SSW	21	2	8	21	8.2	
BURNS U	4151	872.8		80	47	63.4	- 6.1	88	19+	39	8	0	0			0.28	- 0.06	0.28	1	4	0.0	0						24	3	4	2.3	
EUGENE	361	1004.2		76	50	62.9	- 3.7	89	27	44	1	0	0			0.32	0.05	0.19	3	1	0.0	0	6.6		24*	W	6	9	8	14	5.7	
MEACHAM	4050			71	46	58.6	- 4.8	84	19	40	23	0	0			0.24	- 0.26	0.11	5	0	0.0	0						16	8	7	3.7	
MEDFORD	1298	968.6	1015.8	83	50	66.7	- 5.3	98	27	42	8	6	0	48	55	0.15	- 0.06	0.12	3	0	0.0	0	6.0	WNW	20*	WNW	23+	22	5	4	2.7	
PENDLETON	1482	961.4	1014.4	83	55	68.6	- 5.0	94	19	46	23	4	0	42	39	0.32	0.10	0.23	2	2	0.0	0	9.9	W	35*	W	31	21	5	5	2.9	
PORTLAND	21	1011.8	1017.3	72	54	63.1	- 4.1	83	27	46	23	0	0	52	70	1.17	0.76	0.37	10	1	0.0	0	8.1	NW	24	SW	24	1	12	18	7.5	41

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 90°F. or above	Temperature: No. of days Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .01 inch or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile Speed	Wind: Fastest mile Direction	Wind: Fastest mile Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND U	30			74	56	65.1	- 3.5	84	27+	52	19	0	0			1.43	1.04	0.49	9	0												
ROSEBURG	505	998.6		79	50	64.2	- 3.7	93	27	44	23+	1	0			0.18	- 0.03	0.11	4	0	0.0	0	5.7	N#	23	N	25	10	11	10	5.2	66
SALEM	195	1010.6	1018.0	75	49	61.9	- 5.2	89	27	42	1	0	0	52	72	0.91	0.56	0.38	8	1	0.0	0	6.5	NW	21*	WNW	3	5	13	13	6.6	
SEXTON SUMMIT R	3836	885.1		68	46	56.8	- 6.8	83	27	39	1	0	0			0.35	0.03	0.30	4	0	0.0	0	11.6	NNW				18	7	6	3.4	
PACIFIC AREA																																
CANTON ISLAND	11	1009.0	1009.2	89	78	83.5	- 0.1	90	31+	74	5	10	0	74	75	1.88	- 0.71	0.53	11	0	0.0	0	10.6	E	25*	E	14	10	8	13	6.1	
ENIWETOK	16	1009.1		88	78	82.9	0.1	91	15	73	4	3	0			8.47	2.02	1.48	26	5	0.0	0	10.2									
TAGUAC GUAM R	361																				0.0	0	6.0	E#	34	E	11					
JOHNSTON	7	1013.0	1013.6	82	78	80.3	- 0.8	84	26	75	20+	0	0	74	82	1.20	- 0.10	0.31	20	0	0.0	0	15.1	E	31	SE	20	2	23	6	5.8	62
KOROR R	94	1006.6	1009.4	87	75	81.2	0.3	90	27	72	20	1	0	76	88	11.19	- 3.98	2.44	21	2	0.0	0	6.1	SW	21	SW	3	0	1	30	9.7	61
KWAJALEIN		1009.7	1009.8	87	77	81.6	0.0	91	8	73	13	1	0	75	83	9.80	0.89	2.71	24	4	0.0	0	9.0	ENE	29	ESE	28+	2	5	24	8.2	
PONAPE R	123	1004.8	1009.3	88	73	80.3	0.6	91	26	71	1	6	0	75	87	13.73	- 2.49	1.82	26	3	0.0	0	2.8	SE	15	N	17	0	3	28	8.9	55
TRUK MOEN ISLAND	5	1009.4	1009.5	87	75	80.8	0.3	89	31+	73	14+	0	0	75	84	14.01	1.68	2.70	23	2	0.0	0	4.6	SW	30	SW	15	1	7	23	8.5	47
WAKE	11	1012.7	1012.8	88	78	82.8	0.8	90	12	72	15	1	0	74	75	1.38	- 3.22	0.72	8	0	0.0	0	9.2	ENE	21*	SE	22+	6	10	15	7.1	
YAP R	53	1006.7	1008.2	87	75	81.0	- 0.4	90	27+	72	15	2	0	76	88	13.49	- 0.29	2.64	27	1	0.0	0	5.8	SW	23	S	24	0	0	31	10.0	55
PENNSYLVANIA																																
ALLENTOWN	376	1000.9	1015.0	86	62	74.1	0.0	97	1	48	9	11	0	60	65	2.48	- 2.34	1.10	11	8	0.0	0	7.5	WNW	46*	N	20	10	17	4	4.7	
ERIE	732	989.2	1015.1	80	62	70.8	- 0.3	94	2	44	9	1	0	59	66	2.71	- 0.96	1.13	5	4	0.0	0	11.0	S	30*	SSE	14	17	6	8	4.3	
HARRISBURG	335	1001.4	1015.1	88	64	76.4	0.7	98	28+	53	9	13	0	61	62	1.97	- 1.54	1.04	7	7	0.0	0	8.3	W	34	W	28	10	11	10	5.3	80
PHILADELPHIA	5	1010.4	1014.7	88	64	76.0	0.4	97	1	53	10+	11	0	63	67	3.13	- 1.03	0.91	8	5	0.0	0	7.7	WSW	35	SW	29	7	14	10	5.5	66
PITTSBURGH	1137	985.5	1016.0	83	59	70.8	- 1.3	92	17	42	9	6	0	58	66	3.45	- 0.43	1.07	10	8	0.0	0	7.1	WSW	24*	NNE	10	5	15	11	6.1	73
PITTSBURGH U	749			84	63	73.9	- 1.9	95	17	51	10+	7	0			2.47	- 1.13	0.88	8													68
READING U	266	1002.6		87	66	76.3	- 0.6	98	1	55	9	11	0			3.55	- 0.71	1.52	9	8	0.0	0	8.3	NW#	46	W	28	10	17	4	5.0	68
SCRANTON	940	981.2	1014.9	83	61	71.5	0.1	92	2+	46	9	6	0	59	70	4.03	- 0.76	1.57	11	11	0.0	0	6.8	ESE	25	NW	5	9	11	11	5.8	74
WILLIAMSPORT	527	996.5	1015.3	85	60	72.2	- 1.4	95	26+	43	9	8	0	60	70	3.12	- 1.06	0.66	12	12	0.0	0	7.0	W	35*	W	2	7	16	8	5.8	
RHODE ISLAND																																
BLOCK ISLAND	110	1009.3		76	63	69.4	- 0.2	88	27	55	9	0	0			3.13	0.44	2.20	8	5	0.0	0						3	15	13	6.4	
PROVIDENCE	55	1007.5	1013.4	82	64	72.8	0.7	95	26	53	6	9	0	61	70	3.35	0.44	1.29	8	6	0.0	0	9.9	SW	26*	NW	4	8	13	10	5.7	64
SOUTH CAROLINA																																
CHARLESTON	41	1014.6	1016.6	89	70	79.9	- 0.2	95	27+	62	12+	15	0	69	75	7.94	0.23	3.89	12	14	0.0	0	7.3	SW	36Y	NW	1	9	12	10	5.8	69
CHARLESTON U	9			87	74	80.3	- 1.2	94	20	67	11+	8	0			6.19	- 1.59	1.80	14		0.0	0			34	SE	28					
COLUMBIA	217	1003.8	1016.3	91	69	79.9	- 1.7	96	28+	58	11	23	0	67	70	2.48	- 3.61	0.65	8	6	0.0	0	6.9	SW	29*	NW	20	7	17	7	5.5	71
FLORENCE	146	1010.4	1016.0	90	68	79.3	- 1.4	98	20	57	11	20	0	68	74	3.83	- 2.41	2.00	11	12	0.0	0	7.6	SW	26*	WSW	30	6	17	8	5.8	
GNVLE SPARTANBURG	957	980.0	1016.4	87	68	77.5	- 2.4	92	3	58	11	9	0	66	73	2.46	- 2.19	0.72	9	9	0.0	0	6.6	WSW	31	W	20	7	18	6	5.8	64
SOUTH DAKOTA																																
HURON	1282	966.2	1012.2	88	64	76.0	0.5	97	23	53	2	11	0	63	68	4.40	2.59	1.67	13	17	0.0	0	10.9	ESE	36	NE	7	11	12	8	4.8	70
RAPID CITY	3165	900.7	1012.1	88	60	74.4	0.6	101	25	53	28+	14	0	57	57	2.03	0.25	0.54	12	14	0.0	0	8.9	NNW	38	NW	29	14	14	3	4.0	73
SIOUX FALLS	1420	962.7	1013.2	87	65	75.8	1.5	98	22	58	14+	10	0	63	69	6.45	3.61	2.69	10	14	0.0	0	11.3	ESE	32*	N	29	8	15	8	5.5	
TENNESSEE																																
BRISTOL	1507	963.2	1017.0	81	61	71.1	- 4.3	88	27	48	10	0	0	62	78	3.26	- 2.29	0.86	14	5	0.0	0	4.0	WSW	17*	WNW	1	5	13	13	6.5	
CHATTANOOGA	670	989.8	1017.0	87	67	76.7	- 2.5	92	7+	56	11	6	0	68	80	10.82	5.71	2.08	14	14	0.0	0	6.3	S	38	N	6	8	11	12	6.1	58
KNOXVILLE	950	982.3	1017.4	83	64	73.6	- 5.3	88	27+	54	11+	0	0	64	78	4.92	0.10	1.76	18	10	0.0	0	6.0	SSW	30	W	28	4	14	13	6.6	50
MEMPHIS	263	1001.4	1015.8	89	72	80.1	- 1.7	95	5+	59	11	13	0	71	77	4.38	0.84	1.20	10	11	0.0	0	7.8	S	38	N	17	9	14	8	5.5	74
MEMPHIS U	271			88	73	80.5	- 1.2	96	5	64	11+	13	0			3.84	0.42	1.46	11	0												
NASHVILLE	577	996.2	1015.9	88	67	77.6	- 2.6	92	19+	56	11+	13	0	67	75	5.33	1.61	1.93	11	10	0.0	0	7.1	S	52	NW	7	10	13	8	5.4	66
OAK RIDGE	905	985.8		84	64	73.7	- 4.0	91	27+	52	10	4	0			7.51	1.56	2.37	16	11	0.0	0	5.5		49Y		28	8	12	11	6.0	
TEXAS																																
ABILENE	1759	952.0	1012.0	98	74	86.1	2.9	103	25+	67	2	31	0	62	48	0.28	- 2.00	0.18	2	2	0.0	0	9.5	SSE	29	NE	9	16	8	7	4.1	90
AMARILLO	3607	888.6	1010.6	94	68	81.3	2.2	100	23	63	28	29	0	58	49	2.04	- 0.30	0.88	8	7	0.0	0	15.3	S	55	NW	12	16	15	0	3.6	82
AUSTIN	597	992.9	1014.4	98	75	86.4	1.9	103	24	68	1	30	0	69	61	0.58	- 1.60	0.33	2	3	0.0	0	9.3	S	29	SE	1	10	13	8	5.0	72
BROWNSVILLE	16	1011.8	1014.3	92	77	84.2	0.2	94	30+	71	1	27	0	74	75	0.76	- 0.92	0.56	4	2	0.0	0	13.4	SSE	29	SE	13	8	18	5	5.2	61
CORPUS CHRISTI	43	1013.7	1014.8	93	77	84.6	0.5	96	25+	70	2	28	0	73	71	0.49	- 1.83	0.37	2	0	0.0	0	12.4	SSE	33	SE	1	7	18	6	5.1	80
DALLAS	481	995.3	1013.4	98	78	87.6	2.7	103	24+	71	1	29	0	69	57	1.71	- 0.23	1.60	3	2	0.0	0	12.2	S	36	S	1	14	11	6	4.3	81

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation			No. of days		Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below			Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TEXAS																																
DEL RIO	1026	978.4		98	75	86.5		102	24+	68	2	29	0			0.09											11	13	7	5.0	
EL PASO	3918	884.8	1008.7	97	73	84.9	3.5	106	15	65	4	28	0	55	39	0.52	- 0.77	0.28	7	8	0.0	0	6.5	SSE	42	E	7	16	9	6	4.1	85
FORT WORTH	544	993.0	1013.3	99	76	87.4	2.0	105	22	70	3+	31	0	67	54	2.28	0.53	2.18	3	5	0.0	0	10.5	SSE	33*	SE	1	17	8	6	4.2	
GALVESTON U	7			87	80	83.6	0.5	89	24	70	26	0	0			1.94	- 2.85	1.37	4		0.0	0	10.3		30	SW	26					83
GALVESTON	5	1015.6	1016.4	89	80	84.5	0.9	91	24+	67	26	16	0	74	71	2.04	- 2.83	1.65	5	9	0.0	0	9.7	S				10	13	8	5.2	
HOUSTON U	41			93	78	85.4	1.5	96	21	74	3+	28	0			0.78	- 4.37	0.64	6		0.0	0										
HOUSTON	50	1012.8	1015.4	94	75	84.3	0.3	98	23	72	4+	28	0	74	77	2.08	- 2.21	1.26	6	9	0.0	0	8.2	SSE	29*	S	24	2	19	10	6.1	82
LAREDO	500	997.4	1012.6	99	76	87.9	0.4	104	12	72	3+	29	0	68	57	0.22	- 1.14	0.17	2	0	0.0	0	12.5	ESE	28*	SSE	1	17	11	3	4.2	
LUBBOCK	3243	902.9	1011.5	95	69	81.9	2.4	100	23	61	28	27	0	61	52	0.37	- 1.64	0.18	5	6	0.0	0	12.8	SSE	29*	ESE	27	15	13	3	3.6	
MIDLAND	2854	914.2	1010.5	97	70	83.5	0.6	103	23	64	2	29	0	60	50	1.17	- 0.71	0.96	5	6	0.0	0	11.4	SSE	35*	SE	13	16	9	6	3.9	
PORT ARTHUR	16	1014.3	1015.7	95	75	84.6	2.7	100	23	70	26	30	0	75	77	4.49	- 1.51	2.98	9	16	0.0	0	7.5	S	66	SW	26	0	21	10	6.5	71
SAN ANGELO	1903	946.0	1011.3	100	75	87.1	2.3	104	24+	66	2	31	0	61	45	T	- 1.41	T	0	0	0.0	0	8.6	SSE	24*	SSE	27	18	10	3	3.4	
SAN ANTONIO	792	989.5	1014.0	96	75	85.4	1.4	100	24	69	3+	28	0	69	63	0.03	- 2.06	0.03	1	0	0.0	0	9.5	SSE	26	SE	24	10	17	4	4.5	78
VICTORIA	104	1010.5		94	75	84.4	1.2	98	21	71	24+	29	0			1.48	- 2.13	0.55	6	6	0.0	0	9.0		99Y		24	2	21	8	5.7	
WACO	500	993.5	1014.0	99	76	87.5	2.2	103	24+	70	3+	31	0	67	55	T	- 1.99	T	0	2	0.0	0	14.8	SSE	35*	SSE	1	18	8	5	3.9	
WICHITA FALLS	994	976.0	1011.9	100	74	86.6	1.5	106	4	68	26	31	0	66	53	4.46	2.49	2.98	7	8	0.0	0	11.4	S	35*	NE	13	15	11	5	4.1	
UTAH																																
MILFORD	5028	843.9		95	54	74.3	0.5	99	24	42	1	30	0			0.05	- 0.65	0.05	1	2	0.0	0						20	6	5	2.8	
SALT LAKE CITY	4220	866.3	1010.3	95	61	77.8	1.4	102	24	43	1	27	0	40	29	T	- 0.58	T	0	2	0.0	0	11.5	SE	32	S	9	18	6	7	3.5	84
WENDOVER	4237	868.5		92	66	78.8	- 0.6	100	24	60	27+	21	0			0.00	- 0.31	0.00	0	0	0.0	0						29	2	0	0.9	
VERMONT																																
BURLINGTON	331	998.1	1012.5	82	58	70.3	- 0.2	97	29+	45	9	8	0	58	67	2.79	- 1.06	1.15	10	7	0.0	0	7.0	S	27	SW	14	7	14	10	6.0	66
VIRGINIA																																
LYNCHBURG	947	990.9		87	63	74.8	- 1.5	97	28	50	11	10	0			1.75	- 2.46	0.86	9	7	0.0	0	5.5		37	NE	28	5	17	9	5.8	61
NORFOLK	26	1014.3	1015.7	86	68	77.0	- 1.8	97	20+	59	13+	12	0	66	71	2.01	- 3.91	0.90	8	4	0.0	0	8.9	SSW	29	SW	18	7	17	7	5.7	64
RICHMOND	162	1009.3	1015.4	88	64	76.1	- 2.0	96	27+	52	5	14	0	64	70	0.52	- 5.09	0.42	3	5	0.0	0	7.4	S	20	SE	28	6	18	7	5.6	62
ROANOKE	1174	974.8	1016.4	87	63	75.0	- 1.6	95	1	52	11+	7	0	60	64	2.68	- 1.57	0.86	12	11	0.0	0	7.9	WSW	29*	SW	27	5	17	9	5.9	
WASHINGTON																																
OLYMPIA	190	1011.0	1018.1	74	50	62.0	- 1.9	81	18	39	23	0	0	51	71	1.48	0.72	0.55	7	0	0.0	0	6.7	SSW	23*	SW	22	3	9	19	7.6	
SEATTLE TACOMA	400	1003.6	1017.5	71	54	62.4	- 1.5	78	27	47	23	0	0	51	70	1.18	0.37	0.54	7	0	0.0	0	8.2	SW	21*	SSW	4	4	11	16	7.1	
SEATTLE U	14			71	56	63.6	- 2.0	77	27+	52	23	0	0			0.85	0.22	0.38	8	0	0.0	0			27	SW	22					64
SPOKANE	2356	945.3	1013.1	80	53	66.7	- 2.8	90	6	44	23	1	0	42	43	0.41	0.03	0.32	4	1	0.0	0	8.9	SW	34	SW	24	16	7	8	4.1	76
STAMPEDE PASS R	3958	881.0		59	43	50.9	- 5.3	72	3	37	23+	0	0			2.95	1.49	0.72	12	0	0.0	0			4	8	19	7.4				
TATOOSH ISLAND	101	1015.2	1018.1	61	53	57.0	1.5	65	7+	50	21	0	0	53	88	4.67	2.33	1.28	12	0	0.0	0	10.9	SW	40	S	21	1	5	25	8.6	32
WALLA WALLA U	949			83	59	70.8	- 5.2	94	19	52	23	3	0			0.49	0.28	0.35	4	3	0.0	0										
YAKIMA	1061	975.3	1013.7	82	52	67.1	- 3.9	92	27	39	23	2	0	45	46	0.69	0.56	0.66	2	2	0.0	0	8.1	W	28*	SSW	4	14	10	7	4.4	
WEST INDIES																																
SAN JUAN P.R.	5	1014.1	1017.0	88	75	81.3	0.9	90	4	72	8	1	0	73	79	5.02	- 1.23	1.06	22	2	0.0	0	10.2	ENE	27	E	31	4	15	12	6.3	67
SWAN ISLAND	28	1012.4		86	76	81.0	- 1.5	88	31+	71	20+	0	0			9.26	5.06	3.11	16	13	0.0	0						3	11	17	7.3	
WEST VIRGINIA																																
BECKLEY	2504	930.4	1017.2	77	57	66.8		86	18	41	10	0	0	59	77	4.06		1.79	14	11	0.0	0	7.8	SSW	35*	WNW	29	1	17	13	7.1	
CHARLESTON	939	967.1	1016.4	83	61	72.0	- 2.4	91	28+	46	10	4	0	62	76	3.06	- 2.61	1.15	8	4	0.0	0	5.0	SW	22*	WSW	14	2	18	11	6.6	
ELKINS	1970	948.7	1017.4	79	54	66.2	- 3.9	90	17	39	10+	1	0	58	80	3.77	- 1.71	1.35	14	10	0.0	0	5.3	NW	32*	NNW	28	3	14	14	7.1	
HUNTINGTON	827	986.8	1016.7	83	60	71.4		90	27	49	10	1	0	61	74	3.68	- 1.27	1.56	10	6	0.0	0	5.9	S	22*	WSW	28	3	16	12	6.5	
PARKERSBURG U	615			84	62	73.0	- 2.8	92	27+	50	9	4	0			2.80	- 1.31	1.37	11	6	0.0	0	5.5		37	W	28					66
WISCONSIN																																
GREEN BAY	682	992.3	1014.7	82	58	70.0	0.5	93	1	43	9	1	0	61	76	2.77	0.06	1.27	8	6	0.0	0	6.9	SW	40	N	21	10	17	4	4.8	77
LA CROSSE	652	990.5	1014.7	85	63	73.7	- 0.1	99	1	52	4	4	0	61	69	5.14	1.39	2.14	9	5	0.0	0	8.6	SE	35*	NNW	16	11	13	7	4.9	
MADISON	858	980.3	1014.9	85	61	73.1	2.0	95	1	49	9	3	0	62	68	2.29	- 1.29	0.98	9	6	0.0	0	7.4	S	30	N	21	10	17	4	4.8	73
MILWAUKEE	672	990.6	1015.4	81	61	70.8	2.1	98	1	44	10	2	0	57	63	2.36	- 0.59	1.23	5	5	0.0	0	9.8	SSW	35	NE	21	14	14	3	4.1	83
WYOMING																																
CASPER	5319	838.1	1011.4	88	56	72.0	0.3	96	25	48	28	12	0	42	38	1.20	0.20	0.68	6	10	0.0	0	10.6	WSW	33*	NNW	7	15	11	5	4.0	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

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State and Station	Elevation (ground)	Pressure		Temperature								No. of days			Precipitation								Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point	Average relative humidity	Total	Departure from normal	Greatest in 24 hours	No of days: .01 inch or more	No of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	°F.	°F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
WYOMING																																	
CHEYENNE	6126	814.0	1012.2	88	57	72.7	3.7	95	21	52	27	14	0	47	47	0.77	- 1.05	0.24	9	16	0.0	0	12.3	WNW	42	W	14	7	21	3	4.9	75
LANDER	5563	835.8	1011.4	87	55	70.8	0.2	96	25	46	27	8	0	41	38	0.05	- 0.72	0.05	1	7	0.0	0	7.4	WSW	34	SW	24+	13	11	7	4.1	74
SHERIDAN	3942	883.7	1012.3	87	55	70.8	- 0.5	97	24+	45	1	8	0	49	49	0.51	- 0.68	0.19	7	11	0.0	0	7.2	SE	39	NW	28	15	12	4	3.8	76

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 C or lower			Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers) Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	992.4	1017.3	31.1	21.1	25.9	-0.8	34.4	6	14.4	11	9	0	21.1	78	166	35	35	18	14	0	0	2.6	W	21.0	NE	24	4	14	13	6.5	58
HUNTSVILLE	184	993.9	1016.8	31.1	20.0	25.8	-1.5	34.4	6	13.3	11	15	0	20.0	74	154	46	48	12	11	0	0	2.9	SE	28.2*	N	20	10	10	11	5.7	
MOBILE	64	1014.5	1016.7	33.3	23.3	28.2	0.9	35.6	21+	20.6	25	22	0	22.2	77	210	- 36	45	16	17	0	0	2.6	SW	9.4*	SW	25+	3	18	10	6.3	
MONTGOMERY	59	1008.8	1016.9	32.8	21.7	27.1	-0.6	34.4	28+	17.2	11+	22	0	21.7	76	91	- 46	24	11	15	0	0	3.0	WSW	13.0	W	7	3	17	11	6.4	67
ALASKA												8																				
ANCHORAGE	27	1008.1	1012.9	18.3	11.1	14.8	0.8	22.2	13+	7.2	28	7	0	10.0	76	70	23	29	9	0	0	0	2.4	SE	7.6*	SE	15	3	10	18	7.6	50
ANNETTE	34	1012.2	1016.3	18.3	11.7	15.1	1.3	25.0	4	8.3	21	7	0	11.1	82	142	- 11	37	13	0	0	0	3.4	S	10.7*	S	18	2	9	20	8.0	
BARROW	7	1009.4	1010.2	5.0	0.6	2.7	-1.2	17.2	25	- 2.2	14	0	14	1.7	92	42	22	13	12	0	89	76	5.6	E	11.2*	WSW	27	2	5	24	8.5	
BARTER ISLAND	12	1007.9	1009.7	7.2	2.2	4.4	-0.7	16.1	26	- 0.6	29	0	7	2.8	89	38	15	7	13	0	10	T	5.1	ENE	17.9*	WSW	5	2	5	24	8.4	
BETHEL	38	1009.9	1012.8	16.7	8.3	12.3	-0.3	27.2	10	3.9	1	9	0	8.9	83	52	1	15	14	0	0	0	5.1	SSW	11.2*	SSW	31+	3	4	24	8.4	
COLD BAY	29	1013.9	1017.7	12.8	8.3	10.3	0.5	16.1	13	5.6	9+	0	0	8.9	93	109	62	44	14	0	0	0	7.1	SSE	17.0*	WSW	21	1	2	28	9.4	
CORDOVA	12	1012.8	1014.4	16.1	8.3	12.1	0.3	27.2	5	3.3	20	1	0	10.0	88	233	74	59	17	0	0	0	2.5	E	9.4*	WSW	22	1	7	23	8.8	
FAIRBANKS	133	994.5	1011.3	21.1	10.0	15.6	0.2	28.9	11	4.4	28	14	0	9.4	69	35	- 12	13	14	2	0	0	2.8	SW	9.4*	WSW	12	1	7	23	8.2	
JUNEAU	5	1015.2	1015.2	17.2	8.9	13.0	0.1	23.9	8	5.0	22	5	0	9.4	81	133	19	38	19	0	0	0	3.5	NNW	13.4*	ESE	5	3	1	27	8.7	28
KING SALMON	13	1012.8	1014.1	17.8	7.8	12.7	-0.1	26.1	29	4.4	4+	9	0	8.9	82	42	- 10	12	10	0	0	0	4.7	SW	14.8*	W	17	1	4	26	8.7	
KOTZEBUE	3	1009.8	1010.2	12.8	7.2	9.9	-1.6	18.9	6	3.3	4	0	0	7.8	86	71	34	35	14	0	0	0	6.3	WNW	15.6*	WNW	18	1	8	22	8.3	
MC GRATH	102	999.5	1012.1	19.4	9.4	14.5	-0.3	28.3	10	4.4	2	14	0	8.9	71	20	- 42	4	13	4	0	0	3.2	S	10.3	SW	4	2	6	23	8.3	
NOME	4	1010.3	1011.0	11.7	6.1	8.9	-0.8	18.3	31	2.2	5	0	0	6.7	85	24	- 34	7	12	0	0	0	5.6	W	13.9*	NW	17	6	4	21	7.5	28
ST. PAUL ISLAND	7	1013.8	1014.7	9.4	5.6	7.4	-0.1	12.2	11	2.2	7	0	0	6.7	97	109	52	46	14	0	0	0	6.3	WSW	15.6*	W	19	0	2	29	9.7	
SHEMYA	37	1008.7	1012.7	9.4	6.7	8.1	0.1	12.8	29	5.0	13	0	0	7.2	96	88	34	14	18	0	0	0	6.7	S	21.9*	S	31	0	2	29	9.6	
YAKUTAT	9	1014.6	1015.7	15.0	10.0	12.6	0.3	20.6	28	5.0	20	0	0	11.1	90	236	22	100	18	0	0	0	2.6	ESE	9.8*	ESE	5	3	3	25	8.6	
ARIZONA																																
FLAGSTAFF	2131	793.3	1013.5	28.9	11.1	20.0	1.1	31.7	24	6.7	1	0	0	3.9	38	8	- 50	6	5	6	0	0	3.0	SSW	8.9*	WSW	27	14	11	6	4.7	
PHOENIX	340	969.7	1007.5	41.1	25.6	33.3	0.4	44.4	24	20.6	6	31	0	10.6	25	1	- 19	1	1	4	0	0	3.4	W	16.5*	S	27	23	9	1	2.4	92
PRESCOTT	1528	847.8	1010.7	33.9	17.2	25.6	1.1	36.7	30	15.0	13+	26	0	5.0	30	14	- 39	7	4	6	0	0	4.2	SW	14.3	S	19+	18	11	2	3.3	78
TUCSON	788	923.2	1008.7	37.8	23.9	30.9	0.8	41.7	25	21.1	28+	31	0	12.2	37	42	- 10	19	10	14	0	0	4.3	SSE	20.1	W	10	8	17	6	4.9	78
WINSLOW	1487	851.9	1010.8	36.7	17.8	27.2	0.1	40.0	25	13.3	13+	30	0	7.2	32	4	- 22	2	4	6	0	0	3.7	WSW	16.5*	WSW	28	12	13	6	4.9	
YUMA	61	1002.2	1007.3	42.2	26.7	34.2	-0.7	45.6	25+	20.6	7	31	0	12.2	30	1	- 5	1	1	0	0	0	4.2	SSE	15.6	SE	26	23	7	1	2.2	94
ARKANSAS																																
FORT SMITH	137	998.0	1014.6	35.0	21.7	28.2	-0.1	39.4	24+	16.7	10	25	0	21.7	72	158	87	68	9	8	0	0	2.8	ENE	16.1	SW	6	11	10	10	5.5	67
LITTLE ROCK	78	1002.6	1015.6	33.3	21.7	27.5	-0.2	40.0	4	13.9	11	22	0	21.7	75	141	56	49	11	13	0	0	3.0	WSW	18.8	W	22	7	12	12	6.3	64
TEXARKANA	110	1001.7	1015.4	33.3	22.8	27.9	-0.2	37.2	22+	20.0	10+	22	0	22.2	76	115	17	64	7	11	0	0	2.5	SSW								
CALIFORNIA																																
BAKERSFIELD	151	993.8	1011.1	34.4	18.9	26.6	-2.5	39.4	13	13.9	2	22	0	8.9	34	0	0	0	0	0	0	0	3.0	NW	6.7*	NNW	4+	30	1	0	.5	
BISHOP	1252	872.1		36.1	11.1	23.8	-0.7	38.9	25+	6.1	4	31	0			0	- 3	0	0	0	0	0						30	1	0	.6	
BLUE CANYON	1609	840.9		22.8	12.2	17.5	-2.8	26.7	26+	8.3	6+	0				0	- 2	0	0	0	0	0	3.1	SSW	10.7	ENE	26+	30	1	0	.3	
BURBANK	213	986.8	1012.4	28.9	15.6	22.1	-1.1	32.2	24+	12.8	29	3	0	13.3	63	0	0	0	0	0	0	0	3.1	S	7.2*	S	26+	27	4	0	2.0	
EUREKA U	13	1015.1		16.7	11.7	14.0	0.5	18.3	24+	8.9	3+	0	0			3	0	1	5	0	0	0	3.2	NW	11.6	NW	25+	9	12	10	5.2	69
FRESNO	99	999.3	1010.9	35.6	16.1	25.8	-1.2	39.4	14+	12.2	3+	25	0	8.9	37	0	0	0	0	0	0	0	3.8	WNW	9.4	NW	7	31	0	0	.1	100
LONG BEACH	10	1011.6	1013.1	27.2	15.6	21.4	-0.8	31.1	18	12.8	3+	0	0	15.0	75	T	0	T	0	0	0	0	2.9	WNW	7.6*	NW	18+	20	9	2	3.2	
LOS ANGELES	30	1009.0	1012.8	24.4	16.7	20.4	0.6	26.7	26	13.9	2	0	0	15.0	75	0	0	0	0	0	0	0	3.6	WSW	8.9*	W	4	18	12	1	3.2	
LOS ANGELES U	95			27.8	16.7	22.3	-0.5	30.6	25+	14.4	12	0	0			0	0	0	0	0	0	0	2.4	WW	7.6	W	28	26	5	0	2.1	88
MT SHASTA R	1080	892.3		26.7	8.3	17.5	-2.5	33.9	27+	3.9	8+	2	0			2	- 6	2	1	1	0	0						23	4	4	1.8	
OAKLAND	1	1014.1	1014.4	22.2	13.3	17.6	-0.4	34.4	26	10.0	3	1	0	11.1	70	T		T	0	0	0	0	4.9	WNW	10.7*	NW	27+	21	10	0	2.5	
POINT ARGUELLO R	112	1000.5		18.3	11.1	14.7	-0.1	26.7	26	8.9	9	0	0			1	1	1	3	0	0	0	3.3		8.9*	NW	3	6	10	15	6.5	
RED BLUFF	104	999.0	1011.3	33.9	17.2	25.7	-3.1	40.0	13+	11.1	2	22	0	7.2	34	0	- 1	0	0	0	0	0	4.1	SSE	11.2	SE	23	27	4	0	1.9	97
SACRAMENTO	5	1011.4	1012.2	32.8	13.3	23.3	-1.9	37.8	26+	10.6	3	20	0	12.2	58	0	0	0	0	0	0	0	3.2	SW	9.8	SW	4	30	1	0	.6	100
SACRAMENTO U	7			31.7	13.9	22.8	-1.6	37.2	12	11.1	3+	15	0			0	0	0			0	0										
SANDBERG R	1377	862.9		28.3	15.0	21.7	-1.9	32.8	23	10.6	5	1	0			0	- 1	0	0	0			5.0	NNW	13.2*	NNW	18+	29	1	1	.7	
SAN DIEGO	4	1009.5	1012.6	23.3	16.7	20.1	-0.8	25.6	24+	15.0	10	0	0	15.0	77	0	0	0	0	0	0	0	3.0	WNW	8.0	NW	1	15	13	2	4.9	71
SAN FRANCISCO	2	1014.1	1014.7	21.7	12.2	16.8	-0.3	34.4	26	10.0	25	1	0	11.1	75	T		T	0	0	0	0	5.5	W	15.2	WSW	21	24	7	0	1.8	
SAN FRANCISCO U	16			18.3	12.2	15.4	0.5	31.1	26	11.1	29	0	0			T		T	0	0	0	0	5.1	WW	13.0	W	8					77
SANTA CATALINA	478	957.3		26.1	15.6	20.8		32.2	14	12.2	1	1	0			0	0	0	0	0	0	0						26	6	0	1.6	
SANTA MARIA	73	1005.7	1014.3	21.1	10.6	15.8	-1.0	23.9	25+	7.2	3	0	0	11.7	82	T	- 1	T	0	0	0	0	3.6	WNW	11.6*	WNW	3	21	10	0	3.6	
STOCKTON	9	1010.9	1012.4	33.3	14.4	23.8		38.3	27+	11.1	3	21	0	9.4	45	0	0	0	0	0	0	0	3.2	WNW	9.4*	W	1	31	0	0	.2	
COLORADO																																
ALAMOSA	2297	775.4		28.9	2.4	19.2	0.9	31.7	25+	6.1	15	0	0			28	1	11	11	13	0	0						12	17	2	4.1	
COLORADO SPRINGS	1882	814.6	1013.2	32.2	16.1	24.2	3.1	37.2	22	17.8	15	20	0	8.9	44	34	- 26	14	12	22	0	2	4.5	N	13.9*	NNW	23	9	17	5	5.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	837.7	1011.0	32.8	14.4	23.8	0.8	37.2	25	11.1	29	25	0	8.9	44	14	- 25	11	6	8	0	0	4.2	S	14.8	W	14	8	19	4	4.7	75
GRAND JUNCTION	1478	858.4	1009.5	34.4	18.3	26.6	0.9	37.8	25+	14.4	13	26	0	3.3	27	24	9	19	4	7	0	0	3.0	SE	19.7	N	12	16	12	3	3.9	79
PUEBLO	1414	856.1	1010.1	35.6	17.8	26.6	1.9	39.4	22	13.9	15	30	0	10.0	41	6	- 40	3	6	13	0	0	4.9	SSE	21.0	N	11	15	13	3	3.8	78
CONNECTICUT																																
BRIDGEPORT	2	1014.2	1015.0	27.8	17.8	22.8	-0.4	36.1	2	10.6	9	7	0	17.2	74	133	37	66	9	5	0	0	4.8	WSW	16.1*	SSW	14	8	13	10	5.5	
HARTFORD	52	1008.0	1013.9	29.4	16.1	22.7	0.4	35.0	25+	7.8	9	10	0	16.7	72	99	7	35	9	7	0	0	3.0	S	11.6	W	19+	7	14	10	6.0	78
NEW HAVEN	2	1013.5		27.2	17.2	22.2	0.0	35.0	1	11.1	9	3	0			89	2	45	10	10	0	0	2.8		13.4	SW	2	8	14	9	5.5	74
DELAWARE																																
WILMINGTON	24	1011.4	1014.8	30.6	18.3	24.6	0.2	36.1	27+	12.2	10	11	0	16.1	63	42	- 66	25	7	4	0	0	2.5	WNW	21.5*	W	29	11	13	7	4.9	
DIST.OF COLUMBIA																																
WASHINGTON U	22			31.7	20.6	26.1		36.7	28+	15.0	10+	15	0			17		14	3													
WASH NATL AP	4	1010.8	1015.3	31.1	20.0	25.3	-0.3	35.6	27	13.3	10	13	0	16.1	58	50	- 56	17	4	2	0	0	3.6	S	22.4	WSW	19	11	12	8	4.9	76
FLORIDA																																
APALACHICOLA U	4	1015.2		30.6	23.9	27.2	-0.3	33.3	7+	20.0	23	3	0			349	147	137	12	14	0	0		W	13.0	E	25	6	16	9	6.1	
DAYTONA BEACH	9	1016.5	1018.3	31.7	22.8	27.0	0.3	34.4	20	18.9	12	11	0	22.8	82	175	4	46	13	16	0	0	3.6	SW	17.9*	WSW	9	6	10	15	6.8	
FORT MYERS	4	1017.2		33.9	23.9	28.9	1.0	35.0	28+	22.2	31	30	0			103	-128	53	13	19	0	0	3.7		14.3*	ESE	29	3	17	11	6.1	
JACKSONVILLE	7	1014.6	1017.4	32.2	22.2	27.4	-0.7	35.0	31	18.3	11	21	0	22.2	78	164	- 31	58	11	15	0	0	3.9	SW	17.9	SE	7	1	16	14	6.7	68
KEY WEST	2	1016.4	1017.5	32.2	26.1	29.3	0.8	34.4	9	22.8	12	22	0	23.3	70	41	- 64	22	13	11	0	0	5.4	ESE	15.6	SE	18	2	22	7	5.9	68
LAKELAND U	65			32.2	23.3	27.8	0.2	34.4	30+	20.0	21	25	0			201	- 10	77	16	22	0	0	3.0					0	20	11	7.1	59
MIAMI BEACH	3			31.7	26.1	29.1	1.1	36.1	8+	22.8	26	8	0			59	- 54	15	9		0	0	5.8	E	10.7	NW	8	3	23	5	5.4	70
MIAMI	2	1016.6	1017.9	32.2	24.4	28.4	0.8	35.0	7	22.2	5	16	0	22.8	73	45	-126	17	11	14	0	0	4.3	E	15.6*	WNW	8	1	22	8	6.1	
ORLANDO	32	1013.5	1018.1	33.9	22.8	28.3	0.8	36.7	30	20.0	12	26	0	22.2	76	97	-106	34	15	21	0	0	4.0	WSW	15.6*	W	22	2	16	13	6.8	
PENSACOLA U	4			31.1	23.9	27.4	-0.2	34.4	7+	19.4	24	9	0			251	59	107	13	13	0	0	3.4	WSW	11.6	NE	24					70
TALLAHASSEE	18	1014.9	1017.6	32.8	22.2	27.4	0.1	35.6	6	17.2	11	22	0	21.7	77	181	- 23	82	13	21	0	0	3.4	S	16.1*	SW	8	0	23	8	6.4	
TAMPA	6	1016.6	1018.2	32.2	23.3	27.6	0.1	35.0	27+	21.7	25+	13	0	22.2	77	206	- 13	72	16	20	0	0	5.0	W	25.9*	NW	10	2	19	10	6.5	70
WEST PALM BEACH	5	1017.4	1018.6	33.3	23.9	28.8	0.7	36.7	9	21.1	11	31	0	22.2	71	41	-128	11	8	13	0	0	3.8	ESE	19.7*	W	23	2	20	9	6.2	
GEORGIA																																
ATHENS	245	988.0	1016.6	30.6	19.4	25.1	-1.4	33.3	6+	15.0	12+	8	0	20.0	77	120	- 6	54	13	14	0	0	3.0	WSW	10.3*	WSW	29	9	14	8	5.6	
ATLANTA	306	976.0	1017.3	29.4	19.4	24.3	-1.7	32.2	6	15.6	11	1	0	20.0	82	206	86	70	16	11	0	0	2.6	W	15.2*	NW	6	12	7	12	5.5	72
AUGUSTA	44	1009.7	1016.4	32.2	20.6	26.3	-0.8	35.0	28	13.9	11	20	0	21.1	77	77	- 37	17	14	12	0	0	2.8	SW	10.7*	WNW	16	4	16	11	6.5	
COLUMBUS	117	1002.9		32.2	20.6	26.3	-0.9	34.4	7	16.1	11	19	0			81	- 68	27	13	11	0	0	2.9		15.6*	N	6	6	12	13	6.4	
MACON	109	1003.7	1017.2	32.8	21.1	26.7	-1.0	35.6	7	16.7	13	23	0	20.6	74	181	38	49	16	15	0	0	2.7	SW	17.0	NW	6	5	16	10	6.0	69
ROME	194	994.5		30.6	18.3	24.4	-1.7	33.3	6	11.7	11	7	0			160	36	49	18	18	0	0						7	13	11	6.3	
SAVANNAH	15	1014.3	1016.9	32.2	21.1	26.7	-0.7	35.0	20	17.2	12	19	0	21.1	77	202	34	43	14	18	0	0	3.6	WSW	13.4	NE	7	5	14	12	6.4	70
THOMASVILLE U	86			32.2	21.7	26.9	-0.9	35.6	6	17.8	11	21	0			191	18	28	14	12	0	0						8	12	11	5.9	
HAWAII																																
HILO	9	1014.9	1016.6	28.3	20.0	24.1	0.3	29.4	26+	17.8	18+	0	0	20.0	79	315	66	74	29	0	0	0	3.8	WSW	10.7	E	29	1	15	15	7.3	42
HONOLULU	2	1016.0	1016.4	30.6	23.3	27.1	1.1	31.7	23+	20.6	31	0	0	18.9	63	26	14	19	8	0	0	0	5.3	ENE	14.3	NE	25	8	20	3	4.8	73
KAHULUI	13	1013.3	1016.0	30.0	21.1	25.6		31.7	22+	18.9	31+	0	0	19.4	71	7		3	7	0	0	0	10.0	ENE	17.4*	ENE	6	14	15	2	3.8	81
LIHUE	35	1012.4	1017.9	29.4	22.8	26.1	0.8	30.6	28+	20.6	31+	0	0	20.0	72	41	- 8	9	19	0	0	0	5.7	NE	10.3	NE	17	0	23	8	6.2	65
IDAHO																																
BOISE	865	917.1	1011.1	31.7	13.3	22.3	-1.4	37.2	21+	7.8	11	16	0	3.9	33	T	- 5	T	0	2	0	0	3.4	NW	10.7	SE	1	27	4	0	.9	94
IDAHO FALLS 42NW R	1460			31.1	8.3	19.6	-1.0	36.1	21	3.9	28+	13	0			1	- 11	1	1		0	0	5.4	SW	15.6A	SW	10					
IDAHO FALLS 46W R	1504	847.1		30.0	8.9	19.3	-1.3	33.9	24+	3.9	28	8	0			T	- 7	T	0	0	0	0	3.5	WSW	11.6A	WSW	10					
LEWISTON	431	961.7		29.4	13.3	21.3	-1.9	35.0	19+	7.8	23	8	0			11	0	6	4	2	0	0						18	9	4	3.4	
POCATELLO	1355	862.1	1011.4	31.1	11.7	21.3	-1.2	35.6	24+	5.6	1	12	0	2.8	33	T	- 13	T	0	3	0	0	3.8	WSW	13.4	W	24+	25	5	1	1.9	97
ILLINOIS																																
CAIRO U	96	1002.5		31.7	21.7	26.8	-0.5	35.6	2	15.6	11	15	0			106	25	35	9	6	0	0	3.1	S#	15.6	N	14	11	14	6	4.9	75
CHICAGO O HARE	201	990.7	1015.1	28.3	16.1	22.3		35.0	1	7.2	10	2	0	14.4	61	104		50	7	5	0	0	3.7	SSE	13.0*	NNE	19	11	13	7	4.9	
CHICAGO MIDWAY	186	992.8	1015.3	28.9	18.9	23.9	-0.4	37.2	1	12.8	10	4	0	15.0	61	186	100	56	6	5	0	0	4.2	SW	18.8	E	21	10	14	7	4.9	68
MOLINE	177	993.1	1015.0	30.0	17.8	23.8	-0.4	37.2	1	10.6	9	8	0	17.8	72	223	140	137	11	6	0	0	3.5	E	26.4	NW	19	15	10	6	4.4	72
PEORIA	199	994.0	1016.0	30.0	17.2	23.5	-0.9	36.1	1	10.6	10+	6	0	16.7	68	90	1	50	8	6	0	0	3.7	S	18.3	NW	19	12	11	8	4.8	72
ROCKFORD	222	988.4	1015.2	29.4	17.2	23.2	-0.2	36.7	1	10.0	10+	3	0	16.1	66	131	26	77	10	7	0	0	3.7	SSE	15.6*	WNW	18	11	13	7	4.9	
SPRINGFIELD	179	991.9	1014.7	29.4	18.3	23.7	-1.3	35.6	2	10.6	10	4	0	18.3	72	177	88	68	10	7	0	0	3.5	S	11.2	NW	31+	14	10	7	4.2	81

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)								
	Elevation (ground)	Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1000.0	1015.8	31.7	18.3	24.8	-0.9	35.6	19	10.6	11	15	0	18.9	72	132	48	35	13	10	0	0	2.4	NW	13.4	W	1	11	13	7	5.0	79
FORT WAYNE	241	984.9	1015.7	29.4	16.1	22.8	-0.6	35.6	2	8.3	10	4	0	15.6	67	130	44	62	10	7	0	0	3.3	NW	18.8	NW	19	9	17	5	5.1	79
INDIANAPOLIS	242	986.3	1015.9	28.9	17.2	23.0	-1.0	33.9	2	10.0	10	4	0	17.8	74	118	29	59	12	7	0	0	2.8	SW	16.1*	NNE	20	8	18	5	4.9	72
SOUTH BEND	234	987.5	1015.3	27.8	16.7	22.1	-1.1	33.9	1	8.3	10	2	0	15.0	67	130	42	48	10	9	0	0	3.8	S	17.9*	NNW	19	7	19	5	5.1	
IOWA																																
BURLINGTON	212	990.1	1015.2	30.0	18.3	24.2	-0.6	36.7	1	11.1	4	7	0	17.8	71	157	71	55	10	5	0	0	3.6	SSE	14.8	N	1	14	11	6	4.5	80
DES MOINES	289	983.9	1014.7	30.0	18.9	24.4	-0.6	36.1	1	14.4	10	2	0	18.3	71	102	24	30	7	7	0	0	3.6	SSE	18.8	NW	16	12	15	4	4.5	72
DUBUQUE	325	989.6		28.3	16.7	22.5	-0.1	36.7	1	11.7	10	1	0			162	73	97	10	5	0	0			18.8*	S	18	13	10	8	4.9	
SIOUX CITY	334	972.9	1013.2	30.0	19.4	24.8	0.1	34.4	23	14.4	14	10	0	18.9	71	61	- 18	22	7	7	0	0	3.7	SE	22.4	SW	18	14	9	8	4.7	72
WATERLOO	265	983.6	1015.1	28.9	17.2	22.9	-0.6	35.6	1	12.2	4	6	0	18.3	77	222	125	110	10	6	0	0	3.5	ESE	24.1*	NE	19	12	9	10	5.0	
KANSAS																																
CONCORDIA	448	963.0	1011.8	33.3	20.6	26.8		38.3	23+	17.2	10	22	0	18.9	66	112		43	12	14	0	0	5.1	SSE	19.7	SW	14	15	10	6	4.3	66
DODGE CITY	791	925.4	1011.1	35.0	20.6	27.9	1.2	39.4	23	16.1	15	28	0	15.6	51	58	- 1	26	8	14	0	0	6.2	SSE	18.8	N	17	19	7	5	3.6	81
GOODLAND	1111	887.0	1010.4	35.6	17.8	26.4	1.7	40.0	31+	14.4	29+	27	0	13.9	51	82	14	33	9	11	0	0	6.1	SSE	23.2*	NE	29	20	10	1	3.1	
TOPEKA	267	978.1	1013.0	32.8	20.6	26.8	0.2	38.3	23	16.1	10+	20	0	19.4	66	80	- 12	71	6	8	0	0	4.9	S	24.1	N	31	11	12	8	5.2	75
WICHITA	403	964.7	1012.0	33.9	22.2	28.1	0.9	40.0	22	18.3	29	22	0	18.9	60	69	- 24	23	7	10	0	0	4.9	S	18.8	N	17	14	11	6	4.5	76
KENTUCKY																																
COVINGTON	265	984.3	1015.8	28.9	16.1	22.4	-2.3	32.8	19+	8.3	11	3	0	16.1	72	110	19	44	9	5	0	0	3.0	SSW	10.3*	WSW	28+	9	12	10	5.6	
LEXINGTON	298	981.2	1016.5	28.3	17.8	23.1	-2.1	31.1	19	11.7	10	0	0	17.2	72	182	81	54	11	9	0	0	3.0	S	9.4*	WSW	14+	8	17	6	5.4	
LOUISVILLE	144	996.8	1015.7	29.4	18.3	23.8	-1.3	32.8	19	11.7	11	1	0	18.9	76	186	101	43	11	8	0	0	2.6	S	11.6	W	28	10	14	7	5.2	64
LOUISIANA																																
ALEXANDRIA	28	1012.1	1016.4	33.3	21.1	27.2		37.2	22+	18.3	3	25	0	22.2	81	135		37	11	17	0	0	2.1	SW	14.3	ENE	4	3	18	10	6.3	
BATON ROUGE	20	1014.0	1016.9	33.3	22.8	27.9	0.2	35.0	22+	20.0	24	28	0	22.8	80	279	120	64	18	18	0	0	2.5	SW	13.0	W	1	5	10	16	6.8	
LAKE CHARLES	4	1015.1	1016.5	32.8	23.9	28.1	-0.1	34.4	23+	21.7	27+	24	0	23.3	80	134	- 51	64	9	19	0	0	3.2	SSW	11.6*	ENE	23	0	20	11	6.6	
NEW ORLEANS	1	1014.8	1016.9	32.2	22.8	27.3	0.1	33.9	22+	20.6	5	18	0	23.9	84	163	- 8	25	17	19	0	0	2.5	SW	13.4*	ENE	1	3	18	10	6.5	
NEW ORLEANS AUDUBON	2	1010.3		32.2	24.4	28.3		33.9	22+	22.2	5	21	0			151		44	18	20	0	0	1.3	W#	7.2	SW	8	2	22	7	6.6	51
SHREVEPORT	77	1006.8	1016.0	34.4	22.8	28.7	0.3	39.4	21	20.0	2	28	0	21.7	70	25	- 70	14	9	9	0	0	4.3	S	14.3	SSE	4	9	13	9	5.6	74
MAINE																																
CARIBOU	190	988.5	1011.3	25.6	13.9	19.7	1.7	33.9	26+	8.9	6+	4	0	15.6	78	93	- 10	27	12	8	0	0	4.2	WSW	17.0*	NW	2	3	15	13	6.8	
PORTLAND	19	1008.8	1012.9	27.2	13.9	20.5	0.4	34.4	28+	7.2	6	5	0	15.6	76	64	- 9	29	8	3	0	0	3.1	S	11.6	W	5+	6	12	13	6.1	66
MARYLAND																																
BALTIMORE	45	1010.3	1015.1	31.1	18.3	24.6	-0.3	36.1	27+	13.3	5	13	0	16.7	65	18	- 90	15	3	2	0	0	3.7	W	10.3	NW	3	16	11	4	4.0	81
BALTIMORE U	4			31.7	21.7	26.7	0.6	36.7	27	15.6	9	15	0			23	- 88	14	5													
FREDERICK	90			30.6	16.7	23.4	-0.8	35.0	28+	8.9	10	12	0			53	- 47	20	6		0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	989.8		27.8	16.1	22.2	0.6	36.1	26	9.4	9	10	0			59	- 24	18	9		0	0	5.1	SSW	19.2	SSW	14					65
BOSTON	5	1003.1	1013.2	28.9	18.9	23.7	0.6	36.7	2+	12.8	9	10	0	15.6	64	44	- 29	13	6	6	0	0	5.5	SSW	17.9	NW	3	7	14	10	5.8	68
NANTUCKET	13	1013.7	1014.4	23.3	16.7	19.9	0.2	30.0	19	12.2	10+	0	0	16.7	86	66	- 3	21	7	3	0	0	5.1	SW	12.1	NW	19	3	10	18	7.5	57
PITTSFIELD	357			26.7	13.3	19.8	-0.1	33.3	2	5.0	10	3	0			63	- 61	24	11		0	0										
WORCESTER	301	977.6	1013.9	26.1	16.1	21.1	0.1	32.8	27+	7.8	9	7	0	15.0	69	48	- 44	26	10	6	0	0	4.0	W	12.1*	NW	4	6	16	9	5.6	
MICHIGAN																																
ALPENA	210	989.7		27.2	11.7	19.6	0.2	35.6	1	3.9	9	3	0			54	- 19	28	7	5	0	0	3.0	SW	10.7	E	20	14	11	6	4.3	81
DETROIT	189	988.3	1015.0	29.4	17.8	23.6	0.3	34.4	18+	11.1	9	9	0	15.0	59	74	2	34	10	5	0	0	3.6	SW	13.9	NW	14	11	14	6	4.5	71
DETROIT M WAYNE CO	193	991.4	1015.3	29.4	14.4	21.9	-0.8	34.4	1	7.8	10+	8	0	16.1	71	49	- 20	19	7	2	0	0	2.7	WNW				11	15	5	4.6	
DETROIT WILLOW RUN	217	987.2	1015.1	29.4	16.1	22.8	-0.7	35.6	2	8.9	9	10	0	14.4	63	54	- 14	25	7	4	0	0	4.3	NW	13.9*	SSE	14	8	17	6	4.8	
ESCANABA U	181	992.3		24.4	15.0	19.7	0.2	29.4	20+	6.7	9	0	0			147	57	38	10	5	0	0	3.8		26.4	S	1	12	14	5	4.8	70
FLINT	233	988.5	1015.9	28.3	14.4	21.3	-0.7	36.1	1	5.0	4	6	0	14.4	66	35	- 39	17	8	4	0	0	3.5	SW	10.3*	SE	13	12	15	4	4.7	
GRAND RAPIDS	210	990.5	1015.4	28.9	16.1	22.3	0.1	35.6	1	7.2	10	5	0	13.9	62	87	17	38	7	4	0	0	3.9	WNW	13.9	S	19	12	12	7	4.6	81
LANSING	260	983.4	1015.0	28.3	14.4	21.5	-0.6	34.4	1	6.7	10+	3	0	13.9	61	88	23	43	7	6	0	0	4.5	S	21.9	W	28	13	9	9	4.8	70
MARQUETTE U	206	987.7		25.6	15.0	20.3	1.1	37.2	1	9.4	16+	4	0			64	- 17	28	6	3	0	0	3.2	SW#	9.8	SW	12	11	6	14	5.6	71
MUSKEGON	191	992.3	1015.2	27.2	15.6	21.2	-0.1	33.9	1	7.2	10	1	0	14.4	68	49	- 12	27	6	4	0	0	4.3	SSW	11.6*	NW	21	16	10	5	3.9	
SAULT STE MARIE	220	991.9	1014.5	24.4	12.8	18.7	0.9	33.9	1	6.1	8	1	0	12.8	71	57	- 6	21	7	1	0	0	3.9	WNW	11.2*	WNW	2	12	9	10	5.2	69
MINNESOTA																																
DULUTH	435	973.9	1015.0	25.6	12.8	19.4	0.5	32.2	21	4.4	3	1	0	14.4	75	46	- 44	16	12	5	0	0	3.8	WNW	16.5	W	19	6	12	13	6.4	58

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure: Station Ó	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: No. of days: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb	Mb.	C.	C.	C.	C.	C		C.				C.	%	Mm.	Mm	Mm			Mm	Mm	M.p.s		M.p.s							%
MINNESOTA																																
INTERNATIONAL FALLS	359	973.3	1014.0	26.1	13.3	19.7	1.0	32.2	23	3.9	3	1	0	15.0	74	127	38	45	8	10	0	0	2.7	S	9.8*	W	1	5	15	11	6.2	
MINNEAPOLIS	251	981.8	1014.6	29.4	16.7	23.1	0.3	33.9	22	11.7	15	6	0	16.1	70	39	- 44	19	8	5	0	0	4.1	SSE	12.5	SW	16	8	14	9	5.3	75
ROCHESTER	395	968.1	1015.4	27.2	16.1	21.5	-0.6	34.4	1	11.1	15+	1	0	16.7	77	100	- 7	37	12	8	0	0	4.4	S	13.0*	NW	18	11	10	10	5.2	
ST CLOUD	315	976.0		28.9	16.1	22.3	0.6	33.3	23+	11.1	15	4	0			52	- 31	15	7	6	0	0						7	15	9	5.7	
MISSISSIPPI																																
JACKSON	93	1004.6	1016.5	32.8	21.7	27.3	-0.3	36.1	4	16.7	10	22	0	21.7	77	160	42	105	13	15	0	0	2.9	SSE	13.0	SSE	18	5	15	11	6.1	
MERIDIAN	89	1003.5	1017.0	32.8	20.6	26.7	-0.8	35.0	20+	14.4	11+	23	0	21.7	78	90	- 68	22	11	14	0	0	2.3	S	10.3*	W	13	6	13	12	6.3	
VICKSBURG U	71	1007.2		31.7	21.7	26.7	-1.0	34.4	22+	19.4	11+	17	0			227	128	67	16	17	0	0	3.0		17.0	NW	22	4	22	5	6.0	71
MISSOURI																																
COLUMBIA	237	985.9	1013.8	31.7	20.0	25.8	-0.1	36.7	19	14.4	10	18	0	18.3	68	145	58	41	10	6	0	0	4.2	SSE	17.0	NE	2	13	11	7	4.6	76
KANSAS CITY	226	979.3	1013.2	32.8	22.2	27.6	0.4	37.8	19	16.7	10	21	0	19.4	62	112	31	94	6	5	0	0	4.1	SSW	10.7	N	31+	12	11	8	4.9	87
ST JOSEPH	247	979.6		32.8	21.1	26.9	0.6	38.3	5	14.4	10	21	0			103	21	78	7	6	0	0	3.6	SE	10.3*	NW	31+	14	12	5	4.4	
ST LOUIS	163	994.7	1015.2	31.1	19.4	25.2	-1.3	36.1	31+	12.2	10+	11	0	17.8	66	35	- 49	13	7	6	0	0	4.2	SSE	10.7	SE	2	14	13	4	4.4	74
ST LOUIS RFC	142			31.1	21.1	26.1	-0.9	36.1	19	15.6	9	13	0			54	- 30	24	8		0	0										
SPRINGFIELD	386	968.3	1014.9	30.6	20.6	25.3	-0.7	33.3	20+	14.4	10	11	0	20.6	76	73	- 25	28			0	0	3.9	SSE	21.9	N	22					
MONTANA																																
BILLINGS	1087	890.3	1011.8	30.0	13.9	21.9	-1.0	36.7	22+	10.0	11+	9	0	8.9	48	12	- 10	10	4	10	0	0	4.5	SW	14.8	NE	7	11	16	4	3.9	79
GLASGOW	694	938.0		29.4	15.0	22.2	0.7	39.4	22	8.9	1	5	0			42	8	29	6	9	0	0						14	15	2	3.9	
GREAT FALLS	1116	887.4	1011.9	29.4	11.7	20.5	-0.6	37.8	22	5.6	1	7	0	6.1	43	24	- 8	16	6	9	0	0	4.6	SW	19.2	W	14	17	11	3	3.3	81
HAVRE	787	924.3		30.0	12.2	21.3	0.2	40.0	22	4.4	1	10	0			54	22	21	9	9	0	0	4.0	W#	23.2	SW	24	21	8	2	3.0	81
HELENA	1187	873.0	1012.7	28.9	11.1	20.1	-0.1	36.7	21+	6.1	1	7	0	6.1	45	20	- 6	11	5	9	0	0	3.9	WNW	17.0	W	24+	20	8	3	3.1	77
KALISPELL	904	910.7		26.7	7.8	17.2	-1.5	35.0	7	1.7	23	4	0			24	- 2	8	7	8	0	0	2.5					18	8	5	3.5	
MILES CITY				32.2	16.1	24.2	0.1	38.9	24	9.4	1	17	0			30	- 4	18	10	15	0	0	3.8	SE	13.4*	W	5	15	12	5	3.8	
MISSOULA	972	901.3	1014.1	27.8	7.8	17.8	-1.6	34.4	7	2.8	16	6	0	7.8	57	28	7	16	5	7	0	0	3.2	NNW	13.0	NW	22	21	3	7	3.2	76
NEBRASKA																																
GRAND ISLAND	561	947.5	1012.3	32.2	18.3	25.4	-0.6	40.6	23	12.8	28	18	0	17.8	68	55	- 8	16	10	12	0	0	4.8	SSE	17.4*	NNW	16	16	8	7	4.4	
LINCOLN U	351			32.2	21.1	26.5	-0.2	36.7	23+	16.7	14	18	0			72	- 11	33	8	4	0	0	4.8	S#	15.6	SE	30	10	11	10	5.1	70
NORFOLK	471	958.0		30.6	18.9	24.8	-0.2	36.7	18	15.0	14	10	0			87	10	22	13	14	0	0						13	10	8	4.6	
NORTH PLATTE	847	914.0	1010.5	32.8	17.8	25.3	0.8	38.3	23+	10.6	28	22	0	16.1	62	41	- 23	9	11	13	0	0	4.8	SE	21.9	SW	20	16	11	4	3.7	77
OMAHA	298	974.0	1013.0	31.7	20.6	26.1	0.3	38.3	1	15.6	14	20	0	18.3	65	57	- 28	22	5	8	0	0	4.1	SE	15.6	NW	17	12	12	7	4.7	74
OMAHA N OMAHA AP	403	966.0		30.0	19.4	24.7	0.2	35.6	1	15.0	14	9	0			34	- 57	21	8	8	0	0						11	12	8	5.4	
SCOTTSBLUFF	1204	878.1	1010.8	33.3	16.7	24.9	1.2	38.3	25	13.3	31+	23	0	13.3	54	41	4	28	5	11	0	0	4.7	ESE	17.9*	NW	7	14	13	4	4.0	
VALENTINE	789	922.3		32.8	17.2	25.1	0.9	39.4	23	11.1	20	19	0			91	32	27	14	17	0	0	4.8	S#	18.8	NW	29	19	10	2	3.5	78
NEVADA																																
ELKO	1547	844.3	1011.8	31.1	5.6	18.5	-2.4	34.4	23+	2.8	27+	14	0	- 1.7	28	0	- 10	0	0	0	0	0	3.0	SW	9.8*	SSW	6	30	1	0	.7	
ELY	1907	809.6	1009.6	30.6	7.8	19.2	-0.6	32.8	24+	2.8	1	8	0	- 3.3	22	T	- 16	T	1	0	0	0	4.6	S	14.3	S	6	24	7	0	1.7	99
LAS VEGAS	659	943.5	1007.8	40.6	23.9	32.4	0.1	43.3	23+	18.3	7+	31	0	- 3.9	11	0	- 13	0	0	1	0	0	5.9	SW	13.0*	SW	17+	25	6	0	1.5	96
RENO	1342	865.8	1013.5	31.1	5.6	18.4	-1.7	35.0	13	1.7	4+	12	0	2.2	36	T	- 7	T	0	0	0	0	2.9	WNW	13.4	NW	13	29	2	0	.5	98
WINNEMUCCA	1310	866.8		31.7	7.8	19.7	-1.9	35.0	21	4.4	1	14	0			0	- 7	0	0	0	0	0	3.7	W	13.0	W	7	31	0	0	.5	98
NEW HAMPSHIRE																																
CONCORD	103	1002.4	1013.1	29.4	15.0	22.3	1.4	37.2	26	6.1	10	9	0	14.4	66	75	- 12	61	8	5	0	0	2.5	NW	11.2	NW	4	6	15	10	5.7	66
MT WASHINGTON ORS	1909	808.3		12.8	6.7	9.7	0.2	21.1	2	- 0.6	4	0	3			176	6	41	13	4	0	0	10.3	W#	39.8Y	W	4	1	13	17	7.7	31
NEW JERSEY																																
ATLANTIC CITY	18	1012.9	1015.1	30.0	18.9	24.5	0.6	36.7	19	12.8	9	10	0	17.2	68	66	- 28	37	5	4	0	0	4.8	S	14.3*	SSW	28	10	13	8	5.3	68
ATLANTIC CITY U	3			27.8	20.6	24.3	0.8	34.4	27	15.6	9+	5	0			93	- 5	38	6		0	0	6.3		17.0*	WSW	20					
NEWARK	3	1013.2	1014.6	30.6	19.4	25.0	0.4	37.8	1	13.3	9	11	0	16.1	60	57	- 36	27	8	6	0	0	4.2	SSW	13.9*	NW	3	9	14	8	5.2	
TRENTON U	17	1007.0		30.0	18.9	24.3	-0.2	36.1	1	11.7	9	9	0			100	- 6	52	8	9	0	0	3.4	NW#	13.0	SE	28	11	10	10	5.3	71
NEW MEXICO																																
ALBUQUERQUE	1618	848.8	1010.1	35.0	20.0	27.4	1.6	39.4	25+	16.7	17	29	0	8.9	36	36	6	11	12	13	0	0	4.3	N	19.2	SE	7	15	14	2	4.0	73
CLAYTON	1515	846.7		33.3	17.2	25.1	1.5	37.2	23	13.9	14	23	0			30	- 29	18	8	17	0	0						13	18	0	3.9	
RATON	1944	808.0		32.2	13.3	22.7	1.7	35.6	23	11.1	26+	15	0			8	- 53	2	11	22	0	0						5	22	4	5.3	
ROSWELL	1103	892.1		36.7	18.9	27.7	2.7	41.7	17	15.6	1	29	0			5	- 40	2	6	7	0	0	4.3		13.4	NW	26	18	8	5	3.9	80
SILVER CITY	1638	836.8		33.3	17.2	25.2		36.7	25+	14.4	29+	22	0			82		25	17	20	0	0						8	16	7	5.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature								No. of days		Average dew point	Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower			Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers) Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
ALBANY	84	1010.0	1013.9	28.9	15.6	22.2	-0.1	36.1	25+	5.0	9	11	0	15.0	66	30	- 58	11	10	7	0	0	3.0	SSE	14.3	W	3	6	14	11	6.2	66
BINGHAMTON	485	956.4	1014.5	25.0	13.9	19.4	-1.3	31.1	2	3.9	9	0	0	15.0	76	64	- 30	23	9	7	0	0	3.4	WSW	13.0	NW	5	7	12	12	6.0	64
BUFFALO	215	988.1	1015.2	27.2	15.6	21.2	0.2	33.9	1	8.3	9+	2	0	14.4	68	163	98	86	5	5	0	0	4.2	WSW	13.4	SW	7	11	10	10	5.1	71
NEW YORK U	40	1003.5		30.0	19.4	24.7	-0.2	36.7	27+	12.2	9	11	0			56	- 38	18	11	6	0	0	3.1	W	13.4	W	3	12	14	5	4.5	66
NEW YORK LA GUARDIA	6	1012.3	1014.2	28.9	20.0	24.6	-0.3	36.1	1	13.9	9	8	0	16.1	62	45	- 49	21	8	6	0	0	4.7	S	13.4	NW	3	6	15	10	5.5	
ROCHESTER	166	995.8	1014.8	27.8	15.0	21.6	-0.4	35.0	2	5.6	9	6	0	14.4	68	69	- 3	21	9	7	0	0	4.3	WSW	14.8	SW	29	11	11	9	5.3	69
SCHENECTADY	66			28.3	16.1	22.4	-0.7	35.6	26+	7.2	9	9	0			44	- 44	32	11	0								22	7	2	2.8	
SYRACUSE	127	992.2	1013.8	28.3	15.6	22.1	-0.3	35.6	2	8.9	9	9	0	14.4	66	31	- 48	13	8	6	0	0	3.4	W	12.1	S	14	8	13	10	5.3	74
NORTH CAROLINA																																
ASHEVILLE U	671	939.1		27.8	16.1	21.9	-1.7	32.2	27	9.4	11	1	0			74	- 35	24	14	8	0	0	2.7	N#	11.6	NW	6	7	11	13	6.0	51
CAPE HATTERAS R	2	1014.8	1015.5	28.3	21.1	24.7	-0.9	31.1	20+	12.8	5	0	0	21.1	81	73	- 83	28	10	13	0	0	4.6	SW	10.3*	WSW	15	5	8	18	7.1	61
CHARLOTTE	224	988.7	1016.4	31.7	19.4	25.5	-0.4	35.6	28	12.8	11	16	0	18.9	70	56	- 68	21	9	9	0	0	2.8	SW	11.6	SW	16	6	14	11	5.9	73
GREENSBORO	272	985.5	1016.5	29.4	17.2	23.3	-1.8	33.9	20	10.0	11	5	0	17.2	74	89	- 33	45			0	0	2.9	SW	12.1	W	23					
RALEIGH	132	1002.1	1015.7	30.6	18.3	24.4	-1.1	36.1	28	9.4	11	13	0	18.3	73	89	- 50	28	11	10	0	0	2.8	SW	11.6*	NW	2	5	16	10	6.1	58
WILMINGTON	9	1013.6	1016.3	30.6	20.6	25.6	-1.1	34.4	20	15.6	11	14	0	20.6	78	298	103	93	15	16	0	0	2.7	SW	18.8	N	28	3	17	11	6.5	63
WINSTON SALEM	295	981.6	1016.4	29.4	18.3	23.7	-1.8	33.9	28+	12.2	11	7	0	17.8	73	106	- 11	38	14	9	0	0	2.9	WSW	9.4*	WSW	29	5	14	12	6.1	
NORTH DAKOTA																																
BISMARCK	502	953.2	1012.5	29.4	15.0	22.2	-0.2	38.3	25	10.6	14+	8	0	13.9	63	70	14	31	10	11	0	0	4.2	SSE	20.1	NE	31+	15	9	7	4.8	79
FARGO	274	979.6	1013.2	30.0	16.1	23.1	1.2	37.2	25	8.9	7	8	0	16.1	67	17	- 57	6	10	5	0	0	4.3	SSE	13.0	S	10	8	14	9	5.3	75
WILLISTON	579	945.2		30.0	15.0	22.5	0.7	37.8	22	9.4	31	9	0			157	110	128	8	8	0	0	4.3	SE#	28.2	NW	5	11	13	7	4.9	76
OHIO																																
AKRON	369	978.3	1016.1	28.3	15.0	21.8	-0.2	33.3	1	6.1	9	5	0	12.8	59	50	- 46	19	10	8	0	0	3.0	WSW	10.3*	NW	20	11	12	8	4.9	
CINCINNATI OBS	232			30.0	18.3	24.1	-0.8	33.3	2	12.8	10	6	0			101	10	42	9	5	0	0	2.1	S#	7.6	N	22+					73
CINCINNATI U	169	993.1		30.6	19.4	24.9		33.9	19+	14.4	11	8	0			104		43	9	5												
CLEVELAND	237	988.1	1015.6	27.8	15.6	21.8	0.2	33.9	2	6.7	9+	5	0	15.0	66	48	- 36	23	10	5	0	0	4.2	S	13.0	S	22	11	13	7	4.9	72
COLUMBUS	247	986.6	1016.2	30.0	16.7	23.3	-0.5	34.4	18	7.2	10	10	0	16.1	66	74	- 26	28	8	7	0	0	3.4	SW	11.6	W	27	7	17	7	5.5	70
COLUMBUS U	221			29.4	18.3	23.9	-0.7	33.9	1	11.7	10	7	0			58	- 35	25	8	4	0	0										
DAYTON	304	983.7	1016.0	28.3	16.7	22.4	-1.6	31.7	18+	8.9	10	0	0	15.0	67	80	- 10	34	10	8	0	0	3.9	SSW	15.2	NW	19	6	17	8	5.2	76
MANSFIELD	395			27.8	15.6	21.8	-0.3	32.8	2	7.2	10	2	0			78	- 10	20	11	9	0	0						7	19	5	5.4	
SANDUSKY U	185	994.1		28.9	18.3	23.8	-0.1	36.1	2	11.1	9	6	0			66	- 24	28	13	8	0	0	3.5	SW#	18.8	NW	14	17	12	2	3.3	85
TOLEDO	206	990.2	1015.2	29.4	15.6	22.6	0.0	35.6	2	7.2	10+	9	0	15.0	66	50	- 15	25	9	8	0	0	3.2	SW	12.1	W	14	9	17	5	4.9	79
YOUNGSTOWN	359	973.8	1016.0	27.2	14.4	20.8	-0.8	32.2	17+	6.7	9	3	0	13.9	66	53	- 57	18	7	5	0	0	3.7	SW	12.1*	WSW	19	12	11	8	5.2	
OKLAHOMA																																
OKLAHOMA CITY	390	970.1	1012.4	35.0	21.7	28.4	1.2	38.9	25+	18.9	15	26	0	19.4	63	157	97	54	7	8	0	0	5.5	SSE	18.3	S	29	13	10	8	4.7	80
TULSA	206	989.5	1013.4	35.6	23.3	29.4	1.6	40.0	22+	18.3	11	24	0	21.1	65	269	195	192	9	6	0	0	5.1	SSE	11.6	S	29+	11	13	7	5.0	67
OREGON																																
ASTORIA	2	1017.6	1018.2	19.4	11.7	15.7	0.1	22.8	23	6.7	3+	0	0	11.7	79	39	6	22	11	0	0	0	4.0	NNW	10.3*	SSW	21	2	8	21	8.2	
BURNS U	1265	872.8		26.7	8.3	17.4	-3.4	31.1	19+	3.9	8	0	0			7	- 2	7	1	4	0	0						24	3	4	2.3	
EUGENE	110	1004.2		24.4	10.0	17.2	-2.1	31.7	27	6.7	1	0	0			8	1	5	3	1	0	0	3.0		10.7*	W	6	9	8	14	5.7	
MEACHAM	1234			21.7	7.8	14.8	-2.7	28.9	19	4.4	23	0	0			6	- 7	3	5	0	0	0						16	8	7	3.7	
MEDFORD	396	968.6	1015.8	28.3	10.0	19.3	-2.9	36.7	27	5.6	8	6	0	8.9	55	4	- 2	3	3	0	0	0	2.7	WNW	8.9*	WNW	23+	22	5	4	2.7	
PENDLETON	452	961.4	1014.4	28.3	12.8	20.3	-2.8	34.4	19	7.8	23	4	0	5.6	39	8	3	6	2	2	0	0	4.4	W	15.6*	W	31	21	5	5	2.9	
PORTLAND	6	1011.8	1017.3	22.2	12.2	17.3	-2.3	28.3	27	7.8	23	0	0	11.1	70	30	19	9	10	1	0	0	3.6	NW	10.7	SW	24	1	12	18	7.5	41
PORTLAND U	9			23.3	13.3	18.4	-1.9	28.9	27+	11.1	19	0	0			36	26	12	9	0												
ROSEBURG	154	998.6		26.1	10.0	17.9	-2.1	33.9	27	6.7	23+	1	0			5	- 1	3	4	0	0	0	2.5	N#	10.3	N	25	10	11	10	5.2	66
SALEM	59	1010.6	1018.0	23.9	9.4	16.6	-2.9	31.7	27	5.6	1	0	0	11.1	72	23	14	10	8	1	0	0	2.9	NW	9.4*	WNW	3	5	13	13	6.6	
SEXTON SUMMIT R	1169	885.1		20.0	7.8	13.8	-3.8	28.3	27	3.9	1	0	0			9	1	8	4	0	0	0	5.2	NNW				18	7	6	3.4	
PACIFIC AREA																																
CANTON ISLAND	3	1009.0	1009.2	31.7	25.6	28.6	-0.1	32.2	31+	23.3	5	10	0	23.3	75	48	- 18	13	11	0	0	0	4.7	E	11.2*	E	14	10	8	13	6.1	
ENIWETOK	5	1009.1		31.1	25.6	28.3	0.1	32.8	15	22.8	4	3	0			215	51	38	26	5	0	0	4.6									
TAGUAC GUAM R	110															0		0			0	0	2.7	E#	15.2	E	11					
JOHNSTON	2	1013.0	1013.6	27.8	25.6	26.8	-0.4	28.9	26	23.9	20+	0	0	23.3	82	30	- 3	8	20	0	0	0	6.8	E	13.9	SE	20	2	23	6	5.8	62
KOROR R	29	1006.6	1009.4	30.6	23.9	27.3	0.2	32.2	27	22.2	20	1	0	24.4	88	284	-101	62	21	2	0	0	2.7	SW	9.4	SW	3	0	1	30	9.7	61
KWAJALEIN		1009.7	1009.8	30.6	25.0	27.6	0.0	32.8	8	22.8	13	1	0	23.9	83	249	23	69	24	4	0	0	4.0	ENE	13.0	ESE	28+	2	5	24	8.2	
PONAPE R	37	1004.8	1009.3	31.1	22.8	26.8	0.3	32.8	26	21.7	1	6	0	23.9	87	349	- 63	46	26	3	0	0	1.3	SE	6.7	N	17	0	3	28	8.9	55
TRUK MOEN ISLAND	2	1009.4	1009.5	30.6	23.9	27.1	0.2	31.7	31+	22.8	14+	0	0	23.9	84	356	43	69	23	2	0	0	2.1	SW	13.4	SW	15	1	7	23	8.5	47
WAKE	3	1012.7	1012.8	31.1	25.6	28.2	0.4	32.2	12	22.2	15	1	0	23.3	75	35	- 82	18	8	0	0	0	4.1	ENE	9.4*	SE	22+	6	10	15	7.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days								No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station O	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s							%
PACIFIC AREA																																
YAP R	16	1006.7	1008.2	30.6	23.9	27.2	-0.2	32.2	27+	22.2	15	2	0	24.4	88	343	- 7	67	27	1	0	0	2.6	SW	10.3	S	24	0	0	31	10.0	55
PENNSYLVANIA																																
ALLENTOWN	115	1000.9	1015.0	30.0	16.7	23.4	0.0	36.1	1	8.9	9	11	0	15.6	65	63	- 59	28	11	8	0	0	3.4	WNW	20.6*	N	20	10	17	4	4.7	
ERIE	223	989.2	1015.1	26.7	16.7	21.6	-0.2	34.4	2	6.7	9	1	0	15.0	66	69	- 24	29	5	4	0	0	4.9	S	13.4*	SSE	14	17	6	8	4.3	
HARRISBURG	102	1001.4	1015.1	31.1	17.8	24.7	0.4	36.7	28+	11.7	9	13	0	16.1	62	50	- 39	26	7	7	0	0	3.7	W	15.2	W	28	10	11	10	5.3	80
PHILADELPHIA	2	1010.4	1014.7	31.1	17.8	24.4	0.2	36.1	1	11.7	10+	11	0	17.2	67	80	- 26	23	8	5	0	0	3.4	WSW	15.6	SW	29	7	14	10	5.5	66
PITTSBURGH	347	985.5	1016.0	28.3	15.0	21.6	-0.7	33.3	17	5.6	9	6	0	14.4	66	88	- 11	27	10	8	0	0	3.2	WSW	10.7*	NNE	10	5	15	11	6.1	73
PITTSBURGH U	228			28.9	17.2	23.3	-1.1	35.0	17	10.6	10+	7	0			63	- 29	22	8												68
READING U	81	1002.6		30.6	18.9	24.6	-0.3	36.7	1	12.8	9	11	0			90	- 18	39	9	8	0	0	3.7	NW#	20.6	W	28	10	17	4	5.0	68
SCRANTON	287	981.2	1014.9	28.3	16.1	21.9	0.1	33.3	2+	7.8	9	6	0	15.0	70	102	- 19	40	11	11	0	0	3.0	ESE	11.2	NW	5	9	11	11	5.8	74
WILLIAMSPORT	161	996.5	1015.3	29.4	15.6	22.3	-0.8	35.0	26+	6.1	9	8	0	15.6	70	79	- 27	17	12	12	0	0	3.1	W	15.6*	W	2	7	16	8	5.8	
RHODE ISLAND																																
BLOCK ISLAND	34	1009.3		24.4	17.2	20.8	-0.1	31.1	27	12.8	9	0	0			80	11	56	8	5	0	0						3	15	13	6.4	
PROVIDENCE	17	1007.5	1013.4	27.8	17.8	22.7	0.4	35.0	26	11.7	6	9	0	16.1	70	85	11	33	8	6	0	0	4.4	SW	11.6*	NW	4	8	13	10	5.7	64
SOUTH CAROLINA																																
CHARLESTON	12	1014.6	1016.6	31.7	21.1	26.6	-0.1	35.0	27+	16.7	12+	15	0	20.6	75	202	6	99	12	14	0	0	3.3	SW	16.1Y	NW	1	9	12	10	5.8	69
CHARLESTON U	3			30.6	23.3	26.8	-0.7	34.4	20	19.4	11+	8	0			157	- 40	46	14		0	0			15.2	SE	28					
COLUMBIA	66	1003.8	1016.3	32.8	20.6	26.6	-0.9	35.6	28+	14.4	11	23	0	19.4	70	63	- 92	17	8	6	0	0	3.1	SW	13.0*	NW	20	7	17	7	5.5	71
FLORENCE	45	1010.4	1016.0	32.2	20.0	26.3	-0.8	36.7	20	13.9	11	20	0	20.0	74	97	- 61	51	11	12	0	0	3.4	SW	11.6*	WSW	30	6	17	8	5.8	
GNVLE SPARTANBURG	292	980.0	1016.4	30.6	20.0	25.3	-1.3	33.3	3	14.4	11	9	0	18.9	73	62	- 56	18	9	9	0	0	3.0	WSW	13.9	W	20	7	18	6	5.8	64
SOUTH DAKOTA																																
HURON	391	966.2	1012.2	31.1	17.8	24.4	0.3	36.1	23	11.7	2	11	0	17.2	68	112	66	42	13	17	0	0	4.9	ESE	16.1	NE	7	11	12	8	4.8	70
RAPID CITY	965	900.7	1012.1	31.1	15.6	23.6	0.3	38.3	25	11.7	28+	14	0	13.9	57	52	6	14	12	14	0	0	4.0	NNW	17.0	NW	29	14	14	3	4.0	73
SIOUX FALLS	433	962.7	1013.2	30.6	18.3	24.3	0.8	36.7	22	14.4	14+	10	0	17.2	69	164	92	68	10	14	0	0	5.1	ESE	14.3*	N	29	8	15	8	5.5	
TENNESSEE																																
BRISTOL	459	963.2	1017.0	27.2	16.1	21.7	-2.4	31.1	27	8.9	10	0	0	16.7	78	83	- 58	22	14	5	0	0	1.8	WSW	7.6*	WNW	1	5	13	13	6.5	
CHATTANOOGA	204	989.8	1017.0	30.6	19.4	24.8	-1.4	33.3	7+	13.3	11	6	0	20.0	80	275	145	53	14	14	0	0	2.8	S	17.0	N	6	8	11	12	6.1	58
KNOXVILLE	290	982.3	1017.4	28.3	17.8	23.1	-2.9	31.1	27+	12.2	11+	0	0	17.8	78	125	3	45	18	10	0	0	2.7	SSW	13.4	W	28	4	14	13	6.6	50
MEMPHIS	80	1001.4	1015.8	31.7	22.2	26.7	-0.9	35.0	5+	15.0	11	13	0	21.7	77	111	21	30	10	11	0	0	3.5	S	17.0	N	17	9	14	8	5.5	74
MEMPHIS U	83			31.1	22.8	26.9	-0.7	35.6	5	17.8	11+	13	0			98	11	37	11	0												
NASHVILLE	176	996.2	1015.9	31.1	19.4	25.3	-1.4	33.3	19+	13.3	11+	13	0	19.4	75	135	41	49	11	10	0	0	3.2	S	23.2	NW	7	10	13	8	5.4	66
OAK RIDGE	276	985.8		28.9	17.8	23.2	-2.2	32.8	27+	11.1	10	4	0			191	40	60	16	11	0	0	2.5		21.9Y		28	8	12	11	6.0	
TEXAS																																
ABILENE	536	952.0	1012.0	36.7	23.3	30.1	1.6	39.4	25+	19.4	2	31	0	16.7	48	7	- 51	5	2	2	0	0	4.2	SSE	13.0	NE	9	16	8	7	4.1	90
AMARILLO	1099	888.6	1010.6	34.4	20.0	27.4	1.2	37.8	23	17.2	28	29	0	14.4	49	52	- 8	22	8	7	0	0	6.8	S	24.6	NW	12	16	15	0	3.6	82
AUSTIN	182	992.9	1014.4	36.7	23.9	30.2	1.1	39.4	24	20.0	1	30	0	20.6	61	15	- 41	8	2	3	0	0	4.2	S	13.0	SE	1	10	13	8	5.0	72
BROWNSVILLE	5	1011.8	1014.3	33.3	25.0	29.0	0.1	34.4	30+	21.7	1	27	0	23.3	75	19	- 23	14	4	2	0	0	6.0	SSE	13.0	SE	13	8	18	5	5.2	61
CORPUS CHRISTI	13	1013.7	1014.8	33.9	25.0	29.2	0.3	35.6	25+	21.1	2	28	0	22.8	71	12	- 46	9	2	0	0	0	5.5	SSE	14.8	SE	1	7	18	6	5.1	80
DALLAS	147	995.3	1013.4	36.7	25.6	30.9	1.5	39.4	24+	21.7	1	29	0	20.6	57	43	- 6	41	3	2	0	0	5.5	S	16.1	S	1	14	11	6	4.3	81
DEL RIO	313	978.4		36.7	23.9	30.3		38.9	24+	20.0	2	29	0			2		2	1	0	0	0	5.3					11	13	7	5.0	
EL PASO	1194	884.8	1008.7	36.1	22.8	29.4	1.9	41.1	15	18.3	4	28	0	12.8	39	13	- 20	7	7	8	0	0	2.9	SSE	18.8	E	7	16	9	6	4.1	85
FORT WORTH	166	993.0	1013.3	37.2	24.4	30.8	1.1	40.6	22	21.1	3+	31	0	19.4	54	58	13	55	3	5	0	0	4.7	SSE	14.8*	SE	1	17	8	6	4.2	
GALVESTON U	2			30.6	26.7	28.7	0.3	31.7	24	21.1	26	0	0			49	- 72	35	4		0	0	4.6		13.4	SW	26					83
GALVESTON	2	1015.6	1016.4	31.7	26.7	29.2	0.5	32.8	24+	19.4	26	16	0	23.3	71	52	- 72	42	5	9	0	0	4.3	S				10	13	8	5.2	
HOUSTON U	12			33.9	25.6	29.7	0.8	35.6	21	23.3	3+	28	0			20	-111	16	6		0	0										
HOUSTON	15	1012.8	1015.4	34.4	23.9	29.1	0.2	36.7	23	22.2	4+	28	0	23.3	77	53	- 56	32	6	9	0	0	3.7	SSE	13.0*	S	24	2	19	10	6.1	82
LAREDO	152	997.4	1012.6	37.2	24.4	31.1	0.2	40.0	12	22.2	3+	29	0	20.0	57	6	- 29	4	2	0	0	0	5.6	ESE	12.5*	SSE	1	17	11	3	4.2	
LUBBOCK	988	902.9	1011.5	35.0	20.6	27.7	1.3	37.8	23	16.1	28	27	0	16.1	52	9	- 42	5	5	6	0	0	5.7	SSE	13.0*	ESE	27	15	13	3	3.6	
MIDLAND	870	914.2	1010.5	36.1	21.1	28.6	0.3	39.4	23	17.8	2	29	0	15.6	50	30	- 18	24	5	6	0	0	5.1	SSE	15.6*	SE	13	16	9	6	3.9	
PORT ARTHUR	5	1014.3	1015.7	35.0	23.9	29.2	1.5	37.8	23	21.1	26	30	0	23.9	77	114	- 38	76	9	16	0	0	3.4	S	29.5	SW	26	0	21	10	6.5	71
SAN ANGELO	580	946.0	1011.3	37.8	23.9	30.6	1.3	40.0	24+	18.9	2	31	0	16.1	45	T	- 36	T	0	0	0	0	3.8	SSE	10.7*	SSE	27	18	10	3	3.4	
SAN ANTONIO	241	989.5	1014.0	35.6	23.9	29.7	0.8	37.8	24	20.6	3+	28	0	20.6	63	1	- 52	1	1	0	0	0	4.2	SSE	11.6	SE	24	10	17	4	4.5	78
VICTORIA	32	1010.5		34.4	23.9	29.1	0.7	36.7	21	21.7	24+	29	0			38	- 54	14	6	6	0	0	4.0		44.3Y		24	2	21	8	5.7	
WACO	152	993.5	1014.0	37.2	24.4	30.8	1.2	39.4	24+	21.1	3+	31	0	19.4	55	T	- 51	T	0	2	0	0	6.6	SSE	15.6*	SSE	1	18	8	5	3.9	
WICHITA FALLS	303	976.0	1011.9	37.8	23.3	30.3	0.8	41.1	4	20.0	26	31	0	18.9	53	113	63	76	7	8	0	0	5.1	S	15.6*	NE	13	15	11	5	4.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

JULY 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							
UTAH																															
MILFORD	1533	843.9		35.0	12.2	23.5	0.3	37.2	24	5.6	1	30	0		1	- 17	1	1	2	0	0						20	6	5	2.8	
SALT LAKE CITY	1286	866.3	1010.3	35.0	16.1	25.4	0.8	38.9	24	6.1	1	27	0	4.4	29	T	- 15	T	0	2	0	0	5.1	SE	14.3	S	9	18	6	7	3.5	84
WENDOVER	1291	868.5		33.3	18.9	26.0	-0.3	37.8	24	15.6	27+	21	0			0	- 8	0	0	0	0	0						29	2	0	.9	
VERMONT																																
BURLINGTON	101	998.1	1012.5	27.8	14.4	21.3	-0.1	36.1	29+	7.2	9	8	0	14.4	67	71	- 27	29	10	7	0	0	3.1	S	12.1	SW	14	7	14	10	6.0	66
VIRGINIA																																
LYNCHBURG	289	990.9		30.6	17.2	23.8	-0.8	36.1	28	10.0	11	10	0			44	- 62	22	9	7	0	0	2.5		16.5	NE	28	5	17	9	5.8	61
NORFOLK	8	1014.3	1015.7	30.0	20.0	25.0	-1.0	36.1	20+	15.0	13+	12	0	18.9	71	51	- 99	23	8	4	0	0	4.0	SSW	13.0	SW	18	7	17	7	5.7	64
RICHMOND	49	1009.3	1015.4	31.1	17.8	24.5	-1.1	35.6	27+	11.1	5	14	0	17.8	70	13	-129	11	3	5	0	0	3.3	S	8.9	SE	28	6	18	7	5.6	62
ROANOKE	358	974.9	1016.4	30.6	17.2	23.9	-0.9	35.0	1	11.1	11+	7	0	15.6	64	68	- 40	22	12	11	0	0	3.5	WSW	13.0*	SW	27	5	17	9	5.9	
WASHINGTON																																
OLYMPIA	58	1011.0	1018.1	23.3	10.0	16.7	-1.1	27.2	18	3.9	23	0	0	10.6	71	38	18	14	7	0	0	0	3.0	SSW	10.3*	SW	22	3	9	19	7.6	
SEATTLE TACOMA	122	1003.6	1017.5	21.7	12.2	16.9	-0.8	25.6	27	8.3	23	0	0	10.6	70	30	9	14	7	0	0	0	3.7	SW	9.4*	SSW	4	4	11	16	7.1	
SEATTLE U	4			21.7	13.3	17.6	-1.1	25.0	27+	11.1	23	0	0			22	6	10	8	0	0	0			12.1	SW	22					64
SPOKANE	718	945.3	1013.1	26.7	11.7	19.3	-1.6	32.2	6	6.7	23	1	0	5.6	43	10	1	8	4	1	0	0	4.0	SW	15.2	SW	24	16	7	8	4.1	76
STAMPEDE PASS R	1206	881.0		15.0	6.1	10.5	-2.9	22.2	3	2.8	23+	0	0			75	38	18	12	0	0	0						4	8	19	7.4	
TATOOSH ISLAND	31	1015.2	1018.1	16.1	11.7	13.9	0.8	18.3	7+	10.0	21	0	0	11.7	88	119	59	33	12	0	0	0	4.9	SW	17.9	S	21	1	5	25	8.6	32
WALLA WALLA U	289			28.3	15.0	21.6	-2.9	34.4	19	11.1	23	3	0			12	7	9	4	3	0	0										
YAKIMA	323	975.3	1013.7	27.8	11.1	19.5	-2.2	33.3	27	3.9	23	2	0	7.2	46	18	14	17	2	2	0	0	3.6	W	12.5*	SSW	4	14	10	7	4.4	
SWAN ISLAND	9	1012.4		30.0	24.4	27.2	-0.8	31.1	31+	21.7	20+	0	0																			
WEST INDIES																128	- 31	27	22	2	0	0	4.6	ENE	12.1	E	31	4	15	12	6.3	67
SAN JUAN P.R.	2	1014.1	1017.0	31.1	23.9	27.4	0.5	32.2	4	22.2	8	1	0	22.8	79	235	129	79	16	10	0	0						3	11	17	7.3	
WEST VIRGINIA																																
BECKLEY	763	930.4	1017.2	25.0	13.9	19.3		30.0	18	5.0	10	0	0	15.0	77	103		45	14	11	0	0	3.5	SSW	15.6*	WNW	29	1	17	13	7.1	
CHARLESTON	286	967.1	1016.4	28.3	16.1	22.2	-1.3	32.8	28+	7.8	10	4	0	16.7	76	78	- 66	29	8	4	0	0	2.2	SW	9.8*	WSW	14	2	18	11	6.6	
ELKINS	600	948.7	1017.4	26.1	12.2	19.0	-2.2	32.2	17	3.9	10+	1	0	14.4	80	96	- 43	34	14	10	0	0	2.4	NW	14.3*	NNW	28	3	14	14	7.1	
HUNTINGTON	252	986.8	1016.7	28.3	15.6	21.9		32.2	27	9.4	10	1	0	16.1	74	93	- 32	40	10	6	0	0	2.6	S	9.8*	WSW	28	3	16	12	6.5	
PARKERSBURG U	187			28.9	16.7	22.8	-1.6	33.3	27+	10.0	9	4	0			71	- 33	35	11	6	0	0	2.5		16.5	W	28					66
WISCONSIN																																
GREEN BAY	208	992.3	1014.7	27.8	14.4	21.1	0.3	33.9	1	6.1	9	1	0	16.1	76	70	2	32	8	6	0	0	3.1	SW	17.9	N	21	10	17	4	4.8	77
LA CROSSE	199	990.5	1014.7	29.4	17.2	23.2	-0.1	37.2	1	11.1	4	4	0	16.1	69	131	35	54	9	5	0	0	3.8	SE	15.6*	NNW	16	11	13	7	4.9	
MADISON	262	980.3	1014.9	29.4	16.1	22.8	1.1	35.0	1	9.4	9	3	0	16.7	68	58	- 33	25	9	6	0	0	3.3	S	13.4	N	21	10	17	4	4.8	73
MILWAUKEE	205	990.6	1015.4	27.2	16.1	21.6	1.2	36.7	1	6.7	10	2	0	13.9	63	60	- 15	31	5	5	0	0	4.4	SSW	15.6	NE	21	14	14	3	4.1	83
WYOMING																																
CASPER	1621	838.1	1011.4	31.1	13.3	22.2	0.2	35.6	25	8.9	28	12	0	5.6	38	30	5	17	6	10	0	0	4.7	WSW	14.8*	NNW	7	15	11	5	4.0	
CHEYENNE	1867	814.0	1012.2	31.1	13.9	22.6	2.1	35.0	21	11.1	27	14	0	8.3	47	20	- 27	6	9	16	0	0	5.5	WNW	18.8	W	14	7	21	3	4.9	75
LANDER	1696	835.8	1011.4	30.6	12.8	21.6	0.1	35.6	25	7.8	27	8	0	5.0	38	1	- 18	1	1	7	0	0	3.3	WSW	15.2	SW	24+	13	11	7	4.1	74
SHERIDAN	1202	883.7	1012.3	30.6	12.8	21.6	-0.3	36.1	24+	7.2	1	8	0	9.4	49	13	- 17	5	9	11	0	0	3.2	SE	17.4	NW	28	15	12	4	3.8	76

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.) JULY 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	0	0	0
Huntsville	0	0	0
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	192	192	245
Annette	174	174	257
Barrow	864	864	803
Barter Island	765	765	735
Bethel	330	330	319
Cold Bay	439	439	474
Cordova	345	345	366
Fairbanks	169	169	171
Juneau	288	288	301
King Salmon	310	310	313
Kotzebue	464	464	381
McGrath	219	219	208
Nome	520	520	481
St. Paul Is.	600	600	605
Shemya	569	569	577
Yakutat	316	316	338
ARIZONA			
Flagstaff	0	0	37
Phoenix (U)	0	0	
Phoenix	0	0	0
Prescott	0	0	0
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	0
Little Rock	0	0	0
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	0	0	0
Blue Canyon	84	84	28
Burbank	0	0	0
Eureka (U)	234	234	270
Fresno	0	0	0
Long Beach	0	0	0
Los Angeles (U)	0	0	0
Los Angeles	0	0	28
Mt. Shasta (R)	77	77	25
Oakland	58	58	53
Point Arguello (R)	198	198	202
Red Bluff	0	0	0
Sacramento (U)	0	0	0
Sacramento	0	0	0
Sandberg (R)	7	7	0
San Diego	0	0	9
San Francisco (U)	166	166	192
San Francisco	96	96	81
Santa Catalina	10	10	
Santa Maria	135	135	99
Stockton	0	0	
San Jose (U)	15	15	
COLORADO			
Alamosa	11	11	65
Colorado Springs	0	0	16
Denver	6	6	0
Grand Junction	0	0	0
Pueblo	0	0	0
CONNECTICUT			
Bridgeport	4	4	0
Hartford	11	11	0
Middletown	22	22	
New Haven	2	2	0
DELAWARE			
Wilmington	0	0	0
DIST. OF COLUMBIA			
Washington (U)	0	0	
Washington	0	0	0
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	0	0	0
Atlanta	0	0	0
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	0	0	0
Savannah	0	0	0
Thomasville (U)	0	0	0
IDAHO			
Boise	2	2	0
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	25	25	16
Idaho Falls 42NW(R)	14	14	16
Lewiston	1	1	0
Pocatello	5	5	0
ILLINOIS			
Cairo (U)	0	0	0
Chicago (Midway)	2	2	0
Chicago (O'Hare)	16	16	
Moline	0	0	0
Peoria	2	2	0
Rockford	2	2	6
Springfield	2	2	0
INDIANA			
Evansville	0	0	0
Ft. Wayne	0	0	0
Indianapolis	0	0	0
South Bend	9	9	0
IOWA			
Burlington	4	4	0
Des Moines	0	0	0
Dubuque	4	4	12
Sioux City	0	0	0
Waterloo	7	7	12
KANSAS			
Concordia	0	0	0
Dodge City	0	0	0
Goodland	0	0	0
Topeka	0	0	0
Wichita	0	0	0
KENTUCKY			
Lexington	0	0	0
Louisville	0	0	0
LOUISIANA			
Alexandria	0	0	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (Audubon Park)	0	0	
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	42	42	78
Greenville (U)	57	57	
Portland	31	31	12
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	0	0	0
Frederick	4	4	0
MASSACHUSETTS			
Blue Hill Obs. (R)	12	12	0
Boston	1	1	0
Nantucket	10	10	16
Pittsfield	53	53	25
Worcester	28	28	6
MICHIGAN			
Alpena	48	48	53
Detroit (City AP)	2	2	0
Detroit (M. Wayne Co.)	11	11	0
Detroit (Willow Run)	6	6	0
Escanaba (U)	36	36	59
Flint	26	26	6
Grand Rapids	8	8	9
Lansing	18	18	6
Marquette (U)	51	51	59
Muskegon	18	18	22
S. Ste. Marie	79	79	109
MINNESOTA			
Duluth	50	50	65
Internat. Falls	33	33	71
Minneapolis	1	1	16
Rochester	6	6	25
St. Cloud	3	3	28
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	0	0	0
Kansas City	0	0	0
St. Joseph	0	0	0
St. Louis (RFC)	0	0	0
St. Louis	0	0	0
Springfield	0	0	0
MONTANA			
Billings	10	10	12
Butte	109	109	
Glasgow	4	4	31
Great Falls	23	23	22
Havre	16	16	28
Helena	32	32	31
Kalispell	106	106	50
Miles City	0	0	6
MONTANA (Cont'd.)			
Missoula	76	76	34
NEBRASKA			
Grand Island	0	0	0
Lincoln (U)	0	0	0
Norfolk	0	0	9
North Platte	0	0	0
Omaha	0	0	0
Omaha N. Omaha AP	0	0	9
Scottsbluff	0	0	0
Valentine	0	0	9
NEVADA			
Elko	26	26	9
Ely	20	20	28
Las Vegas	0	0	0
Reno	38	38	41
Tonopah	2	2	
Winnemucca	6	6	0
NEW HAMPSHIRE			
Concord	20	20	6
Mt. Washington Obs. (R)	478	478	493
NEW JERSEY			
Atlantic City	0	0	0
Atlantic City (U)	1	1	
Newark	0	0	0
Trenton (U)	0	0	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	0	0	0
Raton	0	0	9
Roswell	0	0	0
Silver City	0	0	
NEW YORK			
Albany	18	18	0
Binghamton	53	53	12
Buffalo	20	20	19
New York (U)	0	0	0
New York (LaGuardia)	0	0	0
Rochester	24	24	9
Schenectady	14	14	
Syracuse	14	14	6
NORTH CAROLINA			
Asheville (U)	4	4	0
Cape Hatteras (R)	0	0	0
Charlotte	0	0	0
Greensboro	0	0	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	0	0	0
NORTH DAKOTA			
Bismarck	3	3	25
Devils Lake (U)	9	9	40
Fargo	5	5	28
Grand Forks FAA	10	10	
Pembina	11	11	
Williston	0	0	
OHIO			
Akron	22	22	6
Cincinnati (U)	0	0	
Cincinnati	1	1	0
Cincinnati Obs.	0	0	0
Cleveland	30	30	6
Columbus	6	6	0
Columbus (U)	1	1	
Dayton	1	1	0
Mansfield	17	17	9
Sandusky (U)	3	3	0
Toledo	9	9	0
Youngstown	29	29	0
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	140	140	158
Burns (U)	66	66	12
Eugene	71	71	34
Meacham	196	196	84
Medford	20	20	0
Pendleton	8	8	0
Portland (U)	28	28	12
Portland	72	72	25
Roseburg	48	48	22
Salem	102	102	28
Sexton Summit (R)	254	254	81
PENNSYLVANIA			
Allentown	3	3	0
Erie	20	20	0
Harrisburg	1	1	0
Philadelphia (U)	0	0	
Philadelphia	0	0	0
Pittsburgh (U)	7	7	0
Pittsburgh	21	21	0
Reading (U)	0	0	0
Scranton	11	11	0
Williamsport	8	8	0
RHODE ISLAND			
Block Island	7	7	0
Providence	6	6	0
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville-Spartanburg	0	0	0
SOUTH DAKOTA			
Huron	0	0	12
Pierre	0	0	
Rapid City	4	4	22
Sioux Falls	0	0	19
TENNESSEE			
Bristol	5	5	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis (U)	0	0	0
Memphis	0	0	0
Nashville	0	0	0
Oak Ridge	1	1	0
TEXAS			
Abilene	0	0	0
Amarillo	0	0	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio (U)	0	0	
El Paso	0	0	0
Ft. Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	0
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	0	0	0
UTAH			
Milford	0	0	0
Salt Lake City	0	0	0
Wendover	0	0	0
VERMONT			
Burlington	30	30	16
VIRGINIA			
Lynchburg	0	0	0
Norfolk	0	0	0
Richmond	0	0	0
Roanoke	0	0	0
WASHINGTON			
Olympia	92	92	68
Seattle (U)	49	49	50
Seattle	36	36	34
Seattle-Tacoma	78	78	74
Spokane	35	35	19
Stampede Pass (R)	430	430	273
Tatoosh Island (R)	241	241	295
Walla Walla	2	2	
Walla Walla (U)	0	0	0
Yakima	27	27	0
WEST VIRGINIA			
Charleston	10	10	0
Huntington	9	9	0
Parkersburg (U)	5	5	0
WISCONSIN			
Green Bay	12	12	31
La Crosse	1	1	12
Madison	2	2	25
Milwaukee	20	20	43
WYOMING			
Casper	3	3	6
Cheyenne	3	3	28
Lander	4	4	6
Sheridan	8	8	25

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

JULY 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				∅ ALL OTHER			
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE		DEATHS	INJURIES	†DAMAGE	
								PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS			PROP. ERTY	CROPS
Alabama						0	0	4	5	0	0	5	0	2	2	4	0									0	0	6	0
Alaska N																													
Arizona	1	1	0	0	0					0	1	5	0	0	0	4	0									0	0	5	0
Arkansas										1	3	0	0	2	0	4	C									1	0	6	C
California *																													
Colorado	3	2	0	0	4	0	0	5	5	0	0	4	4	1	1	4	0									1	0	5	5
Connecticut	1	1	0	0	4	0	0	0	4																	0	1	5	4
Delaware										0	3	5	0	0	0	?	0												
Florida	7	5	0	0	5					0	0	3	0	3	2	5	0												
Georgia						0	0	3	4	0	0	4	0	2	1	3	0												
Hawaii *																													
Idaho								?	6						1	4													
Illinois						0	0	3	4	0	1	5	4	0	0	4	0									L 0	0	4	4
Indiana						0	0	0	3	0	1	4	0	3	0	4	0												
Iowa	1	1	0	0	4	0	0	5	6	0	1	6	6	0	0	5	0									0	0	4	4
Kansas	3	2		1	4						1	4		1	1														
Kentucky	1	1	0	0	4			4	6						1												2		
Louisiana	1	1	0	0	?	0	0	0	4	0	0	5	5	2	1	5	0									0	0	0	4
Maine	4	2	0	0	3					0	0	4	3	0	1	4	0									W 0	0	0	0
Maryland	2	1	0	0	4	0	0	?	0					0	4	4	0												
Massachusetts	2	2	0	0	4	0	0	4	3	0	2	5	0	0	3	5	0									R 0	0	5	0
																										D 0	0	0	0
Michigan	1	1	0	0	5	0	0	4	5	1	0	5	5	2	5	5	0												
Minnesota	1	1	0	0	5	0	0	6	6	0	0	5	5													0	2	5	4
Mississippi						0	0	0	?	0	0	4	0	1	0	4	0									0	0	0	4
Missouri										0	0	4	0	0	0	5	0												
Montana	2	2	0	0	0	0	0	5	6	0	3	0	0													2	5	5	0
Nebraska	1	1	0	0	3	0	0	5	6	0	0	5	4	2	0	4	0												
Nevada *																													
New Hampshire	3	2	0	2	4	0	0	3	3	0	0	3	0													R 0	0	4	0
																										W 0	0	0	0
New Jersey														4	2														
New Mexico	2	2	0	0	4					0	1	°6	C	0	7	3	0												
New York	1	1	0	0	3					1	17	5		3	2	5										1	1	6	
North Carolina	A3	3	0	0	5	0	0	4	6	0	1	5	5	2	6	5	0									0	0	5	5
North Dakota	1	1	0	0	0	0	0	5	6	0	0	4	0																
Ohio	2	2	0	0	4	0	0	0	3	1	1	°5	C	1	0	0	0												
Oklahoma	4	3	0	0	4	0	0	5	4	2	0	5	4	0	3	5	0									0	0	5	5
Oregon						0	0	3	5	0	0	2	3																
Pacific Area																												4	5
Pennsylvania						0	0	0	4	1	0	5	0	5	2	5	0												
Puerto Rico *																													
Rhode Island														0	2	0	0												
South Carolina	2	2	0	0	4	0	0	4	4	0	0	4	4	3	2	5	0												
South Dakota	3	3	0	0	4	0	?	6	7	1	?	5	0	1	0	4	0												
Tennessee						0	0	0	2	0	0	5	3	0	0	5	0									0	0	5	0
Texas	8	8	0	1	4					0	6	5	0																
Utah *																													
Vermont	1	1	0	0	3					0	2	4	0	0	0	4	0												
U.S. Virgin Is. *																													
Virginia						0	0	?	4					1	1	4	0												
Washington									4							4													
West Virginia	1	1	0	0	5					0	0	4	?																
Wisconsin	1	1	0	0	4	0	0	5	5	0	2	5	5	1	0	0	0												
Wyoming	1	1	0	0	3									1	1	0	0												

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
∅ For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop Damage.
C Crop damage.
A Includes waterspout.
D Dust Devil.
R Rain.
L Local flooding.
W Waterspout.
N No report received by printing deadline.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

JULY 1963

Heavy floods occurred in the Yaguez River at Mayaguez, Puerto Rico, on July 30 inundating the western sections of the city and causing damages estimated in excess of $100,000. According to local residents, it was the worst flood in 20 years and final damages might reach $500,000.

Flash floods were reported over widely scattered areas of continental United States during July. The most damaging one reported was in the Hot Springs, Ark., area. This was the worst flash flood in this area since May 14, 1923.

LAKE ERIE DRAINAGE

Heavy rainfall on the 29th caused heavy damage from flooding in Buffalo, N. Y. Most of the flood damage occurred in south Buffalo where 3.38 inches of precipitation occurred on the 29th. The 24-hour total on the 29th was the second highest of record. One death and $500,000 or more damage resulted from the flooding.

ATLANTIC SLOPE DRAINAGE

Localized heavy showers during the morning of the 21st in southwestern Connecticut caused rapid rises in some small streams in the Naugatuck and the lower Housatonic Basins. Some flooding resulted along Steele Brook, a tributary of the Naugatuck River in Watertown, Conn., causing some local damage to roads, factories, and homes. Many families in Watertown were evacuated due to local concern over a small dam.

Near flood stage occurred on the Saluda River at Pelzer, S. C., on the 4th due to widely scattered showers over the upper reaches of the Santee River System. Rainfall amounts up to 2 inches fell over the upper reaches on the 24th and 25th, but no flooding resulted.

The minor flooding along the lower reaches of the Savannah and Ogeechee Rivers in Georgia was due to rains during the last half of June. Excessive or heavy falls were well scattered during the period. No damages resulted from the flooding.

The flooding on the Ocmulgee, Oconee, Altamaha, and Satilla Rivers in Georgia was due to heavy rainfall during the end of June plus some shower activity in July.

EAST GULF OF MEXICO DRAINAGE

Heavy rains on the 13th and 15th, with lesser amounts on the 14th, 16th and 17th caused sharp rises with minor flooding on tributaries of the upper Tombigbee River in Mississippi. No material damage resulted from the overflow.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Rainfall during July over the Upper Mississippi Basin ranged from 1.53 inches at Minneapolis, Minn., to 13.61 inches at Canby, Minn. The July total of 13.61 inches at Canby was more than this year's total through July at Minneapolis (12.62 inches). For most of Minnesota, July was much above the long-term precipitation. For Wisconsin, most of the State continued the below normal accumulation except for the Alma-Hatfield Dam - Wisconsin Rapids - La Crosse area. Northeast Iowa was normal or just above the long-term mean.

Heavy rain during the late afternoon and evening of the 16th over the southern third of Minnesota produced flash flooding on the Whitewater River near Beaver, Minn. The greatest rainfall accumulation was an official 6 inches at the Whitewater State Park near St. Charles, Minn. The Sheriff and Deputies of Winona County evacuated all people from the Whitewater State Park, moving them into the town of St. Charles. Considerable damage resulted. The Park had to be closed for a week while damage was repaired and debris cleared.

Heavy thundershowers again set in over the southern third of Minnesota during the evening of the 17th, with heaviest concentration in the Rapidan-Blue Earth-Fairmont-Comfrey area. Blue Earth recorded 5.30 inches in a 6-hour period beginning at 5:30 p.m. on the 17th. The Blue Earth River flooded many acres upstream from Rapidan as did parts of the Watonwan River near Mankato. This heavy rainfall produced an 11-foot rise on the Minnesota River at Mankato, cresting 14.7 feet on the 24th, 4.3 feet below flood stage. Damage was slight.

Five inches of rain fell at Canby, Minn., during the evening of the 26th in a 2-hour period. Although Canby itself was flooded because of surface runoff, the Lac Qui Parle River downstream from Canby was able to hold the runoff with only slight overflow from Canby to near Dawson. The 24-hour rainfall at Canby (5.47 inches) was a new record. The monthly total of 13.61 inches is the most precipitation ever recorded in any month for Canby.

Four to 6 inches of rainfall in the Moline, Ill., area on the 18-19th produced rapid rises in all streams in the area with light flooding on the Maquoketa River at Maquoketa, Iowa, on the 19th and 20th. No damage resulted.

Missouri Basin.--Locally heavy flash flooding resulted from torrential rains in central Kansas during the night of the 10-11th. Rainfall ranged up to 12 inches, causing overflow along Spring, Bull Run Hobbs, and Gypsum Creeks. The principal flood waters from 6- to 8-inch rains on Spring and Gypsum Creeks spread over a 2-mile wide area, entering buildings in a 2-block long business district. The American Red Cross reported minor damage to 51 homes with 81 families affected and 1 injury. Parked automobiles were submerged in some instances as the flood level approached 1951 stages. Gypsum Creek crested 2.6 feet below 1951 levels. Flood losses were heavy.

A cloudburst of 9.5 inches on the evening of the 12th caused flash flooding at Harveyville, Kans., where water ran 2 feet deep in some of the streets during the storm. Surface water entered a few buildings and numerous basements. Dragoon Creek crested about 4 feet above flood stage. Downstream at Burlingame, Kans., Dragoon Creek crested about 3 feet below record levels. Highways were blocked for a couple of hours by local surface water accumulation of 4 to 5 feet from a 5-inch rain. Water flowed into basements and filled downtown streets.

Flash flooding occurred during the night of the 12-13th immediately north of Jamestown, Kans., where surface water blocked the highway briefly with little damage. Local overflow occurred on Turtle Creek in northern Wallace County. Rainfall of 4.6 inches was reported 15 miles south of Kanorado with amounts ranging up to 3 inches in Sherman County.

Heavy rains on the 12th caused the Blue River to rise to near flood stage on the 13th at the Bannister Road gage in Kansas City, Mo.

Ohio Basin.--A flash flood occurred on the upper Ohio River at Midland, Pa., on the 22d due to heavy rain.

According to newspaper and radio reports an estimated $1 million damages resulted from flooded cellars, basements, and washouts.

Arkansas Basin.--Heavy rain on the 11th caused flooding on the Chikaskia River in extreme south-central Kansas on the 11th and 12th. This was the first flooding at Corbin, Kans., since July 1961 and at Blackwell, Okla., since November 1961. Flooding also occurred during the same period at Enid, Okla., along South Boggy Creek. The rainfall on the 11th averaged 4.2 inches over the Chikaskia River Basin below Runny Meade, Kans. The observer at Enid, Okla., reported 6.52 inches on the same day. Damages along the Chikaskia River were largely confined to lowlands, highways, streets, and small bridges. At Enid, Okla., damages occurred to streets, basements, flooded cars, and park facilities.

Heavy rain on the 27th caused flooding on Bird Creek at Owasso, Okla., for a few hours on the 27th. This was the first flooding at Owasso since September 1962. The rainfall on the 27th measured 7.54 inches at Tulsa, Okla., airport. The rainfall at the five gaging stations in Tulsa averaged 4.21 inches with the greatest amount recorded as 9.1 inches.

Red Basin.--Flash flooding occurred at Hot Springs, Ark., on the morning of the 16th. This was the worst flash-flood since May 14, 1923. Excessive rainfall over lakes in the area caused large releases from Remmel Dam, Lake Catherine, which brought about a sharp rise on the Ouachita River at Malvern, Ark., on the 16th and flooding at Arkedelphia, Ark., on the 17th. This flooding was due to 8 to 10 inches of rain that fell during a period of 10 hours during the morning of the 16th. Damage to Hot Springs proper amounted to $1 million. In addition Garland County suffered an additional $1 million in property damage. Damages totaled $350,000 to sewers, bridges, and roads. The total damage for this flash flood is estimated at $2,350,000.

Minor flooding occurred on the Sulphur River at Hagansport, Tex., from the 16th to the 18th, due to heavy rains on the 14th and 15th which averaged 2.0 to 3.5 inches. Little or no damage resulted.

Great Basin.--Minor flash flooding occurred during the latter part of July in southern Utah. No monetary estimates of damage are available.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--July was a cool month in the Columbia Basin, with some stations reporting the coolest monthly average of record. Most streams fell during the month to near base flows, except in the upper Columbia River region where a little snowmelt was still occurring. Inflow to Grand Coulee Reservoir dropped from 235,000 c.f.s. on July 1 to 136,000 c.f.s. on July 31.

FLOOD STAGE DATA

(All dates in July unless otherwise specified) JULY 1963

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	Ft.			Ft.	
Savannah: Clyo, Ga.	11	June 28	21	13.4	8-9
Ogeechee: Dover, Ga.	7	June 27	2	7.7	1
Eden, Ga.	9	June 27	6	9.6	5
Ocmulgee: Abbeville, Ga.	12	June 30 4	1 6	12.2 12.25	June 30-1 5
Oconee: Milledgeville, Ga.	20	June 29	2	27.0	June 30
Dublin, Ga.	21	2	6	23.05	3
Mount Vernon, Ga.	16	4	9	18.95	6
Altamaha: Charlotte, Ga.	15	5	12	17.3	8
Satilla: Atkinson, Ga.	13	6	10	13.6	8
EAST GULF OF MEXICO DRAINAGE					
Oldtown Creek: Tupelo, Miss.	21	18	18	22.2	18
Tibbee Creek: Tibbee, Miss.	23	16	20	25.8	18
Tombigbee: Amory, Miss.	20	19	19	20.8	19
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Whitewater: Beaver, Nr., Minn.	7	17	18	7.95	17
Maquoketa: Maquoketa, Iowa	13	19	20	14.8	19

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM (Cont'd.)	Ft.			Ft.	
Missouri Basin					
Gypsum Creek: Gypsum, Kans.	15	11	12	19.1	11
Frenchman Creek: Palisade, Nebr.	7	12	12	7.2	12
Dragoon Creek: Burlingame (Nr.), Kans.	15	13	13	20.6	13
Arkansas Basin					
Chikaskia: Blackwell, Okla.	26	11	12	28.0	12
Corbin, Kans.	10	11	11	11.8	11
Bird Creek: Owasso, Okla.	24	27	27	25.15	27
Red Basin					
Ouachita: Malvern, Ark.				20.05	16
Arkadelphia, Ark.	17	17	17	19.5	17
Sulphur: Hagansport, Tex.	38	16	18	40.7	17

* Provisional

RAWINSONDE DATA

Average monthly values

JULY 1963

ALBANY, N. Y. — 1004 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	18.1	86	249	2.1
1000	31	122			256	2.7
950	31	563	17.6	74	286	9.5
900	31	1,024	15.5	71	298	10.1
850	31	1,507	12.3	71	298	9.9
800	31	2,014	9.4	68	297	11.5
750	31	2,545	7.0	57	288	13.4
700	31	3,113	3.9	52	283	14.2
650	31	3,706	.5	43	280	15.3
600	31	4,350	- 2.7	36	274	14.8
550	31	5,030	- 6.8	37	272	15.7
500	31	5,774	-11.3		272	18.1
450	31	6,570	-16.8		264	19.4
400	31	7,450	-23.1		262	19.8
350	31	8,415	-30.1		259	22.7
300	31	9,494	-38.1		256	26.2
250	31	10,728	-46.1		260	27.0
200	31	12,192	-51.3		272	22.2
175	31	13,056	-53.0		271	20.2
150	31	14,044	-55.2		271	17.3
125	31	15,202	-57.3		273	12.0
100	31	16,611	-57.6		281	6.6
80	31	18,022	-56.5		69	2.7
70	31	18,874	-55.2		69	5.4
60	31	19,858	-53.8		87	8.4
50	31	21,032	-52.3		93	10.7
40	31	22,481	-50.3		91	11.9
30	30	24,370	-47.7		90	16.1
25	29	25,575	-45.9		89	18.1
20	25	27,067	-43.5		89	18.8
15	9	29,014	-40.5			
10						
7						
5						

ALBUQUERQUE, N. MEX. — 840 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,619	20.9	51	96	2.1
1000	31	72				
950	31	521				
900	31	1,003				
850	31	1,510				
800	31	2,038	20.4	45	187	2.9
750	31	2,587	17.0	47	245	3.1
700	31	3,178	12.9	50	260	3.7
650	31	3,787	8.4	53	286	4.1
600	31	4,452	3.5	57	304	1.7
550	31	5,139	- 1.9	59	310	1.4
500	31	5,904	- 7.3	60	268	2.9
450	31	6,708	-12.3	53	253	4.7
400	31	7,610	-17.5	41	251	6.4
350	31	8,597	-24.1		249	8.7
300	31	9,703	-32.3		256	10.3
250	31	10,963	-42.0		255	11.3
200	31	12,437	-53.2		259	11.3
175	31	13,285	-59.4		257	9.9
150	31	14,236	-65.6		254	7.6
125	30	15,330	-70.1		268	5.8
100	30	16,652	-69.9		91	3.7
80	30	18,002	-63.8		100	8.9
70	30	18,836	-60.9		93	13.4
60	30	19,793	-57.9		93	16.7
50	30	20,950	-55.5		91	17.5
40	28	22,379	-53.1		88	20.6
30	27	24,248	-50.1		87	23.5
25	25	25,441	-47.6		83	26.6
20	25	26,923	-45.3		85	25.8
15	15	28,858	-43.4			

AMARILLO, TEXAS — 892 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	21.0	69	194	8.0
1000	31	90				
950	31	543				
900	31	1,022				
850	31	1,515	22.1	52	215	19.6
800	31	2,040	19.9	49	220	15.9
750	31	2,590	16.3	49	234	8.9
700	31	3,177	12.1	53	227	5.8
650	31	3,787	7.7	53	215	3.1
600	31	4,448	3.0	53	173	1.4
550	31	5,141	- 1.8	53	293	.8
500	31	5,900	- 6.8	50	290	2.7
450	31	6,711	-11.7	48	279	5.1
400	31	7,609	-17.2	38	291	4.9
350	31	8,597	-23.8		294	6.4
300	31	9,704	-32.2		298	8.2
250	31	10,965	-42.0		313	7.2
200	31	12,438	-53.4		312	6.8
175	31	13,286	-59.2		332	8.2
150	31	14,238	-65.2		336	8.4
125	31	15,335	-70.0		349	5.1
100	31	16,661	-69.5		58	6.4
80	31	18,011	-63.9		87	12.8
70	31	18,839	-61.0		92	15.3
60	31	19,802	-57.9		95	16.9
50	31	20,958	-55.4		94	19.0
40	31	22,389	-53.1		90	20.2
30	31	24,258	-50.1		89	24.7
25	31	25,454	-48.3		90	26.8
20	30	26,934	-45.6		89	28.4
15	15	28,858	-42.0			

ANCHORAGE, ALASKA — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	12.8	82	177	3.5
1000	31	111	13.3	77	179	4.7
950	31	541	11.7	74	188	8.9
900	31	993	9.0	76	191	7.2
850	31	1,465	6.3	78	185	3.7
800	31	1,960	3.5	79	193	1.7
750	31	2,480	.6	77	262	1.4
700	31	3,033	- 2.4	72	267	3.1
650	31	3,612	- 5.5	61	253	4.7
600	31	4,243	- 9.2	57	243	4.9
550	31	4,903	-13.2	53	252	6.8
500	31	5,631	-17.9	50	259	7.6
450	31	6,402	-23.4	45	270	8.4
400	31	7,262	-29.7	41	279	9.3
350	31	8,200	-37.0	39	284	11.7
300	31	9,248	-44.9		286	12.2
250	31	10,447	-51.5		293	13.8
200	31	11,896	-49.5		287	15.0
175	31	12,774	-48.3		285	13.2
150	31	13,789	-48.2		285	10.9
125	31	14,991	-47.9		287	8.9
100	31	16,463	-48.2		292	6.4
80	31	17,935	-47.6		304	2.9
70	31	18,820	-47.3		343	1.2
60	31	19,838	-47.0		65	2.5
50	31	21,047	-46.7		71	4.5
40	30	22,531	-46.0		86	8.2
30	30	24,450	-44.6		79	10.1
25	30	25,674	-43.1		79	14.0
20	28	27,185	-41.2		86	17.3
15	27	29,149	-38.7		89	18.5
10	17	31,963	-33.6		76	23.3
7	5	34,480	-31.1			

ANNETTE, ALASKA* — 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	37	12.4	90	305	.6
1000	30	139	12.0	85	261	.8
950	30	568	9.9	81	301	3.5
900	30	1,016	7.5	81	277	2.7
850	30	1,485	4.5	75	247	3.7
800	30	1,978	2.5	71	261	4.7
750	30	2,496	.1	71	263	4.7
700	30	3,049	- 3.0	65	287	4.3
650	30	3,626	- 6.2	55	281	5.2
600	30	4,256	- 9.8	52	276	4.9
550	30	4,918	-14.0	43	265	4.9
500	30	5,640	-18.7	40	265	5.6
450	30	6,412	-24.2	41	272	5.8
400	30	7,268	-30.4	41	267	6.2
350	29	8,197	-37.9	41	268	4.7
300	29	9,242	-45.2		213	2.9
250	29	10,443	-50.3		326	3.9
200	29	11,896	-50.4		312	7.2
175	29	12,771	-49.0		275	7.2
150	29	13,783	-48.7		271	6.8
125	29	14,981	-49.0		263	5.1
100	29	16,443	-49.7		266	2.7
80	29	17,904	-49.6		200	1.7
70	28	18,775	-49.5		140	2.3
60	27	19,789	-49.5		116	2.5
50	27	20,984	-49.5		110	5.4
40	26	22,446	-48.6		87	8.0
30	26	24,344	-46.8		83	11.7
25	24	25,554	-45.5		84	13.6
20	24	27,048	-43.5		88	15.9
15	23	28,995	-40.5		86	19.0
10	22	31,789	-35.7		87	24.1
7	19	34,315	-31.0		90	29.3
5	13	36,702	-25.7		86	31.1

ATHENS, GA. — 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	20.4	92	295	1.9
1000	31	146				
950	31	590	21.6	74	276	5.8
900	31	1,060	19.2	72	274	7.4
850	31	1,551	16.1	73	274	8.5
800	31	2,065	13.3	56	278	9.5
750	31	2,601	9.9	64	280	10.9
700	31	3,177	6.8	56	279	10.7
650	31	3,779	3.2	56	282	13.2
600	31	4,428	- .4	53	287	14.8
550	31	5,110	- 4.1	46	284	13.4
500	31	5,868	- 8.5	43	286	14.6
450	31	6,673	-13.3	41	292	16.7
400	31	7,566	-19.3	38	295	16.7
350	31	8,546	-26.2	33	297	20.0
300	31	9,642	-34.7		301	20.4
250	31	10,890	-44.2		305	21.8
200	31	12,352	-54.3		317	23.5
175	31	13,197	-59.7		324	22.0
150	31	14,151	-63.6		339	18.1
125	31	15,262	-66.1		353	9.1
100	31	16,617	-65.2		34	7.2
80	31	17,985	-62.4		68	11.5
70	31	18,818	-60.5		81	14.4
60	31	19,778	-57.9		85	18.5
50	30	20,934	-55.5		91	20.8
40	30	22,365	-52.9		93	21.6
30	29	24,233	-49.3		94	21.4
25	25	25,437	-47.2		92	25.8
20	20	26,919	-45.6		87	28.0
15	15	28,843	-43.9			
10						
7						
5						

BARROW, ALASKA * — 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	1.5	95	70	2.1
1000	31	81	1.7	90	112	2.9
950	31	500	4.0	82	213	.6
900	31	937	3.6	72	282	2.5
850	31	1,400	2.0	67	266	3.1
800	31	1,888	- .5	68	272	4.7
750	31	2,400	- 3.2	70	268	6.4
700	31	2,946	- 6.2	64	263	7.2
650	31	3,521	- 9.3	61	261	8.4
600	31	4,139	-13.0	53	265	8.9
550	31	4,793	-17.2	51	267	9.9
500	31	5,506	-22.1	46	265	11.1
450	31	6,268	-27.9	43	278	12.2
400	31	7,109	-34.3	41	278	14.2
350	31	8,029	-41.3		274	15.5
300	31	9,061	-47.2		272	16.3
250	31	10,263	-47.4		275	14.0
200	31	11,755	-43.6		277	11.3
175	31	12,654	-43.7		272	8.9
150	31	13,688	-44.0		270	8.9
125	31	14,912	-44.1		276	6.6
100	31	16,408	-44.2		282	3.1
80	30	17,908	-43.8		338	2.3
70	30	18,806	-43.7		23	2.7
60	30	19,841	-43.5		59	2.5
50	30	21,068	-43.2		76	4.5
40	30	22,572	-42.8		72	6.4
30	30	24,517	-41.7		80	9.9
25	30	25,755	-40.6		85	11.3
20	30	27,281	-38.7		82	12.4
15	29	29,267	-36.0		83	15.5
10	27	32,118	-31.3		79	15.7
7	22	34,688	-25.8		81	18.3
5	12	37,138	-20.9		76	15.3

BARTER IS., ALASKA — 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	3.4	91	293	1.0
1000	30	77	3.5	88	265	.8
950	30	499	6.4	82	277	5.8
900	30	940	6.0	72	277	8.2
850	30	1,406	3.5	72	269	10.1
800	30	1,896	1.0	74	269	12.0
750	30	2,408	- 2.4	76	269	12.6
700	30	2,956	- 5.4	74	272	12.8
650	30	3,527	- 8.8	70	269	12.8
600	30	4,150	-12.5	63	270	14.4
550	30	4,801	-16.7	55	268	14.2
500	30	5,519	-21.3	50	266	17.3
450	30	6,274	-26.9	51	265	17.9
400	30	7,126	-33.3	49	267	20.0
350	30	8,048	-40.4		271	22.7
300	30	9,083	-47.0		270	26.6
250	30	10,281	-49.2		268	26.2
200	30	11,761	-44.0		270	15.3
175	30	12,657	-44.0		272	13.0
150	30	13,691	-44.1		270	10.1
125	30	14,913	-44.2		278	8.4
100	30	16,409	-44.3		280	5.4
80	30	17,906	-43.9		284	2.3
70	30	18,805	-43.7		286	.8
60	30	19,839	-43.5		32	1.0
50	29	21,065	-43.1		66	3.5
40	29	22,570	-42.7		66	5.1
30	28	24,518	-41.5		74	6.6
25	27	25,758	-40.3		84	10.5
20	27	27,286	-38.7		92	12.2
15	23	29,274	-36.2		94	12.6
10	10	32,129	-31.1			

BETHEL, ALASKA — 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	9.9	93	249	5.6
1000	31	107			262	5.2
950	31	532	9.5	78	234	5.8
900	31	982	7.5	77	227	6.6
850	31	1,451	5.3	74	246	6.6
800	31	1,945	3.3	67	257	7.2
750	31	2,466	1.0	60	266	6.8
700	31	3,019	- 1.8	55	263	7.6
650	31	3,603	- 4.9	52	261	8.9
600	31	4,232	- 8.2	52	266	10.1
550	31	4,897	-12.3	44	265	11.5
500	31	5,625	-17.2	38	269	14.2
450	31	6,401	-22.7	38	276	15.5
400	31	7,262	-28.8	36	283	17.3
350	31	8,204	-35.8		282	19.8
300	31	9,258	-43.7		285	23.1
250	31	10,464	-50.1		285	24.1
200	30	11,920	-50.0		288	23.7
175	30	12,797	-48.5		282	18.7
150	30	13,811	-48.4		285	15.5
125	30	15,011	-48.5		285	11.1
100	30	16,479	-48.3		281	8.0
80	28	17,947	-48.0		300	5.2
70	28	18,832	-47.7		324	2.5
60	27	19,845	-47.5		50	2.3
50	27	21,051	-47.3		73	4.3
40	26	22,535	-46.3		78	7.2
30	26	24,452	-44.8		80	9.9
25	26	25,675	-43.6		78	11.9
20	26	27,181	-41.8		77	15.7
15	16	29,148	-38.9		83	17.7
10	6	31,976	-34.8			

BISMARCK, N. DAK. — 954 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	15.6	84	138	2.3
1000	31	102				
950	31	543	16.2	79	152	2.1
900	31	1,007	19.2	61	223	3.9
850	31	1,497	17.3	56	255	6.6
800	31	2,012	14.5	49	264	8.5
750	31	2,550	11.3	46	270	10.7
700	31	3,127	7.4	45	273	13.0
650	31	3,726	3.4	42	282	15.7
600	31	4,377	- 1.1	41	283	18.3
550	31	5,056	- 5.4	38	278	21.0
500	31	5,808	-10.0		270	24.1
450	31	6,601	-15.5		269	28.2
400	31	7,492	-21.6		273	30.1
350	31	8,461	-28.8		270	34.4
300	31	9,546	-36.6		266	42.2
250	31	10,787	-45.0		262	53.0
200	31	12,251	-52.3		264	56.7
175	31	13,109	-55.3		265	53.2
150	31	14,086	-58.0		269	41.4
125	31	15,229	-59.7		265	27.0
100	31	16,622	-59.6		266	15.2
80	31	18,027	-56.6		256	3.5
70	31	18,879	-55.4		121	1.4
60	31	19,862	-53.7		90	5.2
50	31	21,037	-52.6		86	9.1
40	31	22,484	-50.7		85	10.7
30	31	24,370	-47.7		84	13.0
25	28	25,582	-45.8		88	15.0
20	24	27,079	-43.4		89	14.6
15	14	29,030	-40.0		87	17.3

BOISE, IDAHO — 914 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	15.1	48	177	2.1
1000	31	92				
950	31	535				
900	31	998	17.4	40	251	2.5
850	31	1,487	18.3	30	316	10.5
800	31	2,003	15.1	30	313	8.5
750	31	2,544	11.3	33	281	6.8
700	31	3,118	7.2	35	240	9.1
650	31	3,722	3.0	34	234	15.7
600	31	4,368	- 1.3	34	230	23.5
550	31	5,048	- 6.1	32	227	30.7
500	31	5,795	-11.7	28	226	32.8
450	31	6,592	-17.4		231	34.2
400	31	7,467	-23.9		232	39.6
350	31	8,428	-30.8		231	44.5
300	30	9,508	-38.6		231	52.7
250	30	10,740	-46.4		232	57.5
200	30	12,199	-52.9		232	63.1
175	29	13,059	-54.4		233	62.4
150	29	14,041	-56.8		234	52.8
125	29	15,191	-58.5		237	33.6
100	29	16,594	-58.7		228	16.9
80	29	18,000	-57.0		196	6.2
70	28	18,854	-55.5		136	5.8
60	28	19,831	-54.4		104	7.0
50	28	21,003	-53.2		89	10.1
40	25	22,443	-51.4		91	11.3
30	25	24,323	-48.7		84	14.8
25	25	25,527	-46.5		83	17.1
20	23	27,008	-44.0		81	18.5
15	15	28,954	-40.6			
10						
7						
5						
4						

BROWNSVILLE, TEXAS — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	25.1	93	140	5.2
1000	31	124	25.2	87	150	10.9
950	31	572	22.9	82	163	19.6
900	31	1,046	20.5	73	167	20.8
850	31	1,539	18.0	66	166	17.9
800	31	2,056	15.4	57	165	16.9
750	31	2,595	12.5	51	152	13.2
700	31	3,177	9.2	49	139	11.3
650	31	3,779	5.4	48	122	9.3
600	31	4,438	1.6	46	115	9.1
550	31	5,127	- 2.4	41	100	8.0
500	31	5,886	- 7.0	38	95	8.4
450	31	6,693	-12.1	37	81	8.7
400	31	7,592	-17.8	31	75	9.1
350	31	8,577	-24.7		77	9.1
300	31	9,680	-33.1		68	9.7
250	31	10,935	-43.2		70	11.1
200	31	12,399	-55.0		64	12.6
175	31	13,239	-61.1		55	17.1
150	31	14,183	-67.0		52	20.8
125	31	15,271	-71.3		62	23.9
100	31	16,592	-69.4		73	23.5
80	31	17,940	-64.4		85	25.1
70	31	18,758	-61.8		85	25.5
60	31	19,719	-59.8		86	27.2
50	31	20,865	-57.4		87	31.1
40	31	22,284	-54.5		90	39.6
30	31	24,141	-50.7		89	36.7
25	31	25,333	-48.8		86	40.0
20	29	26,811	-45.1		87	42.2
15	28	28,747	-41.4		86	39.4
10	24	31,515	-37.0		91	45.7
7	19	34,014	-32.8		92	52.1
5	[illegible]	36,384	-28.5			

BUFFALO, N. Y. — 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	218	17.6	79	215	4.1
1000	31	136				
950	31	576	18.5	67	265	8.7
900	31	1,040	15.9	65	283	12.4
850	31	1,523	12.6	68	281	13.0
800	31	2,030	9.5	68	281	14.4
750	31	2,566	6.7	58	286	13.4
700	31	3,127	3.6	54	286	14.4
650	31	3,728	.6	47	287	15.2
600	31	4,365	- 2.8		286	14.0
550	31	5,048	- 6.6		288	16.5
500	31	5,789	-11.2		294	17.1
450	31	6,586	-16.6		290	18.7
400	31	7,466	-22.8		296	21.8
350	31	8,430	-30.0		295	24.5
300	31	9,510	-37.8		298	25.6
250	31	10,745	-46.0		301	30.1
200	31	12,208	-51.6		303	30.3
175	30	13,075	-52.9		301	27.8
150	30	14,062	-55.8		304	20.0
125	30	15,216	-58.0		302	14.0
100	30	16,622	-57.8		309	9.1
80	30	18,034	-56.4		18	5.2
70	30	18,886	-55.6		56	7.6
60	29	19,870	-54.3		73	10.1
50	28	21,045	-52.4		82	13.0
40	28	22,497	-50.2		83	15.2
30	27	24,387	-47.7		82	16.5
25	27	25,596	-46.0		80	16.5
20	21	27,083	-43.5		81	21.6
15	16	29,028	-40.1		82	24.7

BURRWOOD, LA. — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	27.1	82	234	3.3
1000	31	149	26.3	79	225	4.1
950	31	600	23.1	80	223	5.8
900	31	1,071	20.2	76	223	7.0
850	31	1,564	17.3	71	212	6.8
800	31	2,080	14.4	65	209	6.2
750	31	2,619	11.2	64	208	5.8
700	31	3,197	8.0	61	212	3.9
650	31	3,801	4.5	57	221	3.3
600	31	4,453	.5	56	239	2.5
550	31	5,143	- 3.5	55	247	1.6
500	31	5,896	- 7.8	51	314	2.1
450	31	6,704	-12.7	45	319	2.7
400	31	7,598	-18.3	37	344	3.3
350	31	8,581	-25.0	32	345	3.9
300	31	9,683	-33.1		342	6.0
250	31	10,938	-42.9		20	6.0
200	31	12,404	-54.4		25	12.8
175	31	13,247	-60.5		22	14.4
150	31	14,193	-65.6		31	14.4
125	31	15,290	-68.8		42	17.3
100	31	16,626	-67.4		69	18.1
80	31	17,982	-63.6		77	19.4
70	31	18,810	-60.8		80	22.9
60	30	19,771	-58.1		85	26.6
50	30	20,926	-55.2		92	30.1
40	30	22,358	-52.7		94	31.7
30	30	24,226	-50.0		90	32.4
25	30	25,423	-47.6		85	34.8
20	29	26,907	-44.9		87	38.1
15	29	28,844	-41.6		86	41.0
10	26	31,632	-35.5		90	48.0
7	24	34,137	-31.6		89	46.0
5	17	36,534	-26.9			

CANTON IS., PACIFIC AREA* — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	27.0	80	101	7.2
1000	31	90	26.5	79	99	8.4
950	31	540	23.3	82	92	12.2
900	31	1,014	20.2	73	95	14.4
850	31	1,507	17.5	64	92	15.0
800	31	2,023	14.7	62	93	15.3
750	31	2,563	12.4	47	94	15.7
700	31	3,144	9.6	36	89	17.1
650	31	3,751	6.2	30	86	19.8
600	31	4,407	2.3	27	85	23.3
550	31	5,100	- 1.8	28	88	25.6
500	31	5,858	- 5.9	20	90	26.6
450	31	6,676	-10.4	16	92	29.1
400	31	7,576	-16.2	16	92	25.6
350	31	8,568	-23.0	14	93	21.4
300	31	9,678	-31.6	16	89	18.1
250	31	10,942	-41.9		79	15.7
200	31	12,414	-54.3		88	16.5
175	30	13,255	-61.3		92	14.2
150	30	14,195	-68.6		98	10.7
125	30	15,267	-75.8		81	8.5
100	29	16,544	-78.0		67	2.7
80	27	17,832	-73.7		91	13.2
70	26	18,621	-68.5		93	24.5
60	26	19,554	-64.0		90	34.6
50	26	20,683	-59.3		90	43.3
40	24	22,100	-53.6		90	42.2
30	24	23,968	-50.3		90	3.1
25	24	25,162	-48.5		278	13.8
20	24	26,639	-46.2		277	28.8
15	22	28,560	-45.3		272	41.8
10	20	31,269	-43.4		273	43.7
7	19	33,694	-39.0		279	41.6
5	15	36,015	-33.8		270	47.4
4	8	37,555	-30.9			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	CAPE HATTERAS, N. C. 1015 MB				Wind		CARIBOU, ME. 989 MB				Wind		CHARLESTON, S. C. 1015 MB				Wind		COLD BAY, ALASKA* 1014 MB				Wind		COLUMBIA, MO. 986 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	4	22.9	91	273	2.3	31	191	16.3	91	222	2.9	31	13	22.4	89	277	2.7	31	30	9.0	96	245	5.1	31	238	20.5	87	139	4.3
1000	31	131	23.2	83	270	4.1	31	97					31	146	23.1	81	266	4.7	31	145	8.5	94	240	8.0	31	119					
950	31	572	20.9	76	291	7.6	31	535	16.0	78	240	6.4	31	594	22.0	70	270	7.2	31	569	8.6	88	248	12.4	31	565	22.8	68	207	1.1
900	31	1,045	18.2	72	291	6.0	31	994	14.3	72	267	8.9	31	1,063	19.7	64	275	7.0	31	1,017	7.6	82	266	12.8	31	1,036	20.5	64	237	1.7
850	31	1,533	15.4	71	276	8.4	31	1,475	11.4	70	266	11.3	31	1,554	16.7	63	273	7.4	31	1,487	6.0	74	273	13.6	31	1,528	17.7	60	256	4.1
800	31	2,045	12.4	69	272	9.7	31	1,980	8.7	69	266	12.8	31	2,068	13.3	62	267	8.9	31	1,982	3.9	70	273	13.4	31	2,045	14.7	57	267	1.1
750	31	2,578	9.2	63	267	12.0	31	2,512	5.7	66	265	14.8	31	2,609	10.3	61	275	11.7	31	2,504	1.6	64	268	13.2	31	2,583	11.5	57	284	11.5
700	31	3,154	6.0	58	266	14.0	31	3,075	3.0	59	267	15.7	31	3,180	6.8	56	275	14.0	31	3,060	- 1.0	60	266	13.8	31	3,166	8.2	55	296	12.6
650	31	3,750	2.7	57	262	15.7	31	3,668	- .3	55	264	18.8	31	3,783	3.3	55	279	14.8	31	3,645	- 4.0	58	263	16.1	31	3,766	4.7	51	304	11.3
600	31	4,401	- 1.1	58	262	17.7	31	4,308	- 3.8	43	264	18.8	31	4,432	- .2	51	280	15.9	31	4,277	- 7.1	51	255	14.6	31	4,414	.2	42	310	10.5
550	31	5,081	- 4.7	55	261	18.3	31	4,986	- 7.7	42	263	20.6	31	5,118	- 3.9	49	280	16.7	31	4,945	-10.8	44	264	15.9	31	5,102	- 3.6	40	313	10.7
500	31	5,836	- 8.8	48	260	20.0	31	5,727	-12.1	37	265	20.6	31	5,871	- 8.2	47	277	17.7	31	5,677	-15.6	43	268	17.3	31	5,861	- 8.6	42	314	12.8
450	31	6,636	-13.8	45	258	21.6	31	6,522	-17.5	36	263	21.4	31	6,677	-13.4	42	274	18.1	31	6,455	-20.7	39	266	18.8	31	6,666	-12.8		321	13.7
400	31	7,531	-19.5	46	249	22.3	31	7,397	-23.7	33	263	22.3	31	7,571	-19.1	39	280	18.3	31	7,324	-26.9	39	269	21.2	31	7,562	-18.7		323	18.7
350	31	8,511	-26.1	40	243	24.1	31	8,359	-30.6		254	26.0	31	8,551	-25.9	35	275	19.8	31	8,271	-34.3	40	264	21.2	31	8,544	-25.4		327	23.5
300	31	9,609	-34.2		253	23.5	31	9,435	-38.5		250	28.2	31	9,649	-34.3		282	20.6	31	9,332	-42.0		264	28.2	31	9,645	-33.4		326	28.2
250	31	10,859	-44.0		253	25.3	31	10,666	-46.2		253	32.3	31	10,899	-43.9		282	21.2	31	10,545	-49.3		261	29.9	31	10,900	-42.8		322	33.6
200	31	12,323	-54.1		265	26.8	31	12,134	-50.6		257	31.3	31	12,361	-54.8		295	21.6	31	11,994	-52.9		257	26.6	31	12,370	-53.3		323	36.7
175	31	13,171	-58.3		273	25.8	31	13,002	-51.9		258	25.8	31	13,204	-59.9		311	20.0	31	12,856	-51.9		263	21.8	31	13,214	-58.6		325	34.8
150	31	14,134	-61.1		281	18.1	30	13,992	-53.2		256	23.1	31	14,158	-63.8		327	11.5	30	13,854	-51.2		262	17.5	31	14,174	-63.9		331	28.4
125	31	15,262	-62.7		291	7.8	30	15,162	-54.6		263	17.1	31	15,270	-65.9		351	8.4	29	15,036	-51.3		260	11.7	30	15,281	-66.0		334	18.7
100	31	16,638	-62.4		82	2.3	30	16,588	-54.9		262	9.9	31	16,628	-64.1		56	7.4	29	16,486	-50.4		265	6.4	30	16,635	-64.6		8	8.9
80	31	18,022	-60.0		80	9.9	30	18,019	-53.5		274	2.7	31	18,002	-61.6		75	12.0	28	17,937	-50.6		280	1.7	29	18,010	-61.3		56	8.4
70	31	18,862	-58.4		79	14.2	30	18,884	-52.8		31	.8	31	18,839	-59.8		78	16.1	28	18,810	-50.2		21	1.2	29	18,844	-59.6		93	18.3
60	31	19,833	-56.3		83	17.9	30	19,875	-51.8		72	4.5	30	19,800	-57.3		85	19.2	27	19,816	-49.9		55	3.7	29	19,814	-57.1		79	15.9
50	31	20,997	-54.0		90	21.4	29	21,060	-50.2		86	8.0	30	20,959	-54.9		88	22.3	27	21,009	-49.5		67	6.0	29	20,975	-54.6		89	18.7
40	31	22,437	-51.5		91	23.7	29	22,522	-48.7		95	11.1	30	22,396	-51.5		93	23.9	27	22,473	-48.6		77	9.3	27	22,413	-52.0		91	19.2
30	31	24,319	-48.0		92	25.5	28	24,423	-46.2		91	13.4	29	24,276	-48.7		90	23.5	26	24,367	-47.2		77	11.5	25	24,295	-49.4		91	21.0
25	31	25,526	-45.9		91	26.8	28	25,640	-44.3		88	16.1	28	25,481	-47.2		89	26.4	26	25,577	-45.8		82	13.6	21	25,494	-47.8		86	22.0
20	31	27,019	-43.7		87	28.6	28	27,144	-41.7		92	18.3	24	26,972	-44.7		89	32.4	26	27,068	-43.9		78	15.7	14	26,971	-45.0		86	26.8
15	31	28,965	-40.4		88	33.2	28	29,109	-37.9		89	22.2	16	28,915	-41.1		84	37.5	26	29,011	-41.2		81	18.3	7	28,948	-42.2			
10	29	31,756	-35.8		93	38.1	26	31,938	-31.8		95	24.5	7	31,736	-35.9				23	31,798	-36.3		72	19.0						
7	25	34,266	-30.3		92	35.9	20	34,487	-26.7		92	28.4							18	34,310	-31.1		73	26.8						
5	16	36,651	-25.8				6	36,938	-22.2										11	36,732	-28.7									
4																			7	38,363	-21.7									

Standard pressure surface (mb.)	DAYTON, OHIO 982 MB						DEL RIO, TEXAS 977 MB						DENVER, COLO. 839 MB						DODGE CITY, KANS. 924 MB						EL PASO, TEXAS 882 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	297	17.2	89	227	.6	31	314	24.9	76	117	8.0	31	1,611	15.9	65	197	3.7	31	792	21.4	72	162	7.4	31	1,192	29.7	56	187	.6
1000	31	137					31	110					31	87					31	94					31	76				
950	31	580	19.5	69	243	4.5	31	565	23.4	77	133	17.3	31	535					31	545					31	530				
900	31	1,044	17.1	65	270	5.8	31	1,033	20.6	79	162	21.0	31	1,008					31	1,018	23.4	59	186	15.3	31	1,013				
850	31	1,530	14.2	59	273	6.6	31	1,527	19.2	71	162	19.6	31	1,501					31	1,519	23.0	50	208	18.8	31	1,514	23.1	47	136	2.6
800	31	2,040	11.5	54	278	8.2	31	2,047	16.3	66	158	15.3	31	2,023	20.4	46	255	4.7	31	2,045	19.7	48	218	15.2	31	2,042	20.5	47	265	2.7
750	31	2,575	8.6	51	283	9.3	31	2,595	14.0	50	156	13.0	31	2,578	17.9	41	267	5.1	31	2,596	16.2	48	222	11.9	31	2,591	16.8	48	245	2.3
700	31	3,145	5.7	45	289	9.9	31	3,174	11.5	36	144	8.7	31	3,166	14.1	42	257	6.0	31	3,182	12.2	47	226	8.9	31	3,181	12.5	54	188	2.1
650	31	3,744	2.7	41	301	11.1	31	3,787	7.4	36	122	5.4	31	3,783	9.3	45	266	5.4	31	3,794	7.7	49	232	4.1	31	3,792	7.8	60	95	1.8
600	31	4,392	- 1.0	40	303	13.4	31	4,443	2.9	36	106	5.1	31	4,445	3.8	50	271	6.4	31	4,454	3.0	47	254	2.1	31	4,455	2.7	65	64	0.6
550	31	5,075	- 4.9	38	302	14.8	31	5,133	- 1.6	36	90	5.1	31	5,135	- 2.0	53	275	8.5	31	5,145	- 1.9	46	321	3.3	31	5,142	- 2.3	65	80	1.8
500	31	5,825	- 9.3		305	15.7	31	5,894	- 6.4	36	79	6.2	31	5,896	- 7.7	52	270	10.7	31	5,904	- 6.7	42	314	6.2	31	5,904	- 7.3	56	98	1.8
450	31	6,627	-14.7		307	17.5	31	6,706	-11.5		78	8.0	31	6,704	-12.8	46	268	13.0	31	6,717	-11.7	39	298	8.5	31	6,712	-12.2	48	116	4.9
400	31	7,514	-20.8	31	309	20.0	31	7,605	-17.1		70	9.5	31	7,599	-18.5	35	267	15.2	31	7,611	-17.5	36	281	9.7	31	7,611	-17.5	42	140	2.7
350	31	8,488	-27.6		315	23.7	31	8,593	-24.1		64	9.7	31	8,581	-25.4		257	19.2	31	8,602	-24.1		280	12.0	31	8,598	-24.2	36	120	1.7
300	31	9,578	-35.7		315	26.8	31	9,700	-32.3		56	11.5	31	9,682	-33.3		252	25.6	31	9,709	-32.6		285	14.8	31	9,705	-32.4		95	1.0
250	31	10,822	-44.7		317	30.3	31	10,961	-42.0		49	13.8	31	10,940	-42.3		255	31.9	31	10,971	-41.8		286	14.4	31	10,965	-42.3		321	1.7
200	31	12,283	-53.4		319	32.8	31	12,435	-53.7		48	15.9	31	12,415	-52.6		257	34.2	30	12,446	-53.0		292	15.5	31	12,437	-54.0		299	3.1
175	31	13,136	-56.5		320	31.5	31	13,281	-60.0		49	17.7	31	13,267	-58.0		256	33.8	30	13,294	-59.1		293	15.0	31	13,283	-60.0		26	2.9
150	31	14,108	-59.1		318	23.5	31	14,229	-66.2		55	20.4	31	14,225	-63.4		257	29.1	29	14,247	-64.4		286	13.8	31	14,232	-66.2		57	5.1
125	31	15,242	-61.5		324	16.1	29	15,323	-70.4		68	18.7	31	15,333	-67.8		258	18.5	29	15,350	-68.5		300	12.0	31	15,322	-71.5		63	7.2
100	31	16,624	-61.0		342	8.9	29	16,643	-70.2		72	19.4	31	16,675	-66.5		231	7.4	29	16,685	-67.6		17	4.5	31	16,640	-70.8		82	11.7
80	31	18,016	-59.4		39	6.8	29	17,986	-65.2		80	20.2	31	18,045	-60.7		118	4.3	29	18,049	-61.8		80	8.9	30	17,979	-65.8		92	16.7
70	31	18,861	-57.5		59	9.3	29	18,807	-62.5		85	21.8	31	18,892	-58.3		99	9.9	29	18,888	-59.4		84	11.9	30	18,803	-62.7		92	14.4
60	31	19,834	-55.5		67	13.0	29	19,762	-59.6		89	26.2	31	19,856	-56.0		91	11.5	29	19,851	-57.0		90	15.2	30	19,753	-59.6		99	11.4
50	31	21,002	-53.5		81	15.3	29	20,911	-56.8		88	25.5	31	21,023	-53.7		90	14.6	29	21,010	-54.8		93	17.1	29	20,902	-56.8		92	24.5
40	31	22,444	-51.2		84	16.3	29	22,334	-54.0		87	30.5	30	22,466	-51.5		91	17.5	29	22,447	-51.9		88	18.7	29	22,324	-54.0		91	27.2
30	31	24,324	-48.6		81	19.2	29	24,194	-50.5		90	32.8	27	24,348	-49.0		89	19.6	28	24,326	-48.9		86	21.4	28	24,185	-50.3		83	29.9
25	30	25,526	-46.8		81	20.6	27	25,386	-48.3		90	34.4	24	25,542	-47.0		86	20.0	22	25,540	-47.0		85	22.0	27	25,378	-48.6		89	29.9
20	28	27,013	-44.2		79	23.3	27	26,863	-46.0		87	39.2	23	27,028	-44.8		92	21.2	14	27,024	-44.5				23	26,858	-46.0		86	33.4
15	19	28,964	-41.0		82	24.1	27	28,791	-42.3		86	40.4	17	28,973	-41.8		82	26.4	6	28,911	-41.5				12	28,790	-41.9			
10	8	31,717	-37.3				20	31,558	-39.4		85	47.8	7	31,740	-37.8															
7							14	34,014	-35.9																					

Standard pressure surface (mb.)	ELY, NEV. 810 MB						FAIRBANKS, ALASKA* 995 MB						FLINT, MICH. 989 MB						FORT WORTH, TEXAS 994 MB						GLASGOW, MONT. 932 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	1,908	11.0	33	184	7.0	31	135	12.0	83	242	2.3	31	234	15.6	89	235	2.3	31	180	25.2	75	184	4.7	31	696	14.9	77	67	4.3
1000	31	98					31	93					31	139					31	121					31	90				
950	31	542					31	519	12.1	66	262	8.2	31	582	18.7	66	272	6.6	31	581	24.7	67	211	19.8	31	532				
900	31	1,010					31	977	9.4	65	261	9.5	31	1,043	16.2	62	278	8.2	31	1,049	23.1	54	218	19.2	31	996	18.4	58	195	1.6
850	31	1,496					31	1,448	6.0	71	253	10.7	31	1,527	13.1	62	278	9.7	31	1,546	20.4	58	215	12.8	31	1,486	17.4	61	247	6.2
800	31	2,009	15.9	26	180	7.0	31	1,942	2.7	71	252	12.0	31	2,035	10.2	59	283	10.3	31	2,067	16.7	60	207	7.8	31	2,000	14.4	50	256	8.4
750	31	2,560	16.1	20	191	9.7	31	2,457	- .7	73	255	13.0	31	2,568	7.3	56	286	12.0	31	2,607	13.6	57	191	4.5	31	2,538	10.1	52	260	9.9
700	31	3,141	12.0	20	213	14.0	31	3,011	- 3.8	70	253	13.0	31	3,135	4.9	46	287	12.2	31	3,192	9.5	54	167	2.5	31	3,111	6.2	52	254	11.8
650	31	3,753	7.3	23	208	19.2	31	3,586	- 7.0	63	249	11.9	31	3,733	1.9	41	293	14.0	31	3,798	5.5	53	140	2.5	31	3,710	1.7	56	257	10.7
600	31	4,408	2.2	27	208	21.2	31	4,214	-10.8	63	254	11.9	31	4,378	- 1.6	43	297	15.0	31	4,453	1.2	53	84	2.7	31	4,355	- 1.6	47	258	11.1
550	31	5,097	- 3.3	29	208	22.5	31	4,872	-14.7	58	262	13.4	31	5,059	- 5.6		301	15.7	31	5,143	- 2.5	45	56	1.1	31	5,033	- 7.4	46	257	11.3
500	31	5,851	- 8.5		218	25.3	31	5,594	-19.4	51	266	14.6	31	5,807	-10.1		299	17.5	31	5,900	- 6.6	38	18	4.7	31	5,774	-11.4	41	250	8.6
450	31	6,655	-13.9		227	24.7	31	6,362	-25.1	42	269	14.8	31	6,603	-15.5		303	20.2	31	6,711	-11.6	31	28	6.2	31	6,564	-17.4		252	10.5
400	31	7,545	-20.4		230	30.1	31	7,215	-31.3	39	282	16.3	31	7,448	-22.0		303	21.6	31	7,609	-17.2		10	7.8	31	7,440	-23.9		252	14.2
350	31	8,519	-27.6		231	35.6	31	8,147	-38.4	36	272	17.7	31	8,456	-28.9		310	25.5	31	8,598	-23.9		17	9.5	31	8,402	-31.3		255	15.8
300	31	9,610	-35.7		231	41.8	31	9,189	-46.2		269	19.8	31	9,542	-36.7		313	31.1	31	9,705	-32.3		17	10.9	31	9,475	-39.8		250	17.4
250	31	10,856	-43.9		232	50.7	31	10,381	-52.8		271	21.2	31	10,782	-45.0		314	35.4	30	10,967	-42.0		17	13.4	31	10,703	-46.8		252	24.6
200	31	12,325	-52.7		231	55.0	31	11,828	-48.9		273	15.9	31	12,246	-52.1		313	39.2	30	12,439	-53.8		20	16.1	31	12,165	-51.7		253	29.9
175	31	13,178	-57.5		231	52.8	30	12,709	-47.2		279	13.8	31	13,106	-54.1		316	32.1	30	13,285	-60.0		23	17.1	31	13,011	-52.8		255	34.8
150	31	14,141	-62.2		232	46.8	30	13,729	-47.0		272	10.9	31	14,088	-56.9		317	27.0	30	14,235	-65.4		45	16.1	31	14,019	-55.4		253	34.8
125	31	15,257	-65.4		235	30.5	30	14,935	-47.1		282	8.7	31	15,235	-58.9		315	17.1	30	15,333	-69.5		43	13.8	29	15,179	-56.9		251	20.6
100	31	16,615	-64.3		214	10.5	30	16,414	-46.8		277	6.0	31	16,633	-58.7		327	9.9	30	16,661	-68.8		58	15.7	29	16,589	-57.3		248	11.4
80	31	17,992	-60.5		166	5.6	29	17,894	-46.4		268	2.5	31	18,039	-57.0		9	6.6	30	18,013	-64.1		75	16.5	29	18,004	-55.4		224	4.9
70	29	18,839	-58.3		116	6.4	29	18,777	-46.2			.0	31	18,897	-55.9		42	6.0	30	18,845	-61.0		81	19.0	29	14,864	-53.8		125	1.4
60	29	19,802	-56.5		100	9.7	27	19,808	-46.0		70	2.1	31	19,873	-54.2		71	10.1	30	19,800	-58.4		91	20.8	29	19,851	-52.5		94	4.9
50	29	20,964	-54.4		87	12.0	27	21,022	-45.6		97	4.1	31	21,045	-52.3		82	11.5	30	20,955	-55.5		94	22.7	29	21,030	-51.7		85	7.4
40	29	22,401	-52.0		85	15.3	27	22,509	-45.3		83	7.2	30	22,497	-50.6		84	12.6	30	22,384	-53.3		87	24.5	29	22,480	-50.4		92	9.7
30	28	24,274	-49.3		89	17.9	25	24,429	-44.2		77	9.7	30	24,383	-47.9		80	16.5	29	24,252	-49.7		89	29.0	29	24,367	-47.6		90	11.3
25	27	25,476	-47.4		86	18.5	25	25,656	-42.7		86	13.8	28	25,592	-45.8		83	18.5	29	25,451	-47.5		87	31.3	26	25,577	-45.4		90	13.4
20	25	26,957	-45.0		87	20.4	23	27,174	-40.5		87	15.7	25	27,085	-42.6		81	18.7	27	26,935	-44.7		86	31.9	23	27,076	-42.8		93	14.4
15	21	28,895	-41.5		87	21.2	19	29,148	-37.9		82	17.7	11	29,032	-40.0				26	28,866	-42.3		86	36.3	16	29,024	-39.8			
10	5	31,642	-37.3				18	31,974	-32.6		78	22.7							12	31,659	-37.2				6	31,834	-35.4			
7							12	34,520	-27.1																					
5							5	36,984	-22.3																					

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	GRAND JUNCTION, COLO. 852 MB						GREAT FALLS, MONT. 887 MB						GREEN BAY, WIS. 990 MB						GREENSBORO, N. C. 985 MB						GUAM, MARIANA IS. 997 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,474	20.0	40	122	5.8	31	1,123	12.9	64	232	6.2	30	210	15.5	92	290	1.4	31	273	18.8	92	288	1.2	31	111	24.9	94	105	2.9
1000	31	66					31	97					30	123					31	145					31	84				
950	31	518					31	537					30	565	18.2	69	269	5.4	31	591	20.7	69	311	4.1	31	536	23.6	86	119	8.4
900	31	998					31	1,003					30	1,025	15.6	65	270	6.6	31	1,056	18.1	65	307	5.2	31	1,008	21.0	84	126	8.4
850	31	1,496	20.4	39	122	5.6	31	1,486	16.1	44	236	8.5	30	1,508	12.8	63	276	7.2	31	1,544	15.2	67	285	6.2	31	1,502	18.5	80	125	7.4
800	31	2,022	21.0	34	142	9.3	31	1,999	13.4	46	250	5.6	30	2,016	10.3	57	285	9.1	31	2,056	12.0	68	280	9.7	31	2,022	16.0	76	114	8.2
750	31	2,575	18.1	34	188	6.2	31	2,534	9.8	48	251	6.8	30	2,549	8.0	47	289	11.9	31	2,594	8.9	67	284	11.9	31	2,567	13.1	76	118	8.4
700	31	3,164	13.9	36	237	8.2	31	3,109	5.8	50	248	10.5	30	3,118	5.2	41	293	13.2	31	3,164	5.7	63	283	12.6	31	3,148	10.0	73	112	8.7
650	31	3,778	8.9	42	249	9.9	31	3,705	1.7	46	246	15.3	30	3,717	2.3	35	298	14.0	31	3,766	2.3	59	282	14.2	31	3,759	6.4	73	109	8.5
600	31	4,439	3.2	49	246	10.9	31	4,352	- 2.7	38	245	21.0	30	4,363	- 1.5	34	302	15.9	31	4,411	- 1.0	50	281	14.8	31	4,415	2.5	74	110	9.7
550	31	5,131	- 4.8	59	234	13.4	31	5,028	- 7.7	35	243	25.1	30	5,040	- 5.7		303	17.5	31	5,099	- 4.8	44	282	14.4	31	5,112	- 1.5	71	95	9.7
500	31	5,885	- 8.6	62	233	16.3	31	5,771	-12.6		242	27.2	30	5,792	-10.2	34	301	20.8	31	5,847	- 9.2	42	281	17.3	31	5,869	- 5.8	65	92	10.3
450	31	6,693	-13.2	45	243	17.5	31	6,559	-18.1		242	31.1	30	6,591	-15.6		307	21.6	31	6,652	-14.4	40	283	17.7	31	6,686	-10.6	59	90	11.5
400	31	7,583	-19.1	35	247	19.2	31	7,437	-24.7		243	34.2	30	7,475	-21.6		306	24.3	31	7,538	-20.2	36	288	18.7	31	7,587	-16.1	53	83	12.0
350	31	8,562	-26.1		243	23.5	31	8,394	-32.2		242	39.2	30	8,445	-28.6		309	29.3	31	8,514	-27.1		292	20.0	31	8,580	-22.9	51	85	11.9
300	31	9,660	-33.9		242	29.1	31	9,463	-40.1		242	44.7	30	9,531	-36.6		310	36.5	31	9,607	-35.2		294	23.7	31	9,692	-31.2	44	79	11.7
250	31	10,913	-42.7		244	34.0	31	10,688	-47.3		241	52.7	30	10,771	-45.0		306	43.5	31	10,853	-44.2		294	26.6	30	10,955	-41.6		70	7.6
200	31	12,385	-52.8		247	35.4	31	12,149	-51.2		242	54.4	30	12,237	-52.2		309	45.7	31	12,318	-53.7		302	27.2	30	12,427	-54.3		60	6.2
175	31	13,236	-58.5		246	33.8	31	13,014	-52.5		239	50.5	30	13,095	-55.1		309	40.4	31	13,169	-57.4		303	25.3	30	13,269	-61.5		48	7.6
150	31	14,191	-64.3		242	29.0	31	14,007	-54.2		240	41.8	30	14,073	-57.6		313	30.7	31	14,134	-61.1		313	18.8	30	14,206	-69.3		42	8.2
125	31	15,292	-68.6		250	21.6	31	15,173	-55.3		238	28.0	30	15,218	-59.4		315	20.6	31	15,259	-63.2		324	10.5	30	15,273	-76.7		57	11.7
100	31	16,629	-66.7		227	9.3	31	16,592	-56.0		232	15.9	30	16,614	-58.9		319	12.0	31	16,631	-62.7		357	4.3	27	16,552	-75.8		81	17.9
80	31	17,997	-61.4		153	5.6	30	18,012	-55.1		218	6.6	30	18,017	-57.7		352	6.2	31	18,014	-60.5		69	10.7	27	17,863	-69.6		87	28.4
70	31	18,837	-58.8		109	7.8	30	18,869	-53.7		156	3.3	30	18,868	-56.5		44	6.8	31	18,857	-59.0		78	14.6	26	18,666	-66.3		89	35.6
60	31	19,802	-56.7		92	10.3	30	19,860	-53.0		113	5.1	30	19,844	-54.9		69	10.3	31	19,821	-57.0		84	17.9	26	19,609	-63.0		87	44.3
50	31	20,963	-54.5		91	14.0	30	21,039	-51.9		106	7.6	30	21,016	-52.7		78	12.2	31	20,982	-54.5		88	20.4	26	20,743	-58.9		89	48.4
40	31	22,398	-52.4		93	16.9	30	22,491	-50.1		96	9.5	30	22,464	-50.6		81	14.2	31	22,420	-52.2		90	22.2	24	22,154	-55.7		87	46.8
30	31	24,268	-49.6		91	19.2	29	24,380	-47.6		89	10.9	28	24,350	-47.8		81	15.0	30	24,301	-48.4		87	22.5	24	23,997	-52.7		88	39.6
25	30	25,467	-47.7		90	20.2	29	25,591	-45.5		86	14.4	27	25,557	-45.9		87	16.5	30	25,506	-46.6		91	25.1	22	25,185	-50.3		87	35.8
20	30	26,947	-45.4		88	21.2	29	27,087	-43.1		93	16.1	25	27,049	-43.3		87	19.2	27	26,998	-44.3		86	28.0	21	26,652	-47.3		86	28.0
15	29	28,878	-42.6		85	25.5	28	29,037	-39.8		87	21.0	16	29,001	-39.9				12	28,955	-40.7				19	28,568	-44.5		80	25.3
10	28	31,637	-37.4		91	29.3	28	31,236	-35.1		92	24.1													18	31,309	-41.0		89	31.3
7	27	34,136	-32.7		91	31.1	23	34,355	-31.0		92	25.1													7	33,759	-39.7			
5	26	36,513	-29.0				18	36,748	-26.7																					

Standard pressure surface (mb)	HILO, HAWAII 1015 MB						HUNTINGTON, W. VA. 989 MB						INTERNAT. FALLS, MINN. * 972 MB						JACKSON, MISS. 1005 MB						JACKSONVILLE, FLA. 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	11	21.5	89	246	5.1	31	246	17.1	93	183	1.9	31	360	15.0	90	196	2.1	31	94	22.6	93	219	1.7	31	5	23.6	92	245	3.1
1000	31	144	22.5	81	265	3.3	31	147					31	114					31	142	22.8	91	228	2.5	31	158	23.8	85	234	5.6
950	31	589	19.4	84	66	4.5	31	589	19.5	72	256	4.7	31	551	17.8	75	224	5.8	31	586	22.5	79	253	8.5	31	604	22.6	74	237	13.0
900	31	1,054	16.2	87	74	8.2	31	1,054	17.1	67	285	6.6	31	1,013	16.2	64	254	7.6	31	1,062	20.3	74	249	9.5	31	1,078	19.9	70	254	7.4
850	31	1,539	13.3	88	77	8.4	31	1,540	14.0	69	296	8.2	31	1,497	13.3	64	265	8.9	31	1,554	17.5	70	250	7.8	31	1,570	16.9	68	256	7.2
800	31	2,047	10.5	83	82	9.1	31	2,050	11.0	65	294	8.5	31	2,004	10.3	62	282	9.9	31	2,071	14.6	64	250	5.8	31	2,084	13.6	64	258	7.2
750	31	2,585	8.4	63	88	11.5	31	2,584	8.0	62	288	9.7	31	2,538	7.5	56	290	12.4	31	2,608	11.3	61	263	4.5	31	2,623	10.4	60	260	8.5
700	31	3,153	6.6	41	92	9.3	31	3,154	5.3	54	294	9.5	31	3,104	4.3	50	289	13.8	31	3,188	7.9	56	271	4.9	31	3,198	7.3	53	278	10.1
650	31	3,756	3.9		103	8.0	31	3,752	2.4	44	296	11.1	31	3,696	1.1	42	293	14.4	31	3,790	4.2	56	275	5.1	31	3,799	3.8	52	282	10.3
600	31	4,407	1.3		92	7.2	31	4,401	- 1.0	39	300	11.9	31	4,343	- 2.5	45	289	17.7	31	4,443	.1	59	287	5.6	31	4,452	.1	53	284	11.5
550	31	5,099	- 2.3		86	4.7	31	5,078	- 4.9	35	310	12.4	31	5,021	- 6.7	43	290	20.8	31	5,125	- 3.7	57	282	5.8	31	5,138	- 4.0	53	283	11.9
500	31	5,854	- 7.0		58	1.6	31	5,834	- 9.3	34	311	14.6	31	5,767	-11.3	39	282	20.8	30	5,885	- 7.7	47	297	4.1	31	5,893	- 8.2	48	278	10.9
450	31	6,664	-12.5		265	5.1	31	6,633	-14.6		315	14.6	31	6,562	-16.6	32	280	24.7	30	6,691	-12.5	43	328	5.4	31	6,698	-13.0	42	281	9.9
400	31	7,557	-19.1		263	9.9	31	7,524	-20.7		314	17.1	31	7,443	-22.7	28	282	27.8	30	7,590	-18.4	39	343	7.8	31	7,594	-18.8	38	290	10.5
350	30	8,537	-26.4		264	16.7	31	8,498	-27.5		314	19.4	31	8,409	-29.6	27	288	28.8	30	8,574	-25.0		346	9.5	31	8,576	-25.6	35	301	9.1
300	30	9,632	-34.9		267	24.9	31	9,590	-35.4		316	24.3	31	9,491	-37.5	27	285	35.8	30	9,677	-33.0		351	11.7	31	9,676	-33.8	34	303	8.5
250	30	10,878	-44.8		270	32.6	31	10,835	-44.7		315	29.9	31	10,727	-46.0		281	41.4	30	10,933	-43.0		351	14.4	31	10,927	-43.8		313	8.9
200	30	12,334	-56.0		265	37.1	31	12,298	-53.3		314	32.8	31	12,187	-52.4		285	47.2	30	12,401	-54.0		3	17.9	31	12,390	-55.1		332	11.5
175	30	13,173	-61.4		262	38.7	31	13,152	-56.3		315	30.1	31	13,047	-54.2		287	43.9	30	13,248	-59.9		7	20.6	31	13,231	-61.0		346	14.2
150	30	14,117	-66.5		257	32.6	31	14,123	-59.8		322	22.5	31	14,032	-56.0		285	35.8	30	14,199	-65.0		21	17.3	31	14,177	-65.7		2	14.2
125	30	15,207	-71.4		245	19.8	31	15,254	-62.2		327	14.0	31	15,186	-57.6		285	25.6	30	15,301	-67.7		26	18.3	31	15,277	-67.6		33	10.9
100	30	16,524	-70.7		146	8.0	31	16,633	-61.6		355	7.4	31	16,596	-57.4		291	15.3	30	16,644	-67.2		53	15.5	31	16,626	-65.7		66	13.0
80	29	17,861	-66.0		93	21.8	30	18,023	-59.4		45	7.4	31	18,012	-55.7		300	6.8	29	18,004	-62.7		71	16.9	30	17,989	-62.2		83	16.9
70	29	18,674	-63.8		93	28.8	30	18,863	-57.9		68	11.3	31	18,870	-54.7		335	3.1	27	18,828	-60.5		79	19.2	28	18,829	-60.2		82	21.2
60	29	19,624	-61.2		89	34.2	30	19,838	-56.0		84	15.0	31	19,853	-53.4		55	3.9	27	19,794	-58.6		86	20.8	28	19,786	-57.5		88	23.9
50	29	20,761	-58.9		88	38.7	30	21,005	-53.5		86	16.9	31	21,029	-52.3		80	6.2	27	20,948	-55.5		92	24.7	28	20,945	-54.9		94	28.8
40	29	22,169	-56.3		90	41.6	30	22,448	-51.1		89	18.5	30	22,477	-50.7		82	9.9	26	22,376	-53.2		85	26.0	28	22,379	-52.3		96	29.7
30	29	24,008	-53.2		90	42.4	29	24,331	-48.1		86	19.6	26	24,365	-47.7		89	10.1	26	24,239	-50.7		89	28.2	27	24,256	-48.5		92	29.3
25	29	25,188	-50.8		90	42.7	27	25,536	-46.0		83	21.6	26	25,574	-45.8		94	10.7	26	25,432	-48.8		88	31.3	25	25,458	-47.0		89	30.7
20	29	26,649	-48.1		91	39.2	24	27,028	-43.4		86	25.5	24	27,066	-43.2		95	14.0	22	26,898	-46.5		88	35.2	23	26,942	-44.7		85	35.4
15	28	28,557	-44.5		92	40.0	14	28,974	-41.5				21	29,018	-40.0		96	16.3	15	28,802	-44.5		85	39.1	23	28,882	-40.5		86	39.8
10	19	31,291	-41.7		90	36.3							17	31,804	-35.7		94	20.0	6	31,576	-40.8				23	31,671	-35.7		89	45.5
7	9	33,687	-39.7										8	34,247	-32.4										15	34,180	-30.9		95	46.8
5																									5	36,600	-26.8			

Standard pressure surface (mb)	JOHNSTON IS., PACIFIC AREA 1014 MB						KING SALMON, ALASKA 1013 MB						KOTZEBUE, ALASKA 1010 MB						LAKE CHARLES, LA. 1016 MB						LANDER, WYO. 830 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	3	26.3	84	92	12.6	31	15	9.4	91	200	6.4	31	5	9.1	91	277	8.4	31	5	24.3	93	118	.6	31	1,696	14.6	53	263	2.9
1000	30	127	25.0	83	89	10.8	31	119	9.7	91	212	6.2	31	86			275	8.4	31	144	25.8	86	198	4.8	31	88				
950	30	577	21.1	83	88	18.1	31	563	9.4	84	240	6.4	31	504	7.5	79	263	7.0	31	596	23.5	81	210	11.3	31	528				
900	30	1,043	17.7	81	90	19.2	31	993	7.8	81	257	5.6	31	954	5.4	75	257	6.8	31	1,068	20.7	75	202	11.1	31	1,000				
850	30	1,531	14.9	79	89	16.5	31	1,463	5.5	80	273	5.1	31	1,420	3.3	71	245	7.2	31	1,561	18.0	67	199	9.3	31	1,496				
800	30	2,043	12.4	67	90	15.2	31	1,958	3.3	77	286	5.6	31	1,910	1.0	69	242	9.3	31	2,078	15.1	62	200	6.0	31	2,013	17.1	41	278	2.5
750	30	2,580	9.7	60	90	12.4	31	2,480	.9	72	283	5.4	31	2,420	- 1.4	64	251	9.9	31	2,620	12.0	59	199	3.1	31	2,557	14.4	40	227	2.7
700	30	3,153	7.3	46	89	9.1	31	3,032	- 2.0	67	285	6.8	31	2,974	- 4.3	63	250	10.9	31	3,198	8.4	58	191	1.2	31	3,140	10.7	39	251	5.2
650	30	3,752	4.9		81	6.4	31	3,614	- 5.0	58	281	8.2	31	3,545	- 7.5	59	251	12.4	31	3,805	4.5	60	206	.8	31	3,744	6.3	39	254	10.3
600	30	4,409	1.5		85	3.7	31	4,244	- 8.4	54	284	9.5	31	4,175	-11.0	55	255	12.4	31	4,456	.6	57	180	.6	31	4,404	1.4	39	253	19.4
550	30	5,099	- 2.6		11	.8	31	4,909	-12.6	49	292	7.4	31	4,829	-15.0	46	259	14.2	31	5,148	- 3.2	51	27	1.2	31	5,089	- 4.0	39	254	24.7
500	30	5,854	- 7.4		279	1.9	31	5,636	-17.0	44	285	13.0	31	5,553	-19.6	42	261	15.2	31	5,900	- 7.5	47	3	1.9	31	5,843	- 9.5	37	253	27.0
450	30	6,662	-13.0		263	4.1	31	6,415	-22.6	40	290	13.8	31	6,316	-25.1	37	264	18.7	31	6,711	-12.4	41	11	4.9	31	6,645	-15.1		249	26.8
400	30	7,554	-19.0		265	9.3	31	7,273	-28.8	39	295	15.9	31	7,172	-31.4	38	264	20.0	31	7,606	-17.7	37	26	6.0	31	7,530	-21.5	35	250	32.3
350	30	8,534	-26.1		262	15.5	31	8,215	-35.8		305	16.7	31	8,104	-38.3		268	24.1	31	8,592	-24.5	36	26	9.3	31	8,501	-28.3		245	40.0
300	30	9,631	-34.5		261	20.6	31	9,269	-43.3		301	22.5	31	9,147	-45.9		273	27.2	31	9,696	-32.7		26	10.1	31	9,589	-36.2		244	46.8
250	30	10,878	-44.5		266	28.6	31	10,477	-50.1		298	24.9	31	10,347	-49.7		273	26.2	31	10,954	-42.6		25	13.4	31	10,832	-44.3		245	59.1
200	30	12,333	-55.9		266	36.9	31	11,926	-50.8		295	22.3	31	11,814	-46.5		279	19.4	31	12,423	-54.1		25	18.1	31	12,298	-52.6		243	62.2
175	30	13,170	-62.2		262	38.7	31	12,798	-49.5		290	18.3	31	12,702	-45.7		277	15.7	31	13,267	-60.0		30	18.5	31	13,153	-56.8		246	59.8
150	30	14,108	-68.6		261	38.3	31	13,808	-49.4		288	15.0	31	13,728	-46.0		277	12.6	31	14,216	-65.3		40	19.2	31	14,119	-61.3		245	51.5
125	30	15,184	-73.6		256	26.2	31	15,002	-49.4		291	10.9	31	14,940	-46.3		283	9.5	31	15,314	-69.1		45	20.4	31	15,242	-63.6		247	35.2
100	30	16,488	-72.4		199	4.1	30	16,466	-49.6		297	6.2	31	16,424	-45.7		290	6.4	31	16,648	-68.3		71	18.8	31	16,610	-63.5		230	15.7
80	30	17,815	-68.1		95	22.7	30	17,928	-49.1		314	2.9	31	17,910	-45.6		306	2.1	31	18,002	-63.6		79	18.5	31	17,998	-58.0		176	5.1
70	30	18,621	-65.5		89	31.3	29	18,807	-48.8		337	2.1	31	18,795	-45.4		341	1.0	31	18,834	-60.7		80	22.0	31	18,844	-56.5		122	5.4
60	29	19,565	-62.8		89	38.9	29	19,820	-48.5		54	2.3	31	19,829	-45.2		50	2.5	31	19,793	-58.0		85	24.7	31	19,824	-55.2		97	8.9
50	29	20,699	-59.4		88	42.0	29	21,020	-48.2		59	4.9	31	21,046	-45.0		68	4.9	31	20,948	-55.6		88	25.6	30	20,993	-53.6		93	12.4
40	29	22,107	-56.8		88	42.9	26	22,495	-47.4		75	7.6	31	22,540	-44.3		71	6.2	31	22,379	-52.8		89	28.0	30	22,435	-51.3		86	15.7
30	29	23,943	-53.8		89	41.4	26	24,403	-46.0		82	10.3	31	24,472	-43.1		80	9.7	29	24,247	-49.8		89	30.7	30	24,316	-48.5		89	17.3
25	29	25,122	-51.3		90	38.9	25	25,621	-44.4		78	12.8	29	25,706	-41.9		72	12.2	29	25,446	-47.7		87	35.2	30	25,520	-46.9		88	18.8
20	28	26,580	-48.8		89	35.9	22	27,124	-42.3		86	13.6	25	27,221	-40.0		82	15.3	29	26,926	-45.5		85	38.3	26	27,008	-44.2		89	19.4
15	27	28,488	-45.1		89	34.4	17	29,075	-39.8		83	16.1	23	29,202	-37.1		80	15.5	24	28,869	-41.3		88	44.1	25	28,953	-41.4		90	23.5
10	22	31,206	-42.0		89	35.8							13	32,035	-33.0		83	18.8	12	31,660	-35.5				14	31,774	-35.1		85	26.4
7	9	33,668	-38.7																						5	34,292	-31.2			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

LAS VEGAS, NEV. 934 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	660	26.3	17	213	8.7
1000	31	51				
950	31	505				
900	31	991	28.7	17	224	11.9
850	31	1,495	25.7		228	13.2
800	31	2,023	21.7	20	213	14.0
750	31	2,579	17.2	23	199	15.0
700	31	3,161	12.5	26	196	15.7
650	31	3,776	7.8	29	195	16.1
600	31	4,431	2.8	33	202	18.3
550	31	5,116	-2.2	33	209	18.8
500	31	5,879	-7.4		214	17.9
450	31	6,687	-12.9		224	17.9
400	31	7,580	-19.1		230	21.4
350	31	8,562	-25.6		231	25.8
300	31	9,663	-33.2		233	32.4
250	31	10,920	-42.4		233	34.6
200	31	12,396	-52.5		232	35.6
175	30	13,250	-58.2		231	34.6
150	30	14,208	-64.0		228	28.0
125	30	15,310	-68.6		229	18.1
100	30	16,647	-67.6		205	8.4
80	30	18,008	-62.1		136	6.2
70	29	18,845	-59.7		105	11.1
60	28	19,806	-57.3		95	14.4
50	27	20,965	-55.5		91	16.9
40	26	22,396	-52.9		89	20.8
30	24	24,267	-49.6		89	22.9
25	18	25,463	-48.0		86	27.4
20	11	26,946	-46.1			

LIHUE, HAWAII * 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	36	24.2	77	52	10.1
1000	31	154	23.3	78	59	12.8
950	31	599	19.6	85	65	16.7
900	31	1,064	16.3	84	71	16.5
850	31	1,549	13.3	83	73	15.3
800	31	2,058	11.3	60	79	14.2
750	31	2,593	9.1	39	83	11.5
700	31	3,164	6.4	30	85	8.0
650	31	3,768	4.2	16	76	6.4
600	30	4,417	1.5	14	64	3.3
550	30	5,107	-2.9	16	2	.8
500	30	5,860	-8.1	19	259	3.5
450	30	6,663	-13.8	19	269	6.0
400	30	7,555	-19.9	16	263	10.9
350	30	8,530	-27.5	16	266	14.2
300	30	9,619	-36.3	18	262	21.4
250	30	10,858	-46.1		264	31.1
200	30	12,306	-57.0		263	41.0
175	30	13,141	-61.9		262	43.5
150	29	14,087	-65.0		260	38.5
125	28	15,190	-67.7		251	21.2
100	27	16,529	-67.8		154	5.8
80	27	17,883	-64.8		92	18.5
70	27	18,700	-62.7		89	23.5
60	27	19,654	-60.9		87	28.8
50	27	20,793	-58.7		88	34.8
40	27	22,203	-56.1		87	38.3
30	25	24,044	-53.8		90	41.2
25	25	25,220	-52.0		89	42.0
20	25	26,675	-49.2		90	42.2
15	25	28,580	-45.6		90	38.1
10	23	31,313	-41.4		87	40.6
7	22	33,758	-37.6		90	50.9
5	18	36,087	-33.7		94	60.8
4	9	37,676	-30.8			

LITTLE ROCK, ARK. 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	22.7	89	215	1.9
1000	31	136	22.9	84	212	3.1
950	31	585	23.4	72	232	10.1
900	31	1,057	20.[illegible]	69	235	9.5
850	31	1,550	17.8	68	252	8.0
800	31	2,067	14.8	64	270	7.4
750	31	2,606	11.4	62	281	6.4
700	31	3,185	7.9	61	299	6.0
650	31	3,789	4.5	55	316	5.8
600	31	4,441	.4	57	331	6.0
550	31	5,130	-3.5	49	325	4.7
500	31	5,884	-7.1	34	336	5.6
450	31	6,694	-12.1	31	352	8.2
400	31	7,591	-17.9	29	351	11.3
350	31	8,576	-24.6		349	13.0
300	31	9,680	-32.8		347	16.3
250	31	10,938	-42.6		351	19.2
200	31	12,408	-53.9		358	22.7
175	31	13,255	-59.6		4	24.7
150	31	14,207	-64.7		12	21.4
125	31	15,311	-68.1		18	17.1
100	31	16,652	-66.9		38	12.0
80	31	18,014	-63.1		57	12.2
70	31	18,848	-60.8		71	14.6
60	31	19,805	-58.3		80	17.5
50	31	20,961	-55.4		92	19.8
40	30	22,394	-52.8		87	21.2
30	30	24,263	-49.6		86	22.0
25	27	25,463	-47.7		83	25.1
20	25	26,940	-45.3		88	29.9
15	22	28,876	-41.8		86	30.7
10	13	31,640	-37.[illegible]			

MCGRATH, ALASKA 1000 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	103	11.6	86	228	3.5
1000	31	100			232	4.7
950	31	528	11.3	72	234	6.0
900	31	981	8.4	73	231	5.4
850	31	1,451	5.7	74	231	6.0
800	31	1,945	3.2	70	227	7.2
750	31	2,464	.3	71	228	7.2
700	31	3,017	-2.7	68	238	6.8
650	31	3,598	-6.0	64	251	7.2
600	31	4,226	-9.5	55	262	8.4
550	31	4,887	-13.5	50	265	8.0
500	31	5,613	-18.2	46	272	8.9
450	31	6,380	-23.8	42	276	8.0
400	31	7,243	-30.2	41	277	8.5
350	31	8,179	-37.3	43	281	10.7
300	31	9,227	-44.7		290	12.2
250	31	10,429	-50.7		299	16.5
200	31	11,879	-49.3		294	15.5
175	31	12,759	-47.7		288	13.2
150	31	13,776	-47.7		291	11.3
125	31	14,981	-47.4		291	8.7
100	31	16,456	-47.2		299	3.7
80	31	17,932	-47.0		357	1.4
70	31	18,814	-46.7		17	1.6
60	31	19,839	-46.5		40	2.3
50	30	21,047	-46.1		65	3.5
40	30	22,532	-45.4		70	6.4
30	30	24,455	-44.2		72	8.9
25	30	25,681	-42.8		76	12.2
20	28	27,192	-40.9		81	14.6
15	22	29,167	-38.5		88	17.1

MAJURO, MARSHALL IS. 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	26.9	84	78	3.5
1000	31	94	26.3	82	80	4.5
950	31	540	23.6	80	92	6.2
900	31	1,019	20.7	79	95	8.4
850	31	1,513	17.9	77	93	9.7
800	31	2,031	15.2	77	88	11.3
750	31	2,574	12.5	75	89	13.8
700	31	3,155	9.6	72	86	13.2
650	31	3,768	6.1	71	90	13.6
600	31	4,421	2.3	72	94	15.2
550	30	5,114	-1.3	67	92	14.0
500	29	5,875	-5.4	61	95	14.0
450	29	6,692	-10.3	52	98	12.4
400	29	7,595	-16.0	50	103	10.5
350	29	8,587	-22.9	41	102	9.9
300	29	9,698	-31.4	39	106	10.5
250	29	10,961	-41.8		116	8.3
200	29	12,433	-54.2		99	7.0
175	29	13,276	-61.3		94	4.7
150	29	14,215	-69.0		133	6.4
125	29	15,286	-75.6		179	5.4
100	27	16,570	-76.8		92	1.7
80	26	17,869	-71.7		94	2[illegible].5
70	26	18,663	-67.3		88	35.0
60	26	19,601	-63.2		88	47.0
50	26	20,735	-58.6		88	51.5
40	26	22,152	-53.8		87	45.9
30	26	24,016	-50.2		82	17.1
25	26	25,209	-48.9		75	8.7
20	24	26,683	-46.9		118	1.2
15	19	28,605	-44.5		147	.8
10	12	31,349	-41.7			

MEDFORD, OREG. 970 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	401	12.5	78	290	1.0
1000	31	140				
950	31	577	14.0	67	294	3.1
900	31	1,029	12.4	67	312	3.9
850	31	1,507	10.5	65	18	1.2
800	31	2,011	9.2	52	233	2.1
750	31	2,540	6.5	49	234	8.2
700	31	3,108	3.8	36	230	12.6
650	31	3,701	.6		236	14.4
600	31	4,345	-2.8		238	19.4
550	31	5,022	-7.2		240	22.5
500	31	5,766	-12.2		240	25.3
450	31	6,552	-18.1		242	30.3
400	31	7,429	-24.5		243	35.4
350	31	8,388	-31.7		239	40.4
300	31	9,461	-39.6		239	44.1
250	31	10,693	-47.4		240	49.2
200	31	12,151	-52.1		238	54.8
175	31	13,014	-53.0		238	53.0
150	30	14,001	-55.1		236	43.1
125	30	15,161	-56.5		239	32.6
100	29	16,573	-56.4		231	21.6
80	28	17,979	-56.3		220	7.6
70	28	18,830	-55.5		167	3.1
60	28	19,812	-54.4		119	5.8
50	28	20,983	-53.2		98	8.9
40	27	22,423	-51.7		88	12.6
30	27	24,298	-49.2		91	14.4
25	27	25,499	-47.2		89	15.7
20	26	26,984	-44.7		88	17.7
15	24	28,915	-41.9		91	22.0
10	24	31,689	-37.0		91	23.9
7	22	34,190	-32.6		86	25.8
5	18	36,585	-28.2			
4						

MIAMI, FLA. 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	25.7	86	58	1.9
1000	31	157	26.1	78	100	3.7
950	31	607	22.9	77	128	7.2
900	31	1,079	20.0	72	133	7.8
850	31	1,571	17.0	67	135	6.6
800	31	2,087	14.2	57	137	5.6
750	31	2,624	11.2	48	144	4.3
700	31	3,204	7.8	45	165	3.3
650	31	3,804	4.3	40	176	3.9
600	31	4,459	.1	40	179	2.9
550	31	5,140	-4.2	41	175	2.3
500	31	5,899	-8.6	37	140	1.7
450	31	6,700	-13.4	38	92	2.5
400	31	7,599	-19.2	34	71	3.5
350	31	8,578	-26.4	30	56	5.8
300	31	9,674	-34.7		50	7.2
250	31	10,922	-44.5		46	11.7
200	31	12,379	-56.1		50	15.7
175	31	13,216	-62.0		48	16.3
150	30	14,159	-67.0		43	15.2
125	29	15,254	-68.3		58	14.8
100	29	16,594	-67.5		83	15.2
80	29	17,947	-64.8		78	19.2
70	29	18,771	-62.3		80	26.6
60	29	19,726	-59.5		87	32.1
50	29	20,875	-56.8		94	35.2
40	27	22,302	-53.8		99	35.9
30	26	24,167	-49.4		92	36.9
25	24	25,361	-47.3		86	37.7
20	24	26,847	-44.8		85	37.1
15	21	28,782	-42.0		85	39.4
10	19	31,567	-35.5		90	52.1
7	7	34,057	-29.6			

MIDLAND, TEXAS* 915 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	874	22.3	66	158	5.1
1000	29	92				
950	29	544				
900	29	1,017	22.9	59	169	11.9
850	29	1,514	20.7	58	186	20.8
800	29	2,037	18.9	48	182	9.5
750	29	2,589	15.4	46	157	4.5
700	29	3,170	11.4	49	107	3.7
650	29	3,782	7.2	50	99	3.7
600	29	4,439	2.8	50	92	3.5
550	29	5,132	-2.0	54	91	4.5
500	29	5,889	-6.7	53	71	3.9
450	29	6,701	-11.6	43	56	2.9
400	29	7,599	-17.1	35	39	2.9
350	29	8,587	-23.7	28	45	2.9
300	29	9,695	-32.0	28	37	5.2
250	29	10,957	-42.0		31	6.2
200	29	12,430	-53.7		36	8.4
175	29	13,276	-59.8		45	9.7
150	29	14,225	-65.9		51	10.7
125	29	15,318	-70.9		57	10.9
100	29	16,637	-70.2		65	14.4
80	29	17,977	-65.6		83	17.9
70	29	18,806	-62.3		88	18.8
60	29	19,752	-59.8		91	22.5
50	28	20,899	-57.2		91	24.5
40	28	22,318	-54.5		92	26.0
30	27	24,172	-51.4		90	29.7
25	26	25,362	-49.1		89	31.5
20	26	26,834	-46.3		87	33.8
15	23	28,760	-44.0		87	38.5
10	20	31,514	-38.5		89	42.6
7	19	34,000	-34.3		94	42.6
5	16	36,363	-30.8		91	43.7
4	9	37,931	-27.6			

MONTGOMERY, ALA. 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	61	22.0	93	179	1.4
1000	31	150	22.7	89	214	2.7
950	31	602	22.7	76	259	6.2
900	31	1,069	20.0	73	259	7.2
850	31	1,561	16.9	72	264	8.0
800	31	2,076	14.1	61	271	8.9
750	31	2,621	10.9	57	276	9.5
700	31	3,191	7.5	56	277	10.9
650	31	3,798	3.8	56	280	11.5
600	31	4,444	-.2	58	283	11.5
550	31	5,136	-3.8	52	289	11.9
500	31	5,884	-7.9	44	285	12.0
450	31	6,695	-12.8	39	284	12.0
400	31	7,586	-18.4	35	306	11.3
350	31	8,569	-25.3	32	316	10.9
300	31	9,670	-33.5		320	11.5
250	31	10,923	-43.4		333	14.2
200	30	12,385	-55.0		336	16.5
175	30	13,228	-60.5		338	17.3
150	30	14,178	-65.1		359	15.5
125	30	15,282	-67.4		24	14.4
100	30	16,628	-66.1		56	13.2
80	30	17,994	-62.2		73	14.4
70	30	18,829	-60.3		80	17.5
60	30	19,789	-58.0		85	20.0
50	30	20,946	-55.1		90	24.3
40	29	22,379	-52.3		95	24.1
30	27	24,251	-49.8		91	25.3
25	25	25,449	-47.9		87	28.6
20	22	26,920	-45.2		87	30.3
15	16	28,841	-42.6		82	37.9
10	8	31,584	-37.6			

NANTUCKET, MASS. 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	14	18.6	91	244	3.3
1000	31	124	19.2	82	250	5.6
950	31	561	18.9	64	265	8.4
900	31	1,030	16.4	63	259	8.5
850	31	1,515	13.5	62	257	10.7
800	31	2,023	10.6	59	253	11.3
750	31	2,553	7.7	54	249	12.4
700	31	3,125	4.7	48	249	14.0
650	31	3,717	1.4	45	252	15.7
600	31	4,367	-2.1	38	251	18.3
550	31	5,046	-5.8	31	246	19.0
500	31	5,795	-10.7	30	244	20.4
450	31	6,591	-15.7		240	22.2
400	31	7,477	-22.0		233	25.5
350	31	8,445	-29.1		237	28.0
300	31	9,528	-37.1		236	33.2
250	31	10,764	-45.9		234	36.1
200	30	12,226	-53.6		238	32.4
175	30	13,079	-55.7		242	24.3
150	30	14,058	-57.4		251	19.0
125	30	15,203	-59.4		253	13.0
100	30	16,600	-59.0		276	3.9
80	30	18,003	-57.2		83	3.1
70	30	18,849	-56.1		96	6.2
60	30	19,832	-54.9		91	8.9
50	30	21,001	-53.3		88	14.0
40	30	22,446	-50.6		88	16.5
30	29	24,333	-47.6		90	18.7
25	28	25,542	-45.8		85	20.6
20	28	27,036	-43.0		82	22.9
15	26	28,786	-39.2		90	26.4
10	26	31,802	-32.6		94	27.6
7	15	34,331	-29.1		86	29.3
5	6	36,774	-23.8			

NASHVILLE, TENN. 996 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	177	20.4	93	209	1.4
1000	31	138				
950	31	583	21.2	73	247	4.9
900	31	1,051	18.6	71	261	6.6
850	31	1,540	15.6	72	269	8.2
800	31	2,052	12.5	66	274	9.9
750	31	2,592	9.6	59	286	10.7
700	31	3,162	6.7	51	292	12.0
650	31	3,766	3.4	49	300	12.4
600	31	4,412	-.2	42	309	12.6
550	31	5,099	-3.8	37	317	13.6
500	31	5,850	-8.1	33	317	13.6
450	31	6,657	-13.4	31	322	15.5
400	31	7,547	-19.4		326	17.7
350	31	8,526	-26.0		319	18.7
300	31	9,623	-34.0		315	20.2
250	31	10,875	-43.5		319	22.3
200	31	12,340	-54.1		325	27.0
175	31	13,187	-58.9		329	27.4
150	31	14,145	-62.7		340	22.9
125	31	15,262	-65.2		346	14.4
100	31	16,621	-64.5		29	9.5
80	31	17,992	-62.1		62	11.1
70	31	18,827	-59.2		71	16.1
60	31	19,795	-57.3		84	18.3
50	30	20,954	-54.9		87	19.8
40	30	22,389	-52.4		88	20.2
30	30	24,259	-49.6		89	23.1
25	30	25,458	-47.8		85	23.9
20	28	26,933	-45.2		86	27.6
15	28	28,869	-41.8		87	29.0
10	28	31,644	-36.9		85	33.4
7	23	34,115	-34.4		86	38.1
5	14	36,461	-31.8			

N. Y. INT. AP. IDLEWILD 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	21.3	75	296	4.1
1000	31	130	21.0	69	306	5.4
950	31	576	19.4	59	309	6.8
900	31	1,037	16.4	58	300	8.0
850	31	1,521	13.2	58	296	8.4
800	31	2,029	10.5	55	287	9.7
750	31	2,566	7.4	54	279	11.5
700	31	3,130	4.4	49	278	13.0
650	31	3,729	1.4	39	276	14.6
600	31	4,370	-2.2	36	274	14.4
550	31	5,054	-6.3		267	15.3
500	31	5,797	-11.0		267	16.1
450	31	6,597	-16.4		264	16.5
400	31	7,475	-22.4		263	17.5
350	31	8,442	-29.3		254	21.6
300	31	9,525	-37.2		253	24.5
250	31	10,763	-45.6		253	29.9
200	31	12,225	-52.2		253	26.0
175	31	13,085	-54.4		260	23.1
150	31	14,068	-56.7		270	18.3
125	31	15,218	-58.8		272	11.7
100	31	16,617	-58.5		286	5.2
80	31	18,024	-57.2		62	2.9
70	31	18,877	-56.1		81	6.2
60	31	19,853	-54.7		88	10.7
50	31	21,024	-52.9		91	13.6
40	31	22,471	-50.5		95	15.9
30	30	24,356	-48.0		89	17.5
25	27	25,565	-46.3		89	20.2
20	21	27,057	-43.3		88	21.2
15	9	29,011	-40.2			

NOME, ALASKA 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	7.0	90	285	4.7
1000	31	93			270	5.2
950	31	515	7.6	75	265	4.1
900	31	961	6.0	70	250	5.4
850	31	1,428	4.3	66	256	7.4
800	31	1,920	2.2	60	255	9.7
750	31	2,438	-.2	53	254	9.1
700	31	2,990	-2.7	50	254	8.4
650	31	3,569	-6.0	52	257	10.7
600	31	4,197	-9.5	50	260	12.6
550	31	4,859	-13.8	49	263	14.4
500	31	5,584	-18.1	42	265	14.0
450	31	6,356	-23.6	46	270	16.1
400	31	7,214	-29.7	46	274	16.7
350	31	8,152	-36.8		274	19.0
300	31	9,200	-44.7		273	23.1
250	31	10,403	-50.5		275	26.8
200	31	11,858	-48.4		277	21.4
175	31	12,740	-47.3		278	15.9
150	31	13,759	-47.3		274	13.6
125	30	14,962	-47.2		281	9.7
100	30	16,439	-47.0		283	6.8
80	30	17,917	-46.4		289	3.5
70	30	18,804	-46.3		288	1.4
60	30	19,828	-46.1		37	.8
50	29	21,044	-45.8		65	3.9
40	29	22,532	-45.1		69	5.6
30	29	24,457	-43.9		79	8.7
25	29	25,684	-42.4		82	10.9
20	27	27,196	-40.8		82	11.9
15	19	29,156	-38.4		85	13.2
10	7	31,930	-34.2			

NORFOLK, VA. 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	9	21.5	85	242	2.3
1000	31	138	22.1	77	271	4.1
950	31	580	20.8	65	311	5.4
900	31	1,050	17.8	64	317	4.3
850	31	1,537	14.6	66	287	5.1
800	31	2,048	11.3	65	270	7.8
750	31	2,580	8.0	63	263	10.9
700	31	3,151	4.9	59	268	12.2
650	31	3,747	1.5	57	268	14.0
600	31	4,394	-2.1	51	272	15.7
550	31	5,073	-5.5	42	271	17.5
500	31	5,823	-9.9	38	269	17.7
450	31	6,624	-15.0	34	268	19.0
400	31	7,511	-21.1	34	266	20.4
350	31	8,484	-27.8		258	23.7
300	31	9,573	-35.6	33	254	26.6
250	31	10,813	-45.2		255	29.0
200	31	12,271	-54.0		275	28.8
175	31	13,121	-57.3		279	25.1
150	31	14,089	-60.0		289	18.3
125	31	15,221	-62.1		296	8.0
100	31	16,602	-61.1		355	1.9
80	31	17,994	-59.4		75	9.1
70	31	18,838	-57.8		84	13.6
60	31	19,808	-56.5		84	15.5
50	31	20,972	-54.2		87	20.0
40	31	22,413	-51.2		88	21.6
30	29	24,298	-47.7		90	23.3
25	26	25,509	-45.1		90	26.6
20	22	27,016	-42.7		88	28.0
15	8	28,942	-39.3			

NORTH PLATTE, NEBR. 916 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	848	19.0	82	113	4.1
1000	31	81				
950	31	527				
900	31	998	20.6	75	127	7.4
850	31	1,494	21.0	59	205	8.0
800	31	2,018	19.1	50	228	11.5
750	31	2,571	16.2	45	244	11.5
700	31	3,154	12.0	47	247	10.5
650	31	3,767	7.2	49	261	10.1
600	31	4,423	2.1	51	267	10.9
550	31	5,113	-3.0	52	279	13.2
500	31	5,867	-8.1	46	281	13.8
450	31	6,675	-13.4	35	283	17.5
400	31	7,565	-18.9	30	287	21.4
350	31	8,547	-25.4		283	26.6
300	31	9,647	-33.4		275	30.5
250	31	10,902	-42.8		273	33.2
200	31	12,373	-52.9		271	37.9
175	31	13,224	-58.3		276	34.6
150	31	14,181	-63.6		278	32.3
125	31	15,289	-66.8		286	21.8
100	31	16,633	-66.3		257	8.5
80	31	18,006	-60.6		91	2.1
70	31	18,849	-58.4		86	7.4
60	31	19,817	-56.3		88	11.9
50	31	20,981	-54.2		88	13.8
40	31	22,422	-51.6		88	15.9
30	30	24,299	-49.3		90	17.5
25	30	25,501	-47.3		90	19.0
20	30	26,986	-44.7		89	21.4
15	28	28,927	-41.4		87	24.7
10	26	31,710	-36.6		90	27.2
7	24	34,210	-33.0		87	32.1
5	21	36,586	-29.4			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1963

Standard pressure surface (mb)	OAKLAND, CALIF.* 1013 MB						OKLAHOMA CITY, OKLA. 968 MB						OLYMPIA, WASH. 1011 MB						OMAHA, NEBR. 966 MB						PEORIA, ILL. 993 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	6	13.8	83	277	4.1	31	392	22.7	84	154	7.4	31	58	11.4	87	201	2.5	31	403	20.6	83	140	5.1	31	200	18.1	88	116	1.6
1000	31	116	13.2	84	262	4.1	31	109					31	148	12.5	80	198	2.9	31	106					31	139				
950	31	555	14.0	59	273	5.8	31	559	24.2	73	184	14.4	31	579	11.0	77	237	1.9	31	551	21.8	70	168	9.5	31	582	20.9	66	234	4.1
900	31	1,009	18.6	28	294	8.0	31	1,034	24.3	59	215	21.2	31	1,029	8.9	76	230	2.5	31	1,023	22.0	56	214	13.2	31	1,049	18.7	64	267	6.2
850	31	1,498	16.8	24	270	5.8	31	1,533	21.3	54	218	16.3	31	1,501	7.0	71	229	4.7	31	1,519	19.7	54	240	12.2	31	1,538	16.0	62	279	7.0
800	31	2,012	15.0	19	239	6.0	31	2,056	17.6	55	230	9.7	31	1,998	4.9	60	234	5.1	31	2,039	16.7	52	258	10.9	31	2,052	13.0	59	282	8.7
750	31	2,550	12.0	17	234	6.8	31	2,603	14.0	53	242	6.2	31	2,520	2.8	50	239	7.8	31	2,580	13.2	52	277	9.9	31	2,589	9.8	55	293	9.7
700	31	3,129	8.8	20	240	8.7	31	3,184	10.0	50	251	4.7	31	3,078	- .2	48	230	10.7	31	3,163	9.3	52	289	10.3	31	3,163	7.2	45	302	10.3
650	31	3,732	5.1	22	237	11.1	31	3,793	5.9	49	242	1.9	31	3,661	- 3.4	45	225	11.7	31	3,766	5.4	48	292	12.2	31	3,766	4.1	39	307	12.4
600	31	4,385	1.2	17	231	14.8	31	4,446	1.6	48	169	1.7	31	4,297	- 6.9	38	226	15.2	31	4,424	1.1	46	298	13.0	30	4,417	.2		305	14.4
550	31	5,071	- 3.3	15	236	16.5	31	5,136	- 2.7	41	67	1.9	31	4,962	-11.1	36	228	16.7	31	5,108	- 3.2	36	303	14.4	30	5,103	- 3.9		306	16.7
500	31	5,827	- 8.4	14	243	19.0	31	5,893	- 6.5	33	15	2.3	31	5,696	-15.8	34	226	19.2	31	5,867	- 7.6		304	15.5	30	5,856	- 8.3		309	17.9
450	31	6,632	-14.3	16	243	23.3	31	6,706	-11.4	30	329	5.1	31	6,471	-21.6		222	22.7	31	6,673	-12.8		302	16.3	30	6,658	-13.4		320	19.2
400	31	7,519	-21.1	17	242	25.8	31	7,604	-17.1		336	6.8	31	7,339	-28.0		222	25.1	31	7,571	-18.7		297	18.7	30	7,551	-19.7		322	21.8
350	31	8,490	-28.2	18	240	31.1	31	8,592	-24.1		329	7.8	31	8,284	-35.2		226	27.0	31	8,553	-25.4		297	22.9	30	8,529	-26.4		323	27.0
300	31	9,577	-36.4	17	239	37.5	31	9,699	-32.2		336	10.1	31	9,341	-42.8		227	30.3	31	9,654	-33.4		297	27.2	30	9,625	-34.3		323	32.6
250	31	10,818	-44.9		236	44.3	31	10,960	-42.0		336	13.2	31	10,551	-49.3		232	34.2	31	10,910	-42.9		298	34.0	30	10,875	-43.7		321	37.9
200	31	12,280	-53.7		235	51.7	31	12,434	-53.5		351	17.1	31	12,010	-49.4		234	32.8	31	12,381	-53.4		300	37.1	30	12,342	-52.8		323	40.8
175	31	13,132	-56.6		234	52.1	31	13,281	-59.5		4	16.1	31	12,885	-49.4		236	30.7	31	13,231	-58.4		304	35.0	30	13,195	-57.3		323	37.7
150	31	14,099	-60.7		234	46.0	31	14,231	-65.3		14	14.6	31	13,893	-50.6		234	27.4	31	14,192	-62.4		305	29.9	30	14,161	-61.1		322	30.7
125	31	15,225	-63.3		234	35.0	31	15,330	-68.9		12	9.1	31	15,077	-51.8		233	20.2	31	15,306	-66.2		303	19.4	30	15,286	-63.0		324	21.8
100	31	16,596	-62.3		240	14.0	31	16,664	-68.1		42	10.1	31	16,524	-52.4		229	12.4	31	16,661	-64.3		312	11.3	30	16,660	-62.2		351	9.3
80	31	17,978	-60.3		176	7.2	31	18,019	-63.6		70	13.2	31	17,963	-53.1		214	6.2	31	18,038	-60.3		56	5.1	30	18,045	-59.7		40	8.4
70	30	18,818	-58.7		124	6.8	31	18,852	-60.8		85	16.9	30	18,825	-53.1		184	3.9	31	18,880	-57.8		81	8.4	30	18,893	-57.7		64	10.9
60	30	19,787	-57.1		97	10.5	31	19,808	-57.9		90	18.7	30	19,818	-52.5		109	2.9	31	19,851	-56.1		86	10.5	29	19,860	-55.4		77	13.0
50	30	20,946	-55.0		92	14.2	31	20,967	-55.0		90	18.8	29	20,999	-51.4		97	4.9	31	21,014	-54.0		87	13.8	29	21,029	-53.3		81	15.3
40	30	22,377	-53.2		92	15.3	30	22,397	-53.1		87	22.3	27	22,451	-50.3		93	8.2	31	22,455	-51.5		89	14.2	29	22,472	-51.1		92	17.1
30	30	24,240	-51.0		87	20.4	30	24,263	-50.0		88	25.6	22	24,341	-47.7		84	10.9	30	24,334	-48.7		92	16.9	29	24,355	-48.2		87	18.3
25	30	25,431	-49.1		90	22.2	29	25,460	-47.9		89	27.2	21	25,545	-45.6		84	12.4	28	25,538	-46.6		91	17.5	29	25,561	-46.4		84	21.0
20	30	26,904	-46.4		89	23.3	28	26,938	-45.2		88	28.0	16	27,044	-43.3		81	12.6	23	27,024	-44.3		90	20.6	28	27,051	-43.7		85	21.2
15	28	28,826	-43.3		88	27.2	24	28,869	-42.3		81	30.9	5	29,010	-39.1				17	28,975	-41.1		82	20.8	28	28,996	-40.8		86	24.3
10	26	31,581	-38.8		89	30.5	10	31,649	-37.8																23	31,782	-35.5		89	29.7
7	25	34,064	-33.7		88	32.1																			19	34,283	-31.8		91	32.3
5	18	36,434	-28.8		89	36.5																			15	36,660	-26.8			
4	9	38,015	-25.7																											

Standard pressure surface (mb)	PITTSBURGH, PA. 976 MB						PONAPE, CAROLINE IS. 1005 MB						PORTLAND, ME. 1011 MB						RAPID CITY, S. DAK. 904 MB						ST. CLOUD, MINN. 976 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	353	16.4	86	268	1.4	30	39	24.6	94	138	2.1	31	20	18.3	87	265	2.3	29	966	17.2	77	340	1.9	31	316	17.2	89	138	.8
1000	31	142					30	80	25.2	90	134	2.3	31	116	19.1	77	277	3.9	29	94					31	111				
950	31	579	18.5	72	267	4.9	30	527	24.0	82	107	2.7	31	555	18.4	68	280	6.4	29	536					31	550	19.1	77	199	3.7
900	31	1,044	16.0	70	270	7.2	30	1,006	21.2	82	96	3.3	31	1,019	15.8	65	271	7.4	29	1,006	18.0	71	330	2.5	31	1,017	17.6	68	239	6.8
850	31	1,528	13.1	71	270	7.8	30	1,501	18.5	80	87	3.1	31	1,503	13.0	61	271	8.5	29	1,499	18.9	56	216	2.9	31	1,504	15.2	66	258	7.6
800	31	2,026	10.2	66	282	8.0	30	2,021	15.8	77	87	4.3	31	2,011	9.9	60	262	10.7	29	2,018	17.1	49	209	6.0	31	2,016	12.6	58	263	8.4
750	31	2,566	7.3	60	288	8.9	29	2,561	12.9	75	87	5.8	31	2,546	6.9	57	259	13.6	29	2,560	14.3	48	248	8.2	31	2,552	9.7	55	269	10.1
700	31	3,137	4.5	50	288	11.7	29	3,145	9.7	75	95	8.9	31	3,110	3.8	54	260	16.1	29	3,146	10.5	44	258	10.1	31	3,126	6.7	53	275	11.7
650	31	3,734	1.4	45	292	13.2	29	3,753	6.2	76	97	9.9	31	3,706	.7	44	257	17.3	29	3,749	6.2	44	266	13.0	31	3,728	3.1	50	286	14.8
600	31	4,378	- 2.4	43	299	14.8	29	4,412	2.4	79	98	10.7	31	4,348	- 3.0	42	256	18.5	29	4,408	1.2	48	266	14.6	31	4,375	- .8	46	289	17.3
550	31	5,057	- 6.0	35	300	15.0	29	5,104	- 1.5	77	104	10.9	31	5,027	- 6.8	37	256	19.6	29	5,091	- 3.9	45	267	17.7	31	5,060	- 4.8	41	289	18.5
500	31	5,806	-10.3		296	15.9	29	5,867	- 5.9	71	98	11.5	31	5,772	-11.5	36	253	20.2	29	5,847	- 9.3	44	267	22.0	31	5,810	- 9.2		286	20.8
450	31	6,600	-15.7		299	16.7	29	6,679	-10.7	60	99	11.9	31	6,567	-16.7	31	250	22.7	29	6,645	-14.4		271	24.3	31	6,614	-14.5		289	22.7
400	31	7,489	-21.9		302	19.2	29	7,584	-16.1	51	105	11.1	31	7,448	-23.0	29	246	26.2	29	7,541	-20.7		268	27.2	31	7,500	-20.7		292	26.4
350	31	8,458	-28.9		304	23.7	29	8,576	-23.0	49	100	11.3	31	8,413	-30.0		243	29.0	29	8,510	-27.8		262	32.1	30	8,473	-27.6		291	31.7
300	31	9,544	-36.7		307	28.0	29	9,687	-31.3	45	88	10.3	31	9,494	-37.8		239	32.8	29	9,602	-35.3		260	41.2	30	9,565	-35.2		289	38.5
250	31	10,783	-45.3		315	32.6	29	10,950	-41.7		89	11.7	31	10,729	-45.8		239	35.9	29	10,848	-44.3		259	48.0	30	10,813	-44.1		290	46.8
200	31	12,246	-52.7		314	34.2	29	12,422	-54.5		65	9.9	31	12,192	-51.5		248	31.3	29	12,314	-52.8		259	52.3	30	12,279	-53.3		290	53.2
175	31	13,104	-54.9		316	26.2	29	13,263	-61.7		65	9.1	31	13,055	-53.1		255	23.3	29	13,168	-57.1		260	48.4	30	13,133	-56.2		294	46.4
150	31	14,084	-57.5		313	22.2	29	14,200	-69.4		65	6.6	31	14,044	-55.3		255	17.9	29	14,133	-61.2		261	41.8	30	14,106	-59.0		298	38.3
125	30	15,226	-59.2		317	15.5	29	15,267	-76.7		84	3.9	31	15,202	-57.0		258	14.2	29	15,256	-64.1		262	28.4	30	15,243	-61.0		296	24.7
100	30	16,621	-59.4		328	8.0	29	16,542	-77.6		95	3.7	31	16,613	-57.0		267	6.0	29	16,627	-62.5		247	12.6	30	16,631	-59.7		305	13.0
80	30	18,022	-58.1		51	6.0	28	17,838	-72.6		85	21.0	31	18,030	-55.4		139	1.0	29	18,016	-58.8		205	2.3	30	18,031	-57.8		330	4.3
70	30	18,872	-56.4		60	9.1	28	18,629	-68.5		87	31.0	31	18,891	-54.6		85	4.9	29	18,862	-57.2		101	4.3	30	18,887	-56.0		55	5.1
60	30	19,849	-54.7		81	13.2	28	19,561	-66.2		87	43.7	31	19,873	-53.3		87	6.6	29	19,836	-55.2		87	8.4	30	19,861	-54.7		73	8.4
50	30	21,019	-53.1		88	15.2	26	20,690	-59.7		88	49.4	31	21,052	-51.6		92	8.7	29	21,005	-53.4		83	11.7	30	21,032	-53.1		77	9.9
40	30	22,464	-50.8		91	16.9	26	22,101	-54.6		89	47.6	31	22,507	-49.3		87	13.4	29	22,448	-51.3		82	14.0	29	22,476	-51.0		81	11.9
30	30	24,350	-47.7		85	18.5	26	23,958	-50.8		90	21.4	28	24,401	-46.8		85	15.9	29	24,329	-48.3		86	16.3	29	24,360	-48.1		83	14.6
25	30	25,557	-46.1		84	21.8	25	25,150	-49.2		84	6.2	20	25,601	-45.1		90	15.9	29	25,533	-46.9		85	17.5	29	25,566	-46.3		85	16.3
20	29	27,050	-43.6		87	23.9	23	26,622	-46.8		37	4.7	9	27,087	-41.8				23	27,020	-44.4		86	19.4	25	27,052	-44.3		88	16.7
15	29	28,996	-40.5		88	28.0	18	28,551	-43.9		280	1.4							15	28,959	-41.1				16	28,997	-40.8		85	20.4
10	27	31,793	-35.5		91	31.1	9	31,281	-42.1																					
7	22	34,310	-31.7		97	32.4																								
5	16	36,706	-26.6																											

Standard pressure surface (mb)	ST. PAUL IS., ALASKA 1314 MB						SALEM, OREG. 1011 MB						SALT LAKE CITY, UTAH 870 MB						SAN ANTONIO, TEXAS 987 MB						SAN DIEGO, CALIF. 998 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	10	6.4	98	267	5.6	31	61	11.2	93		.0	31	1,288	18.6	45	147	7.8	31	243	24.1	88	170	5.1	31	124	16.7	90	305	1.0
1000	31	128	6.2	93	247	6.6	31	151	12.2	85	328	.8	31	75					31	129					31	105				
950	31	548	7.6	85	256	8.7	31	580	11.0	79	1	3.9	31	525					31	581	21.7	86	178	14.6	31	547	16.9	68	331	.6
900	31	991	7.3	80	260	8.4	31	1,032	9.3	76	336	2.5	31	1,003					31	1,047	19.6	74	181	19.6	31	1,009	22.6	21	287	3.3
850	31	1,461	6.2	75	250	7.4	31	1,505	7.5	68	258	3.7	31	1,491	22.2	31	158	10.5	31	1,540	18.3	55	181	17.7	31	1,505	21.7	20	278	6.2
800	31	1,957	4.3	70	253	8.0	31	2,003	5.9	56	239	6.0	31	2,017	21.0	24	176	13.4	31	2,057	15.7	48	172	14.2	31	2,028	19.5	23	249	7.4
750	31	2,482	1.7	67	247	8.2	31	2,526	4.1	44	230	9.7	31	2,577	17.4	23	200	9.7	31	2,598	13.1	42	159	11.7	31	2,574	16.2	26	226	8.5
700	31	3,035	- 1.1	67	245	8.4	31	3,088	1.2	41	233	11.9	31	3,155	13.0	26	223	10.9	31	3,180	9.9	39	142	8.4	31	3,163	12.2	30	214	9.5
650	31	3,625	- 4.3	61	246	9.1	31	3,674	- 2.1	40	232	14.4	31	3,773	7.8	30	222	16.3	31	3,789	6.1	41	125	6.8	31	3,773	7.8	31	207	10.3
600	31	4,251	- 7.6	55	251	9.7	31	4,313	- 5.7	34	237	16.5	31	4,426	2.4	37	226	21.0	31	4,444	1.9	40	108	6.0	31	4,434	3.2	29	199	10.3
550	31	4,920	-11.3	46	255	11.5	31	4,984	- 9.6	34	232	20.4	31	5,114	- 3.7	47	225	23.9	31	5,130	- 2.3	37	88	4.7	31	5,123	- 1.7	31	204	9.1
500	31	5,649	-15.7	43	255	12.2	31	5,721	-14.5	34	231	23.7	31	5,866	- 9.7	50	228	24.1	31	5,892	- 6.6	33	99	4.1	31	5,886	- 6.7	30	212	11.3
450	31	6,433	-21.1	44	260	12.6	31	6,502	-20.3		232	28.0	31	6,672	-14.9	39	233	25.5	31	6,701	-11.7	35	77	6.0	31	6,695	-12.0		219	11.5
400	31	7,296	-27.2	43	263	12.0	31	7,373	-26.5	33	234	31.7	31	7,553	-21.0		233	29.1	31	7,601	-17.4		55	9.3	31	7,593	-18.1		224	14.6
350	31	8,244	-34.3	42	265	13.4	31	8,323	-34.0	35	234	37.1	31	8,526	-27.7		234	36.3	31	8,587	-24.3		46	11.7	31	8,578	-24.7		223	17.7
300	31	9,305	-42.2		270	13.4	31	9,385	-41.4		237	40.8	31	9,616	-35.7		235	42.9	31	9,692	-32.8		51	12.4	31	9,682	-32.6		224	21.0
250	31	10,517	-49.9		268	14.6	31	10,602	-48.4		238	44.1	31	10,861	-44.2		236	50.9	31	10,949	-42.9		52	13.0	31	10,943	-42.1		226	22.3
200	31	11,764	-51.9		273	15.2	31	12,060	-50.4		240	44.7	31	12,329	-52.7		238	56.5	30	12,416	-54.7		50	16.1	31	12,419	-52.8		221	26.8
175	31	12,830	-51.4		279	15.3	31	12,931	-50.6		240	39.4	31	13,182	-57.4		239	53.2	30	13,258	-60.9		48	17.9	31	13,269	-58.7		219	26.4
150	31	13,833	-50.7		274	12.4	31	13,933	-52.4		238	31.9	31	14,145	-62.0		239	47.6	30	14,203	-66.9		54	20.4	31	14,223	-65.1		212	22.3
125	30	15,022	-50.9		274	12.0	31	15,106	-53.7		237	24.5	31	15,263	-65.1		240	31.3	30	15,292	-70.9		64	21.2	31	15,320	-69.9		212	18.3
100	30	16,474	-50.7		272	6.8	30	16,539	-54.0		231	15.5	31	16,620	-64.5		231	15.3	30	16,669	-70.2		69	20.2	29	16,664	-68.9		166	5.4
80	29	17,927	-50.3		277	3.1	30	17,970	-54.3		207	6.2	31	18,000	-59.8		194	6.6	30	17,953	-65.1		73	20.4	29	17,994	-64.4		107	11.3
70	29	18,806	-49.9		302	1.2	30	18,828	-54.0		128	3.1	30	18,845	-57.7		149	5.8	30	18,779	-62.9		81	22.5	29	18,826	-61.2		99	14.4
60	29	19,867	-49.5		36	1.6	30	19,817	-53.1		59	5.4	29	19,814	-56.1		106	8.0	30	19,726	-60.0		87	24.1	29	19,779	-58.2		93	16.1
50	29	21,003	-48.9		78	3.5	30	20,993	-52.4		98	8.9	25	20,978	-54.3		91	12.4	30	20,872	-57.4		88	27.4	29	20,934	-55.6		91	21.0
40	29	22,470	-48.2		87	5.2	30	22,440	-50.9		93	11.7	23	22,418	-52.1		93	13.2	30	22,290	-54.8		87	29.7	29	22,362	-53.8		89	24.7
30	29	24,371	-46.7		89	8.4	28	24,325	-48.2		89	14.6	22	24,297	-49.2		91	16.7	30	24,146	-50.8		88	33.6	29	24,220	-50.7		88	29.5
25	29	25,584	-45.3		89	9.9	28	25,530	-46.6		86	15.0	22	25,498	-47.5		90	18.3	28	25,339	-48.8		86	35.8	27	25,416	-48.6		89	31.9
20	26	27,073	-43.6		90	12.4	26	27,017	-43.7		83	18.1	20	26,976	-45.1		83	19.2	23	26,814	-46.8		87	38.1	24	26,891	-46.3		90	33.0
15	16	29,011	-41.3		90	11.5	18	28,957	-40.5		87	21.6	13	28,914	-42.0				10	28,768	-42.4				15	28,809	-43.6		90	34.8
10	6	31,706	-38.3																											

See reference note at end of table

RAWINSONDE DATA

Average monthly values

JULY 1963

SAN JUAN, P. R. — 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	25.7	87	94	5.1
1000	31	147	25.1	85	92	12.2
950	31	593	22.4	83	93	19.0
900	31	1,068	19.4	80	93	18.3
850	31	1,558	16.4	78	96	19.8
800	31	2,073	13.9	68	96	17.7
750	31	2,606	11.6	54	98	16.9
700	31	3,190	8.1	48	99	16.5
650	31	3,790	4.5	42	102	15.3
600	31	4,446	.8	35	99	14.2
550	31	5,131	- 3.1	34	94	12.6
500	31	5,889	- 7.4	30	87	9.9
450	31	6,696	-13.2		99	7.6
400	31	7,591	-18.9		103	3.7
350	31	8,571	-26.2		146	1.2
300	31	9,667	-34.6		262	2.7
250	31	10,914	-44.7		259	6.8
200	31	12,369	-56.2		273	9.7
175	31	13,207	-61.3		275	10.3
150	31	14,152	-66.2		258	7.2
125	31	15,246	-70.0		159	3.7
100	31	16,566	-70.9		86	14.6
80	30	17,903	-66.1		84	28.2
70	30	18,724	-63.9		88	34.8
60	30	19,668	-61.0		88	39.4
50	30	20,808	-58.2		91	40.2
40	30	22,221	-55.4		89	38.7
30	29	24,069	-51.6		90	42.0
25	28	25,257	-48.6		89	36.5
20	28	26,734	-45.7		88	32.8
15	28	28,664	-42.0		84	34.2
10	28	31,439	-37.5		91	40.8
7	23	33,921	-34.3		95	41.4
5	10	36,241	-31.2			
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SANTA MONICA, CALIF. — 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	16.9	86	31	1.9
1000	31	106	16.7	86	71	1.2
950	31	548	17.2	70	104	3.7
900	31	1,010	21.9	29	104	.6
850	31	1,505	21.1	20	260	4.9
800	31	2,027	18.5		245	8.5
750	31	2,573	15.7		240	10.5
700	31	3,159	12.0		235	10.7
650	31	3,769	7.9		227	11.3
600	30	4,430	3.3		229	11.9
550	30	5,117	- 1.8		227	10.7
500	30	5,880	- 6.9		226	11.9
450	30	6,683	-12.7		225	15.0
400	30	7,583	-18.8		228	19.0
350	30	8,565	-25.6		229	23.9
300	30	9,666	-33.2		229	27.2
250	30	10,923	-42.4		226	28.4
200	30	12,397	-53.0		226	34.0
175	30	13,247	-58.9		226	34.2
150	30	14,201	-64.8		221	28.8
125	29	15,302	-69.4		222	23.7
100	29	16,632	-67.9		203	6.6
80	29	17,986	-64.0		115	9.5
70	29	18,817	-60.9		104	12.6
60	29	19,774	-58.6		96	15.9
50	29	20,927	-56.0		90	19.2
40	29	22,355	-53.8		91	21.8
30	29	24,213	-51.2		89	26.4
25	29	25,404	-49.3		89	29.7
20	28	26,876	-46.9		91	32.4
15	28	28,796	-44.1		95	33.6
10	15	31,530	-40.1			

SAULT STE. MARIE, MICH. — 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	14.2	87	325	2.1
1000	31	123				
950	31	560	17.3	62	292	6.4
900	31	1,021	15.0	57	287	9.1
850	31	1,502	11.7	59	279	9.7
800	31	2,007	8.7	57	274	11.3
750	31	2,537	6.1	49	277	10.5
700	31	3,102	3.6	40	291	11.9
650	31	3,698	.7		296	13.8
600	31	4,340	- 2.7	36	295	15.2
550	31	5,020	- 7.0		297	16.5
500	31	5,762	-11.7		298	18.5
450	31	6,556	-17.3		302	19.4
400	31	7,434	-23.4		307	20.8
350	31	8,397	-30.4		309	25.5
300	31	9,476	-38.1		308	33.2
250	31	10,709	-46.3		307	35.4
200	31	12,173	-51.1		306	35.2
175	31	13,038	-53.0		305	31.3
150	31	14,027	-55.6		308	25.5
125	31	15,185	-57.0		309	19.4
100	31	16,598	-56.4		316	11.5
80	31	18,016	-55.7		342	5.4
70	31	18,872	-54.8		17	3.7
60	31	19,857	-53.7		72	5.6
50	31	21,032	-52.3		67	8.0
40	31	22,481	-50.5		78	10.1
30	31	24,368	-47.8		82	13.2
25	30	25,578	-45.8		81	15.9
20	30	27,072	-43.4		85	18.1
15	30	29,021	-40.3		86	21.4
10	27	31,813	-35.5		87	23.5
7	24	34,317	-31.3		93	26.4
5	22	36,709	-27.5			

SHEMYA, ALASKA — 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	7.5	96	203	8.5
1000	31	112	7.6	94	204	11.9
950	31	540	7.8	85	216	15.2
900	31	983	8.2	74	213	15.3
850	31	1,455	7.3	66	212	16.7
800	31	1,954	5.8	66	218	16.1
750	31	2,478	4.0	60	223	17.1
700	31	3,040	1.4	58	229	18.3
650	31	3,628	- 1.7	57	236	16.9
600	31	4,267	- 5.2	48	243	17.5
550	31	4,937	- 9.4	46	247	18.7
500	31	5,677	-13.7	46	254	18.8
450	31	6,466	-19.0	42	255	20.8
400	31	7,338	-25.2	42	261	22.7
350	31	8,293	-32.4	41	260	28.4
300	31	9,362	-40.1		263	34.6
250	31	10,584	-48.0		267	34.2
200	31	12,038	-52.2		268	31.7
175	31	12,902	-52.1		262	26.0
150	31	13,899	-52.2		264	20.6
125	31	15,076	-52.9		266	12.6
100	31	16,515	-52.8		266	9.5
80	30	17,957	-51.9		283	2.5
70	30	18,831	-51.4			.0
60	30	19,824	-51.0		71	3.5
50	29	21,011	-50.3		80	6.4
40	28	22,471	-49.3		79	9.1
30	25	24,367	-47.3		87	12.4
25	25	25,576	-45.9		84	14.6
20	25	27,068	-43.8		85	18.7
15	15	29,018	-40.6		81	20.2

SHREVEPORT, LA. * — 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	23.5	90	185	5.2
1000	31	143	23.6	87	194	7.6
950	31	595	23.8	73	[illegible]	15.2
900	31	1,066	21.5	63	228	13.2
850	31	1,561	18.7	61	227	9.7
800	31	2,079	15.3	61	235	7.2
750	31	2,621	11.6	63	244	4.5
700	31	3,197	8.0	57	263	3.3
650	31	3,804	4.2	53	272	2.5
600	31	4,453	.3	48	252	2.7
550	31	5,143	- 3.7	43	299	1.4
500	31	5,893	- 7.7	38	356	4.7
450	31	6,703	-12.2	29	356	7.4
400	31	7,598	-17.9	27	4	10.1
350	31	8,583	-24.7	[illegible]	5	13.4
300	31	9,688	-32.8	20	9	14.6
250	31	10,945	-42.7		10	18.1
200	31	12,416	-53.9		11	20.0
175	30	13,262	-59.8		15	21.2
150	29	14,217	-65.7		26	21.4
125	29	15,314	-69.4		38	19.0
100	29	16,648	-67.7		61	16.7
80	29	18,003	-63.9		74	16.7
70	29	18,840	-61.6		77	20.0
60	29	19,786	-58.8		85	23.1
50	28	20,939	-55.9		90	[illegible]
40	28	22,366	-53.6		87	25.1
30	28	24,226	-50.9		89	28.4
25	27	25,417	-48.9		86	[illegible]
20	26	26,892	-46.0		88	34.0
15	25	28,821	-42.7		86	38.1
10	23	31,585	-38.0		86	42.7
7	19	34,074	-33.3		91	48.0
5	10	36,433	-30.6			
4	5	37,988	-29.1			

SPOKANE, WASH. — 931 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	13.1	61	170	4.5
1000	31	108				
950	31	545				
900	31	1,005	15.6	54	200	4.7
850	31	1,488	13.4	50	224	5.8
800	31	1,996	9.8	54	224	5.2
750	31	2,519	6.0	59	221	6.0
700	31	3,090	2.2	60	214	8.9
650	31	3,679	- 1.3	56	221	13.0
600	31	4,319	- 5.3	53	222	17.3
550	31	4,990	- 9.6	46	224	21.6
500	31	5,726	-14.7	44	220	24.9
450	31	6,504	-20.2	36	223	27.2
400	31	7,378	-26.6	36	225	29.3
350	31	8,328	-33.9	36	223	33.6
300	31	9,390	-41.9		227	37.9
250	31	10,604	-48.8		230	44.1
200	31	12,060	-50.6		231	43.9
175	31	12,930	-50.4		231	40.8
150	31	13,934	-51.3		231	33.4
125	31	15,115	-52.7		230	24.1
100	31	16,551	-53.6		226	15.3
80	30	17,983	-53.5		203	5.2
70	30	18,843	-52.6		145	3.7
60	30	19,842	-52.1		120	6.2
50	30	21,025	-51.2		96	8.5
40	29	22,479	-49.6		91	10.1
30	29	24,374	-46.7		88	13.4
25	29	25,590	-44.4		87	15.3
20	24	27,095	-42.2		86	17.5
15	18	29,053	-38.8			
10						
7						
5						

SWAN ISLAND, W. I. — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	26.4	84	93	10.5
1000	31	121	25.8	83	88	12.6
950	31	570	23.1	80	97	18.3
900	31	1,043	20.3	75	102	20.4
850	31	1,535	17.4	71	106	22.3
800	31	2,052	14.6	63	105	21.6
750	31	2,592	12.0	56	109	22.0
700	31	3,171	8.7	52	111	20.8
650	31	3,775	5.2	51	115	18.5
600	31	4,430	1.4	49	112	16.3
550	31	5,118	- 2.5	46	114	14.8
500	30	5,877	- 6.8	39	112	8.9
450	30	6,687	-11.9	39	108	8.5
400	30	7,584	-17.9	38	79	8.5
350	30	8,569	-24.7		49	5.2
300	30	9,672	-33.2		14	4.7
250	30	10,925	-43.6		359	3.7
200	30	12,385	-55.8		313	7.2
175	30	13,221	-62.8		318	6.6
150	30	14,157	-68.6		340	7.4
125	30	15,239	-71.2		41	8.5
100	30	16,556	-71.2		79	18.5
80	30	17,888	-67.8		87	29.1
70	30	18,697	-64.9		87	34.4
60	30	19,644	-61.5		89	39.2
50	30	20,782	-59.0		92	42.7
40	30	22,191	-56.4		91	42.9
30	30	24,032	-52.3		95	43.1
25	27	25,217	-48.6		94	37.3
20	24	26,699	-45.5		93	34.0
15	16	28,634	-42.3		90	30.1
10	6	31,389	-38.0			

TAMPA, FLA. — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	24.6	88	162	2.5
1000	31	160	24.8	81	174	4.1
950	31	607	22.7	76	207	6.2
900	31	1,080	19.8	71	211	5.2
850	31	1,571	16.9	67	209	4.5
800	31	2,087	14.0	62	228	3.7
750	31	2,628	10.8	57	226	3.5
700	31	3,202	7.6	53	237	3.9
650	31	3,806	3.9	52	260	4.1
600	31	4,456	.1	49	266	3.5
550	30	5,145	- 3.7	41	286	2.5
500	30	5,898	- 8.3	38	311	2.7
450	30	6,706	-13.4	34	321	3.7
400	30	7,597	-19.1	31	324	3.9
350	30	8,578	-25.9		353	2.7
300	30	9,675	-34.2		12	4.5
250	30	10,925	-44.0		38	8.4
200	30	12,383	-55.7		29	10.9
175	30	13,221	-61.8		29	14.0
150	30	14,163	-66.8		35	15.0
125	30	15,258	-68.2		47	13.2
100	30	16,601	-66.9		77	14.2
80	30	17,957	-63.8		85	23.1
70	30	18,785	-61.1		82	23.5
60	30	19,743	-58.3		88	28.8
50	28	20,894	-55.7		94	29.1
40	28	22,323	-52.9		95	29.5
30	27	24,191	-49.3		90	33.0
25	24	25,396	-46.9		87	34.8
20	21	26,879	-44.9		84	37.3
15	14	28,800	-41.4		83	38.7

TATOOSH IS., WASH * — 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	12.5	92	175	3.5
1000	31	145	12.0	88	189	3.3
950	31	573	10.0	81	226	4.9
900	31	1,023	8.4	75	238	5.1
850	31	1,494	6.0	72	223	5.4
800	31	1,989	3.7	65	221	5.6
750	31	2,508	1.3	57	221	5.8
700	31	3,064	- 1.6	54	225	6.2
650	31	3,646	- 4.5	48	220	7.8
600	31	4,278	- 8.0	44	222	10.5
550	31	4,942	-12.4	38	227	12.0
500	31	5,671	-17.1	36	230	13.2
450	31	6,444	-22.8	40	230	15.0
400	31	7,307	-29.4	40	226	15.3
350	31	8,246	-36.5	35	222	17.5
300	31	9,296	-44.1		220	22.2
250	31	10,501	-50.0		228	23.7
200	30	11,956	-49.3		232	22.3
175	30	12,831	-49.2		232	24.1
150	29	13,841	-49.8		235	23.5
125	29	15,031	-50.9		230	15.9
100	29	16,479	-52.1		228	11.3
80	28	17,921	-52.7		220	7.2
70	28	18,774	-52.5		189	3.1
60	27	19,781	-52.2		115	3.7
50	27	20,962	-51.6		114	6.0
40	27	22,412	-50.6		102	7.8
30	26	24,292	-48.6		79	10.5
25	26	25,494	-47.2		83	14.6
20	26	26,977	-44.9		88	17.7
15	23	28,922	-41.9		89	20.2
10	21	31,700	-36.4		89	24.3
7	18	34,192	-32.0		90	29.0
5	9	36,640	-26.9			

TOPEKA, KANS. — 982 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	21.6	85	110	2.9
1000	31	112				
950	31	563	23.4	68	192	8.2
900	31	1,032	22.4	60	219	11.1
850	31	1,528	19.7	58	238	9.9
800	31	2,048	16.6	59	259	9.1
750	31	2,592	13.1	56	273	8.4
700	31	3,173	9.6	50	274	8.4
650	31	3,781	5.5	50	286	7.4
600	31	4,435	1.4	51	293	9.7
550	31	5,126	- 2.9	43	300	9.5
500	31	5,881	- 7.3		306	9.9
450	31	6,692	-12.0		311	11.1
400	31	7,589	-17.8		310	14.6
350	31	8,575	-24.4		316	17.1
300	31	9,680	-32.5		310	22.3
250	31	10,939	-42.2		305	26.2
200	31	12,413	-53.1		308	31.1
175	31	13,263	-58.5		313	28.0
150	31	14,220	-63.6		320	23.5
125	31	15,329	-66.9		326	15.7
100	31	16,674	-66.0		343	9.1
80	31	18,043	-61.5		57	7.4
70	31	18,886	-59.2		78	10.5
60	31	19,846	-57.1		83	13.6
50	31	21,007	-54.1		88	15.3
40	31	22,447	-51.9		90	16.5
30	31	24,321	-49.3		88	17.1
25	30	25,522	-47.4		86	18.8
20	22	27,013	-44.7		85	21.4
15	14	28,951	-41.4		80	21.8

TRUK, CAROLINE IS. — 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	2	25.8	90	85	.6
1000	31	85	26.3	85		.0
950	31	533	24.1	82	216	1.6
900	31	1,012	21.3	82	191	1.0
850	31	1,508	18.6	80	105	1.7
800	31	2,027	15.8	78	103	3.3
750	31	2,572	12.9	76	98	3.5
700	31	3,153	9.8	75	101	5.6
650	31	3,766	6.2	74	105	7.6
600	31	4,420	2.5	73	107	10.7
550	31	5,117	- 1.3	72	105	10.5
500	31	5,875	- 5.5	65	109	10.5
450	31	6,692	-10.4	61	107	10.2
400	31	7,595	-15.8	52	107	10.9
350	31	8,589	-22.5	44	104	11.5
300	31	9,702	-30.8	41	103	12.4
250	31	10,969	-41.1		97	11.9
200	31	12,445	-53.6		86	12.6
175	31	13,290	-60.8		75	13.0
150	31	14,231	-68.5		74	11.1
125	31	15,303	-76.3		68	10.1
100	29	16,582	-76.6		95	7.8
80	28	17,882	-71.7		94	22.9
70	28	18,675	-68.4		92	31.9
60	28	19,610	-63.5		92	43.5
50	24	20,738	-58.9		93	48.4
40	22	22,155	-53.5		94	45.3
30	21	24,017	-50.7		94	23.9
25	19	25,208	-48.9		94	10.7
20	19	26,682	-46.3		81	7.8
15	18	28,610	-43.0		97	6.0
10	16	31,348	-41.4		89	12.6
7	15	33,774	-39.8		101	16.7
5	7	36,057	-39.2			

TUCSON, ARIZ. — 923 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	789	25.5	51	151	6.4
1000	31	70				
950	31	520				
900	31	1,006	26.5	46	169	4.7
850	31	1,509	23.9	44	292	1.0
800	31	2,037	20.4	45	360	4.1
750	31	2,587	16.5	50	25	3.9
700	31	3,175	12.2	55	54	2.9
650	31	3,788	7.8	60	112	2.5
600	31	4,447	3.0	64	126	4.9
550	31	5,137	- 2.0	65	126	7.2
500	31	5,899	- 6.8	63	131	5.8
450	31	6,712	-11.5	52	182	3.3
400	31	7,610	-17.0	41	201	6.0
350	31	8,599	-23.6		200	6.8
300	31	9,707	-31.8		211	10.3
250	31	10,971	-41.7		223	10.5
200	31	12,446	-53.2		229	10.5
175	31	13,293	-59.4		232	9.7
150	31	14,244	-65.6		222	5.8
125	31	15,335	-71.3		183	4.1
100	31	16,654	-70.1		106	7.6
80	31	17,998	-64.7		93	15.0
70	31	18,826	-61.3		94	18.8
60	31	19,783	-58.6		91	21.6
50	31	20,936	-56.0		91	23.9
40	30	22,366	-53.4		91	26.4
30	28	24,231	-49.9		88	27.6
25	27	25,429	-47.9		86	29.9
20	25	26,913	-45.1		86	33.6
15	24	28,850	-41.1		87	38.1
10	21	31,639	-35.3		92	38.9
7	12	34,125	-31.4			

WAKE IS., PACIFIC AREA — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	27.4	78	85	8.0
1000	31	120	26.5	78	86	10.3
950	31	570	23.2	79	91	12.6
900	31	1,042	20.1	76	93	12.2
850	31	1,535	16.9	76	94	10.7
800	31	2,051	14.2	72	91	8.7
750	31	2,590	11.8	62	92	8.4
700	31	3,170	8.7	54	88	6.2
650	31	3,775	5.2	49	82	5.1
600	31	4,430	1.3	47	59	4.1
550	31	5,118	- 2.9	45	66	2.5
500	31	5,875	- 7.4	40	14	1.7
450	31	6,683	-12.1	35	349	2.3
400	31	7,581	-17.9	36	303	4.7
350	31	8,565	-25.1	37	287	8.4
300	30	9,665	-33.5		288	13.2
250	30	10,917	-43.7		286	19.8
200	30	12,375	-55.9		284	25.8
175	30	13,211	-62.5		283	26.8
150	30	14,147	-69.1		284	24.5
125	29	15,223	-71.2		[illegible]	12.2
100	28	16,547	-69.1		60	9.1
80	28	17,891	-65.7		85	25.1
70	28	18,705	-63.5		86	32.3
60	27	19,658	-60.8		88	34.8
50	27	20,798	-58.2		87	38.9
40	27	22,210	-55.8		87	40.2
30	26	24,052	-53.1		90	42.2
25	26	25,233	-50.8		90	42.9
20	26	26,694	-48.2		87	41.4
15	24	28,609	-44.4		88	40.4
10	22	31,336	-40.8		89	43.1
7	19	33,774	-38.2		88	47.6
5	17	36,097	-35.3		91	60.0

WASHINGTON, D. C. — 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	84	17.5	90	284	.8
1000	31	137			315	2.5
950	31	581	20.2	66	319	7.4
900	31	1,046	17.2	65	[illegible]	7.2
850	31	1,532	14.0	66	306	7.4
800	31	2,041	10.9	64	294	9.3
750	31	2,575	7.6	60	279	10.3
700	31	3,144	4.6	51	274	[illegible]
650	31	3,739	1.1	49	278	11.7
600	31	4,384	- 2.3	39	282	13.0
550	31	5,067	- 5.8		283	14.4
500	31	5,812	-10.3		279	15.5
450	31	6,613	-15.6		287	16.5
400	31	7,495	-21.9		287	17.7
350	31	8,463	-29.0		284	20.0
300	31	9,548	-36.8		281	22.2
250	31	10,788	-45.2		281	24.1
200	31	12,249	-53.1		295	23.7
175	31	13,104	-55.8		295	21.0
150	31	14,079	-58.5		298	17.1
125	31	15,218	-61.0		296	8.5
100	31	16,603	-60.7		322	3.9
80	31	17,996	-59.0		51	5.8
70	31	18,846	-57.6		74	8.7
60	30	19,817	-56.0		81	12.6
50	30	20,982	-53.9		88	15.9
40	30	22,424	-51.2		90	16.9
30	29	24,305	-48.3		87	19.2
25	23	25,513	-46.5		83	20.8
20	17	26,994	-43.9		91	23.9
15	9	28,922	-41.1			

WINNEMUCCA, NEV. — 869 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,310	12.2	38	248	.6
1000	31	102				
950	31	542				
900	31	1,010				
850	31	1,494	17.5	29	327	2.7
800	31	2,011	15.5	28	308	3.3
750	31	2,549	12.1	[illegible]	[illegible]	5.1
700	31	3,128	8.2	31	231	11.5
650	31	3,733	4.1	29	220	18.5
600	31	4,382	[illegible]	27	216	23.9
550	31	5,065	- 5.1		222	26.8
500	31	5,814	-10.2		[illegible]	28.0
450	31	6,614	-16.0		233	31.5
400	31	7,494	-22.5		233	34.4
350	31	8,460	-29.8		235	39.4
300	31	9,542	-37.5		236	46.8
250	31	10,778	-45.5		236	54.0
200	31	12,238	-53.0		232	60.8
175	30	13,092	-56.0		233	64.3
150	30	14,065	-59.2		233	52.3
125	30	15,200	-61.6		236	35.6
100	30	16,580	-61.1		227	16.3
80	30	17,974	-58.3		185	3.5
70	30	18,822	-57.0		120	3.9
60	30	19,797	-55.6		85	6.8
50	30	20,963	-54.2		78	[illegible]
40	29	22,402	-52.3		77	12.2
30	28	24,273	-49.2		74	13.8
25	28	25,475	-47.2		74	15.3
20	24	26,954	-44.5		80	17.7
15	17	28,895	-40.6		78	18.7
10	5	31,685	-36.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	WINSLOW, ARIZ. 852 MB						YAKUTAT, ALASKA 1015 MB						YUCCA FLAT, NEV. 879 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,492	19.4	48	208	3.9	31	12	10.8	97	99	2.1	31	1,196	12.6	19	278	.6
1000	31	85					31	133	10.5	95	130	2.1	31	87				
950	31	535					31	558	8.7	89	171	3.1	31	525				
900	31	1,013					31	1,007	6.3	85	182	2.9	31	996				
850	31	1,513	19.9	46	206	4.5	31	1,474	4.1	83	220	2.3	31	1,487	23.3	16	211	5.6
800	31	2,039	21.6	33	266	10.5	31	1,966	2.0	80	193	2.5	31	2,012	20.4		203	14.6
750	31	2,592	17.9	33	277	8.5	31	2,483	0.0	75	201	2.9	31	2,560	16.6		205	16.7
700	31	3,181	13.4	38	266	6.6	31	3,036	- 2.9	66	217	1.4	31	3,147	12.1		199	15.2
650	31	3,795	8.4	46	229	4.9	31	3,612	- 6.0	63	260	1.7	31	3,757	7.4		193	15.3
600	31	4,456	3.1	56	188	6.4	31	4,244	- 9.8	60	250	3.3	31	4,415	2.5		196	16.3
550	31	5,147	- 2.2	62	196	9.9	31	4,899	-13.8	52	263	4.5	31	5,102	- 2.2		206	18.8
500	31	5,905	- 7.4	59	206	11.1	31	5,629	-18.6	49	268	5.2	31	5,862	- 7.4		223	19.4
450	31	6,713	-12.3	41	216	9.9	31	6,397	-24.0	45	280	4.5	31	6,667	-13.1		231	22.5
400	31	7,609	-18.0	34	235	11.3	31	7,257	-30.2	43	274	8.2	31	7,562	-19.6		234	25.1
350	31	8,594	-24.5		233	14.6	31	8,193	-37.5	43	267	8.5	31	8,540	-26.5		233	29.5
300	31	9,700	-32.2		231	18.5	31	9,240	-45.3		279	9.7	31	9,637	-34.1		236	35.8
250	31	10,961	-41.8		237	20.4	31	10,438	-51.2		280	12.0	31	10,890	-42.8		233	42.6
200	31	12,436	-53.0		233	20.8	31	11,885	-50.3		281	12.0	31	12,363	-52.7		232	45.9
175	31	13,285	-59.2		235	19.4	31	12,761	-48.3		280	10.5	31	13,215	-57.6		232	43.7
150	31	14,237	-65.4		229	16.1	31	13,778	-48.1		289	8.4	31	14,175	-63.2		233	39.8
125	31	15,330	-70.5		233	11.9	31	14,978	-48.3		276	6.0	31	15,284	-67.4		232	31.3
100	30	16,653	-69.2		171	4.7	31	16,447	-48.5		287	4.3	31	16,627	-66.8		221	12.2
80	30	18,004	-64.2		115	9.7	31	17,917	-48.1		299	1.2	31	17,990	-61.9		154	7.0
70	30	18,839	-61.3		98	12.8	31	18,794	-47.7		73	.8	31	18,822	-59.6		113	9.9
60	30	19,792	-58.0		91	16.5	31	19,817	-47.3		91	2.7	31	19,789	-57.3		98	14.4
50	30	20,947	-55.7		92	19.2	31	21,024	-47.0		84	5.2	31	20,948	-54.9		92	17.5
40	29	22,377	-53.5		90	22.3	30	22,499	-46.5		88	7.2	31	22,380	-52.6		89	20.2
30	28	24,240	-50.3		90	24.3	29	24,415	-44.7		81	10.3	31	24,251	-49.6		91	22.2
25	27	25,438	-48.3		88	26.2	29	25,639	-43.2		82	11.9	30	25,451	-47.9		89	25.1
20	25	26,920	-45.8		88	29.0	28	27,146	-41.1		86	16.1	26	26,928	-44.9		88	26.4
15	16	28,857	-43.5				25	29,113	-38.3		85	17.3	17	28,883	-43.0		87	28.4
10							20	31,937	-33.6		79	25.6						
7							7	34,461	-28.9									

Note: All observations scheduled at 1200 G C T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. Number of observations refers to [illegible] height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 6 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsonde [illegible] station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

BLUE HILL OBS., MASS.

Date	Sun's zenith distance: A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Jul.									
3	----	----	----	----	1.37	----	----	----	----
4	----	----	----	----	1.36	1.15	0.96	0.82	0.69
5	0.72	0.82	0.94	----	----	1.07	.94	.82	.72
6	.77	.84	.98	1.15	----	----	----	----	----
9	.62	.75	.91	1.18	1.45	1.17	1.00	.88	.77
24	.50	.60	.76	.96	1.18	.82	.65	.53	.44
30	----	----	----	----	----	1.13	1.01	.87	.77
31	.75	.87	.99	1.18	1.37	1.07	.93	.78	.70
Averages	0.67	0.78	0.92	1.12	1.35	1.07	0.92	0.78	0.68

ALBUQUERQUE, N. MEX.

	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Jul.									
1	0.60	0.71	0.85	1.01	----	1.07	0.92	0.80	0.71
2	.72	.79	.94	1.10	----	----	----	----	----
3	.75	.83	.93	1.10	1.29	----	----	.83	.77
4	----	----	----	----	1.32	----	----	----	----
5	.78	.85	.97	1.11	1.30	----	.92	----	----
6	.79	.86	.98	1.12	1.31	(1.12)	.97	.81	(.75)
7	.74	.82	(.85)	1.10	----	----	----	----	----
8	----	----	(.90)	1.12	(1.29)	----	----	----	----
9	----	----	----	----	(1.29)	----	----	----	----
11	.58	.69	.83	1.03	----	----	----	----	----
12	----	----	----	----	1.35	----	----	----	.87
13	.83	.90	1.00	1.15	----	1.13	----	.83	.76
14	(.79)	.87	.98	1.13	1.33	----	----	----	----
15	.77	.87	.99	1.14	1.15	----	.96	.79	.72
16	.68	.77	.90	1.03	1.25	----	----	----	----
17	.65	.76	.86	1.02	1.25	1.08	.90	.77	.68
18	----	----	----	----	1.22	----	----	----	----
20	.69	.76	.88	1.01	1.25	----	----	----	----
21	.73	.82	.95	1.10	1.30	1.13	.99	.88	.79
22	.70	.79	.92	1.07	1.27	(1.03)	(.87)	----	----
23	.68	.82	.91	1.06	1.28	(.92)	(.57)	----	----
24	.65	.75	.85	.99	1.27	----	.85	.75	----
25	M	M	M	1.00	1.19	----	----	----	----
26	.63	.72	.85	1.01	1.21	----	----	----	----
29	.66	.76	.87	1.06	1.33	(1.09)	----	----	----
30	.73	.83	.95	1.11	1.33	----	----	.82	.73
31	.66	.77	.89	1.05	1.27	1.08	.95	----	.73
Averages	0.70	0.80	0.92	1.07	1.27	1.10	0.93	0.81	0.75

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Jul.									
1	H 0.35	H 0.42	H 0.54	M 0.73	M 0.97	S 0.69	S 0.59	S 0.48	S 0.40
2	----	----	----	----	H 1.01	----	----	----	----
3	M .19	M .32	----	----	H .97	H .67	H .48	H .33	H .21
4	M .32	M .40	H .54	----	----	H .73	H .56	H .40	M .25
9	S .41	S .50	S .64	S .83	H 1.08	M .84	----	----	----
18	----	----	----	----	H 1.11	S .77	----	----	----
19	H .32	----	----	M .77	H 1.00	----	----	----	----
20	.57	.67	.80	.96	H 1.17	S .99	S .78	S .62	S .46
21	----	----	----	----	S 1.08	S .77	S .63	S .51	S .35
26	I .21	I .31	I .49	M .68	----	----	----	----	----
31	----	----	----	----	----	M .70	M .66	M .52	M .42
Averages	0.34	0.44	0.60	0.79	1.05	0.77	0.62	0.48	0.35

( ) Clouds present
H Haze, slight
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable
* Values corresponding to true solar noon.

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance: A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Jul.									
3	1.05	1.15	1.25	1.36	----	----	----	1.14	1.06
4	1.05	1.14	1.23	1.36	1.49	----	----	1.08	1.00
5	1.05	1.14	1.24	1.38	----	----	1.24	1.17	1.05
6	1.07	1.16	1.26	1.38	1.53	1.37	1.26	1.17	1.06
7	----	----	----	----	1.53	----	----	----	----
8	1.10	1.18	1.28	1.40	1.55	1.38	1.26	1.16	1.07
9	1.12	1.20	1.30	1.41	1.51	----	----	----	----
10	1.13	1.20	1.29	1.42	1.53	1.37	1.24	1.16	1.08
11	1.11	1.20	1.29	1.41	1.53	1.36	1.26	1.16	1.08
12	1.07	1.16	1.27	1.39	----	1.35	1.24	1.14	1.05
13	1.12	1.21	1.31	1.43	1.54	1.38	1.27	1.18	1.09
14	1.08	1.18	----	----	1.51	1.35	1.24	1.16	1.07
15	1.10	1.20	1.30	1.43	1.51	1.32	1.20	1.12	1.03
16	1.13	1.22	1.31	1.43	1.57	1.42	1.29	1.19	1.10
17	----	----	----	1.40	1.55	1.37	1.26	1.16	1.07
18	1.14	1.20	1.30	----	----	----	----	----	----
19	1.06	1.15	1.24	----	----	----	----	----	----
20	1.13	1.21	1.31	1.41	----	----	----	----	----
21	1.13	1.21	1.30	1.40	1.51	----	----	----	----
22	----	----	----	----	----	1.38	1.26	1.17	1.08
23	----	----	----	----	1.52	----	----	----	----
24	----	----	----	----	1.53	1.38	1.25	1.16	----
25	1.10	1.19	1.28	1.40	----	----	----	----	----
26	1.10	1.18	1.28	1.39	----	1.34	1.23	----	----
27	1.11	1.17	1.24	1.36	----	----	----	1.10	1.02
28	1.08	1.17	1.26	1.39	----	----	----	----	----
29	1.10	1.18	1.27	1.38	----	----	----	----	----
30	1.05	1.14	1.25	1.37	----	----	----	----	----
31	1.02	1.12	1.23	1.35	----	----	----	----	----
Averages	1.09	1.18	1.27	1.39	1.53	1.37	1.25	1.15	1.06

MADISON, WIS.

	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Jul.									
1	I 0.32	I 0.43	I 0.53	I 0.83	M 1.06	----	----	----	----
2	----	----	----	S 1.13	S 1.34	S 1.12	S 0.96	S 0.86	S 0.75
23	M .72	M .77	S .90	S 1.08	----	----	----	----	----
29	S .69	S .79	S .91	S 1.06	----	----	----	----	----
Averages	0.58	0.70	0.78	1.03	1.20	1.12	0.96	0.86	0.75

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Jul.									
1	0.60	0.70	0.80	----	----	----	----	----	----
2	.60	.80	.90	----	----	----	----	----	----
5	.40	.60	.70	----	----	----	----	----	----
6	.60	.70	.90	----	----	----	----	----	----
12	.60	.70	.90	----	----	----	----	----	----
14	.90	.90	----	----	----	----	----	----	----
19-28	Insturment malfunction								
Averages	0.62	0.73	0.84	----	----	----	----	----	----

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observation due to cloudiness								

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JULY 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	737	504	689	617	734	754	586	429	---	697	608	724	701	712	729	557	732	580	511	499	742	725	673	679	602	661	206	---	698	729	629	636
ANNETTE ALASKA	---	---	459	474	547	597	430	551	143	268	206	170	359	477	251	489	247	34	359	133	580	329	370	518	302	78	436	312	320	469	440	357
APALACHICOLA FLORIDA	705	709	646	591	352	477	595	296	178	694	695	642	585	409	400	591	504	340	551	647	336	358	208	89	316	659	652	450	679	679	667	506
ARGONNE NAT. LAB.	596	742	539	611	519	227	663	741	741	682	492	694	55	582	644	472	457	589	564	565	651	517	764	566	635	516	522	315	620	628	412	559
ASTORIA OREGON	601	---	728	688	637	398	---	---	280	386	411	580	384	515	657	779	---	454	320	461	194	531	551	432	395	725	274	433	216	512	595	487
ATLANTA GEORGIA	595	693	746	768	777	660	675	491	666	791	643	713	514	275	455	561	459	415	611	633	749	643	642	168	479	507	607	439	467	565	436	576
BARROW ALASKA	---	378	656	189	546	783	626	740	472	350	192	347	507	716	665	124	343	---	690	455	526	324	250	452	480	226	157	96	333	547	266	429
BETHEL ALASKA	638	545	307	216	519	574	503	431	696	672	700	716	696	256	240	136	280	313	458	367	203	151	224	173	102	109	176	481	584	364	160	387
BISMARCK N.DAK.	746	522	676	450	689	565	535	681	643	563	436	608	718	701	606	----	710	513	693	586	696	678	395	640	527	368	308	682	456	---	629	587
BLUE HILL MASS.	652	661	670	562	491	521	579	173	772	261	675	600	442	525	451	652	567	492	585	426	297	190	562	670	498	626	612	558	605	435	712	533
BOISE IDAHO	772	774	773	766	721	729	763	783	770	641	775	769	760	622	764	707	654	753	754	704	750	754	765	740	746	737	736	717	727	738	719	738
BOSTON MASSACHUSETTS	638	662	654	574	487	488	529	143	737	277	597	587	536	374	484	635	420	530	590	539	381	226	563	626	559	511	593	562	591	440	699	524
BROWNSVILLE TEXAS	153	184	425	524	714	678	709	424	509	---	574	608	606	652	679	643	671	601	635	644	664	650	698	654	620	644	558	566	687	660	668	590
CANTON ISLAND P.I.	560	455	567	500	536*	410*	527	564	560	557	529	497	572*	428	311	468	543	448	531	588	531	461	543	526	519	577	572	561	574	584	551	521*
CAPE HATTERAS N.C.	419	558	671	714	762	555	441	402	207	542	716	605	715	225	439	556	468	676	691	658	638	634	631	541	480	375	566	511	662	495	346	545
CARIBOU MAINE	635	580	260	420	513	504	466	71	374	636	618	715	696	522	169	377	548	347	530	488	291	459	637	616	626	608	591	519	426	319	601	489
CHARLESTON S.C.	496	691	---	622	603	685	664	424	416	376	737*	666	549	343	477	566	435	271	685	629	588	648	532	530	652	532	568	265	523	445	509	537*
CLEVELAND OHIO	559	462	613	710	686	647	476	668	595	503	666	517	566	106	572	262	533	590	290	276	640	342	560	499	477	454	455	337	251	664	577	502
COLUMBIA MISSOURI	716	538	713	591	640	457	619	732	766	614	750	273	271	751	569	722	536	694	660	689	679	244	631	703	687	618	569	287	635	681	625	602
CORVALLIS OREGON	552	706	682	611	696	415	258	441	372	522	629	742	755	439	655	495	596	736	682	389	640	588	504	572	717	637	725	750	527	590	509	585
DAVIS CALIFORNIA	767	782	781	722	696	746	768	794	780	745	765	744	738	767	779	756	751	744	770	731	770	758	774	764	764	744	734	748	758	756	743	756
DODGE CITY KANSAS	740	747	725	745	623	718	726	760	697	346	568	493	---	504	687	---	677	660	689	663	691	718	705	566	645	578	488	692	700	707	716	654
EL PASO TEXAS	799	676	761	589	696	698	482	617	775	746	751	679	737	693	760	678	736	739	740	717	770	750	747	734	726	570	598	507	374	517	575	675
ELY NEVADA	---	843	845	834	---	800	828	751	792	797	739	641	622*	719	704	801	797	799	796	685	651*	713	---	771*	786	778	769	778	767	773	771*	762*
EPPLEY.NEWPORT R.I.	668	611	645	617	460	681	703	212	697	200	679	536	554	442	593	573	572	503	593	208	372	191	209	604	620	611	599	612	586	387	685	523
FAIRBANKS ALASKA	589	715	682	583	613	764	728	402	614	700	---	535	329	244	312	332	380	282	273	546	621	334	302	455	507	144	288	517	154	560	392	463
FLAMING GORGE UTAH	728	298	550	489	679	610	721	420	---	613	599	435	684	401	510	---	718	744*	---	626	326	412	427	699	---	---	731	684	643	718	645	581*
FORT WORTH TEXAS	761	748	747	694	439	727	736	639	718	627	323	664	737	495	---	758*	762	763*	750	723	751	738	741	700	668	537	564	650	679	469	707	667*
FRESNO CALIFORNIA	768	782	777	777	760	751	742	---	751	757	737	711	716	708	712	749	759	762	740	704	732	736	733	740	735	729	713	714	720	713	705	738
GLASGOW MONTANA	765	579	707	653	511	722	686	673	600	526	666	692	745	624	679	630	745	662	694	553	707	560	694	613	736	570	633	684	683	552	696	653
GRAND JUNCTION COLO.	749	595	553	---	---	---	536	651	---	696	596	424	757	746	700	503	753	774	783	599	565	610	697	717	741	740	779	781	781	798	701	679
GREAT FALLS MONTANA	734	684	705	584	579	692	679	677	554	437	530	568	687	541	579	647	501	395	692	609	676	667	666	529	616	578	658	614	663	672	661	615
GREENSBORO N.C.	705	623	722	730	743	476	385	601	579	488	643	590	513	234	557	521	487	633	588	458	530	550	316	505	393	647	681	536	540	394	271	537
GRIFFIN EXP.STA.GA.	682	656	725	753	755	615	596	415	721	757	550	683	496	271	418	366	517	311	560	627	739	662	672	231	481	498	617	549	574	500	522	565
INDIANAPOLIS INDIANA	445	566	696	623	636	204	407	678	765	753	692	693	100	610	652	683	645	637	486	585	687	503	519	642	651	585	568	425	517	688	598	579
ITHACA NEW YORK	634	441	281	734	698	626	244	497	666	367	558	650	585	344	403	547	513	441	337	177	595	549	495	651	603	518	544	494*	494*	541	651	512*
LAKE CHARLES LA.	---	452	638	417	488	646	---	614	467	522	272	331	570	617	623	682	633	431	625	611	643	633	---	---	---	---	---	---	---	---	---	---
LANDER WYOMING	748	459	410	616	673	587	516	539	489	673	771	754	742	637	661	570	653	743	736	669	289	833	445	617	719	436	650	721	569	712	662	622
LARAMIE WYOMING	464	348	453	634	595	486	522	445	345	570	419	444	647	494	488	466	490	631	680	562	516	357	524	599	625	534	537	669	590	664	655	531
LAS VEGAS NEVADA	806	826	808	819	703	790	788	681	638	742	767	778	717	762	747	765	794	798	694	656	584	740	737	756	775	789	761	765	775	755	684	748
LITTLE ROCK ARKANSAS	589	500	499	609	568	590	365	503	579	561	532	329	352	111	525	545	565	548	621	567	456	380	395	399	367	347	251	388	281	231	546	455
LOS ANGELES CALIF.WB	731	757	743	748	647	610	553	670	659	624	675	684	706	697	650	606	639	706	676	644	666	664	650	699	673	597	688	652	643	609	618	664
LOS ANGELES CALIF.CO	746	797	789	796	692	723	581	721	732	713	753	772	789	763	693*	731	688*	752*	720	671	729	699	742	748	720	634	767	711	698	699	631	723*
MANHATTAN KANSAS	686	617	643	623	660	487	647	603	488	181	50	89	610	665	560	656	643	584	637	655	624	606	673	640	580	584	277	302	648	638	487	543
MAUNA LOA OB.HAWAII	608	475	638	778	831	844	844	849	739	762	843	757	851	823	841	864	859	445	407	547	847	776	843	836	568	725	656	459	428	767	564	712
MEDFORD OREGON	694	675	640	606	592	313	257	788	755	695	755	739	727	722	739	----	605	732	705*	672	741	663	685	670	735	727	722	723	739	735	709	675*
MIAMI FLORIDA	600	656	683	587	572	660	588	692	454	686	336	553	664	639	594	567	638	605	585	647	525	495	617	660	714	644	713	678	560	583	639	607
MIDLAND TEXAS	697	679	364	411	605	618	424	648	678	708	713	699	---	---	---	---	706	723	718	698	713	714	712	---	---	702	609	229	---	665	685	630
NASHVILLE TENNESSEE	463	283	627	638	637	459	326	520	636	689	646	625	62	500	564	459	545	311	625	372	581	559	518	465	292	414	517	425	366	476	518	488
NORTH OMAHA NEBRASKA	727	706	715	725	302	671	639	426	751	223	295	163	657	689	663	542	695	690	717	699	725	699	664	561	635	686	233	667	731	186	665	585
OAK RIDGE TENNESSEE	472	449	548	648	669	247	124	521	643	506	629	629	321	403	528	265	490	328	503	124	626	552	259	455	333	550	491	313	240	333	305	436
OKLAHOMA CITY OKLA.	683	621	678	654	672	665	494	625	663	319	335	420	352	632	575	666	624	661	674	623	538	663	664	564	561	558	162	372	411	596	653	561
PAGE ARIZONA	579	---	461	576	574	624	587	508	360	424*	399	604	580	602	519	605	---	---	688	516	612	499	632	650	663	682	679	661	667	671	586*	579*
PHOENIX ARIZONA	713	717	656	689	707	726	704	512	620	504	674	703	708	703	677	622	679	678	653	658	686	620	662	660	660	630	655	661	666	645	489	656
PORTLAND MAINE	600	612	533	445	444	521	574	76	710	410	644	690	694	346	391	632	618	447	529	515	192	476	683	670	582	644	568	577	507	419	685	532

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

JULY 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PROSSER WASHINGTON	775	762	803	801	704	641	333	689	563	685	809	809	805	780	821	654	681	797	696	743	793	752	777	529	745	759	---	---	---	---	---	719
RAPID CITY S.DAK.	739	483	481	509	472	456	652	668	403	568	614	561	660	666	691	657	567	593	640	572	543	459	436	574	589	304	346	665	429	571	641	555
RIVERSIDE CALIFORNIA	797	823	820	800	701	717	661	791	763	670	754	759	769	784	757	788	784	779	738	708	735	754	743	747	747	755	762	732	724	711	608	748
SAINT CLOUD MINN.	617	790	673	668	505	600	702	632	674	699	564*	305	544	530	540	411	662	336	629	653	684	714	585	121	481	510	168	589	648	433	696	560*
SALT LAKE CITY UTAH	767	664	813	812	779	436	737	610	563	813	800	788	805	---	---	774	794	794	783	714	451	555	---	784	779	781	781	771	778	763	514	721
SAN ANTONIO TEXAS	457	306	520	608	578	667	674	714	698	623	579	671	647	662	694	642	643	606	583	671	668	695	596	673	658	536	587	605	661	571	610	616
SANTA MARIA CALIF.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SAULT STE MARIE MICH	624	770	---	---	719	477	713	802	783	768	717	601	250	88	561	613	188	707	561	686	651	610	685	660	585	619	606	420	371	651	79	571
SEATTLE WASH. UNIV.	28	658	653	773	575	251	519	738	514	259	727	801	561	156	420	646	424	646	392	498	307	572	520	185	575	664	666	487	555	261	205	524
SEATTLE TACOMA WASH.	646	560	---	548	524	239	345	580	373	387	288	700	605	393	513	675	360	726	320	504	331	490	503	313	619	696	706	546	610	343	199	488
SHREVEPORT LOUISIANA	537	671	667	518	717	693	707	532	473	525	531	375	579	401	455	674	666	593	584	629	574	631	574	619	419	262	338	483	598	509	583	552
SPOKANE WASHINGTON	773	609	597	930	668	634	704	533	614	302	430	698	720	677	636	721	473	707	715	661	726	535	720	371	378	712	671	720	718	653	698	636
STATE COLLEGE PENN.	678	423	676	792	779	708	451	720	725	529	509	550	622	91	495	504	604	495	489	433	522	594	474	529	625	672	550	352	403	730	721	563
STERLING VIRGINA	691	553	709	784	753	730	---	634	752	---	628	615	632	86	625	594	665	633	525	527	574	505	464	534	626	639	584	334	451	550	498	583
STILLWATER OKLAHOMA	708	608	701	716	711	625	627	691	707	328	182	474	547	615	422	705	512	704	711	660	675	704	703	596	623	627	58	335	563	691	699	588
TAMPA FLORIDA	607	540	672	619	720	603	658	632	513	248	456	583	523	706	593	516	634	617	588	696	464	240	173	551	544	601	---	609	675	633	693	564
TUCSON ARIZONA	709	657	610	714	729	740	698	604	555	418	633	715	715	714	680	683	690	590	689	679	555	644	669	---	681	385	415	571	681	624	---	636

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont. during the month JULY 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	503	298	479	512	324	381	442	448	323	466	430	348	446	236	309	436	406	306	425	384	452	245	398	347	405	-21	422	415	363	366	412	378

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code λsΩΩΩ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	00326	00295	00300	00301	00303	00307	00318	00330	00318	02346	00325	00335	00391	00322	05326	00334	00320	00330	00350	00324	00317	00310	00320	00308	00301	06322	04316	00311	00315	00327	00311	321
Caribou, Maine	00325	00319	05359	05396	00415	00379	00360	-----	05322	00362	00368	00382	-----	32320	35387	00364	00368	05346	00355	-----	-----	00333	00350	00330	00327	00315	00271	00305	00314	00314	00334	345
Green Bay, Wis.	00322	00325	00296	00328	00326	00339	00351	00376	00384	00367	00337	00339	-----	35371	00342	00343	00339	00328	00336	00345	00371	00368	00333	00325	00327	00326	00322	00323	00324	00314	00348	339
Mauna Loa, Hawaii	00288	-----	00272	00271	00277	00280	00279	00282	00282	00287	00280	00280	00288	00282	00281	00285	00289	00294	00294	00285	00280	00285	00281	00282	00285	00289	00284	00284	00280	00283	00284	283
Midland, Texas	00310	00302	05296	00288	00298	00310	05283	00303	00289	00289	00308	00302	00307	05277	-----	00290	00281	00280	00295	00284	00288	00289	00297	00294	00292	00291	05290	05276	00288	00293	00290	293
Nashville, Tenn.	00341	00342	00312	00312	00304	00306	05335	05336	00375	00362	00361	00331	-----	00302	00309	00316	00316	00326	00322	05338	00361	00351	00349	00366	00346	00326	00320	00349	05329	04293	00317	332
Sterling, Va.	00326	00320	00312	00336	00351	00339	00335	00358	00352	00379	00377	00384	00397	-----	00327	00322	00324	00308	00311	00323	00339	00349	35367	00349	00346	00328	00328	20328	36345	00315	35355	341

The spectrophotometer measures the total amount of ozone in the atmosphere, i e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded ΩΩΩ) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code λs designates the type of measurement made

DESCRIPTION of CHARTS

CHART I., A. AVERAGE TEMPERATURE (°F.) AT SURFACE. B. DEPARTURE OF AVERAGE TEMPERATURE FROM NORMAL. -The average monthly temperature presented in Chart I-A is computed from the average daily maximum and the average daily minimum which in turn are computed from the daily maximum and minimum temperatures reported by some 870 Weather Bureau and cooperative stations. The departures from normal are presented in Chart I-B. They are based on the 30-year normals (1931-60) for the first-order Weather Bureau stations.

CHART II. TOTAL PRECIPITATION. - Chart II is based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

CHART III. PERCENTAGE OF NORMAL PRECIPITATION. -In this chart the anomaly in the month's precipitation is shown as a percentage of the normal total. This anomaly shows the deviation from the 30-year normal (1931-60) for about 270 first-order Weather Bureau stations.

CHART IV. TOTAL SNOWFALL. CHART V. A. PERCENTAGE OF MEAN MONTHLY SNOWFALL. B. DEPTH OF SNOW ON GROUND. -Chart IV gives the total depth in inches of unmelted snowfall as reported during the month by Weather Bureau and cooperative stations. This is converted in Chart V-A into a percentage of the mean monthly total amount computed for each Weather Bureau station having at least 10 years of record. The depth of snow on ground is that reported by both Weather Bureau and cooperative stations as of 7:00 a. m. Eastern Standard Time on the Monday nearest the end of the month. This is reported only for the months December through March. The snowfall charts are presented each month November through April.

Isolines for Charts I, II, III, IV, and V, are drawn through points of approximately equal value. Caution should be used in interpolating on these charts, particularly in mountainous areas.

CHART VI. A. PERCENTAGE OF POSSIBLE SUNSHINE. B. PERCENTAGE OF MEAN MONTHLY SUNSHINE. -CHART VI-A shows the amount of sunshine received in terms of percentage of the total hours of sunshine possible during the month. In Chart VI-B this is shown as a percentage of the mean number of hours of sunshine received. Means are computed for Weather Bureau stations having at least 10 years of record.

CHART VII. A. AVERAGE DAILY VALUES OF SOLAR RADIATION, LANGLEYS. B. PERCENTAGE OF MEAN DAILY SOLAR RADIATION. -Shown on Chart VII-A are the monthly averages of daily total solar radiation, both direct and diffuse, in langleys (gm. cal. cm.$^{-2}$) for all Weather Bureau stations which record this element.

Chart VII-B shows the percentages of the mean based on at least 5 years of record during the period 1950-1960.

CHART VIII. -TRACKS OF CENTERS OF ANTICYCLONES AT SEA LEVEL.

CHART IX. TRACKS OF CENTERS OF CYCLONES AT SEA LEVEL. -Centers which can be identified for 24 hours or more are tracked in these charts. Semi-permanent features such as the Great Basin and Pacific Highs and Colorado and Mexico Lows are not shown. The 7:00 a. m. EST positions are shown by open circles, with the intermediate positions at 6-hour intervals shown by solid dots. The date is given above the circle and the central pressure to whole millibars below. A dashed track indicates a regeneration rather than actual movement to the next position. Solid squares indicate position of stationary center for period shown beside it.

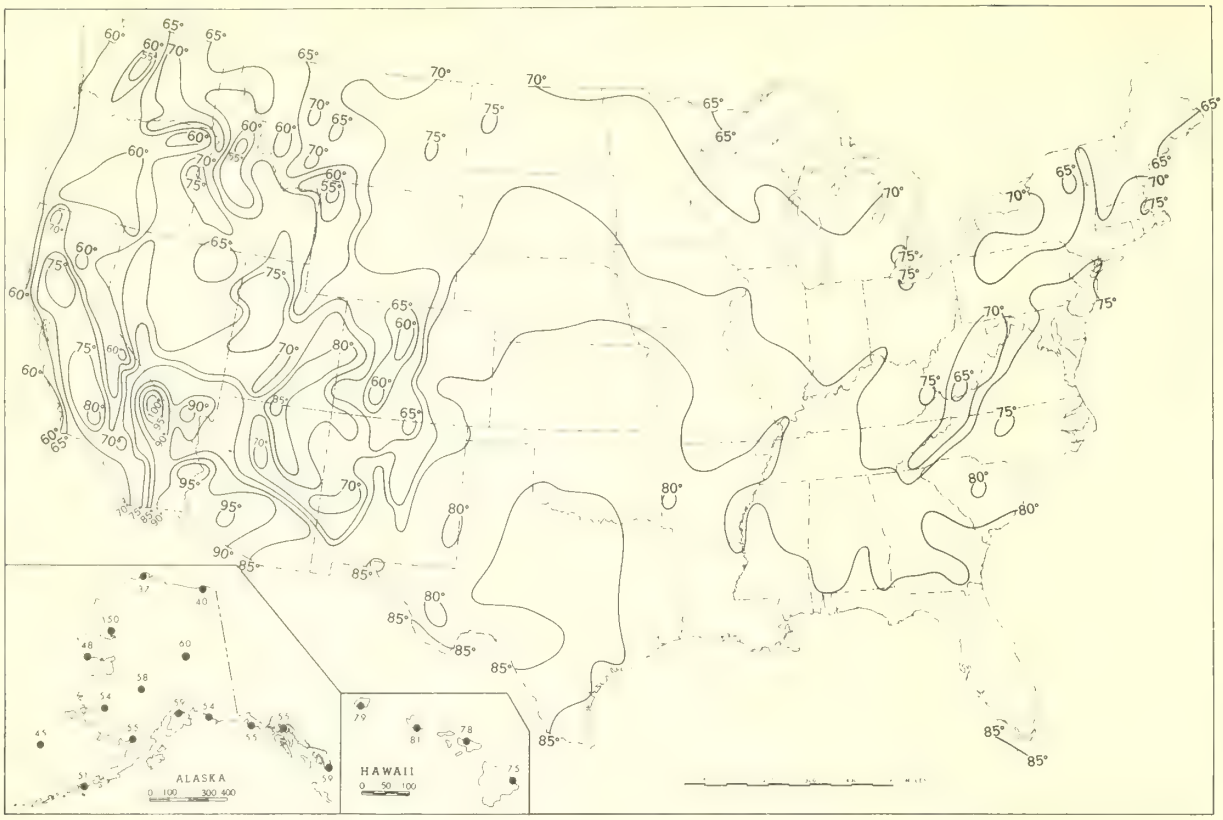
CHART X. AVERAGE SEA LEVEL PRESSURE (mb.) AND SURFACE WINDROSES. -The average monthly sea level pressure is obtained from the averages of the 7:00 a. m. and 7:00 p. m. EST pressures reported at Weather Bureau stations. Windroses are based on the hourly wind directions (to 16 points of the compass) reported by Weather Bureau stations, each circle or arc indicating 5 percent of the time. The inset shows the departure of the average pressure based on 30-year normals for first-order Weather Bureau Stations, other stations having at least 10 years of record, and, for each 10° intersection in a diamond grid over the oceans, from interpolated values read from the Historical Weather Maps for the 20 years of best coverage prior to 1940.

CHARTS XI-XVI. AVERAGE HEIGHT, TEMPERATURE, AND RESULTANT WINDS, 850, 700, 500, 300, 200, and 100 mb. -Height is given in geopotential meters and temperature in degrees Celsius. These are the averages of the 1200 GMT radiosonde reports. Wind speeds are given in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. Directions are shown to 360° of the compass. Winds are based on rawins at the indicated pressure surface and at 1200 GMT.

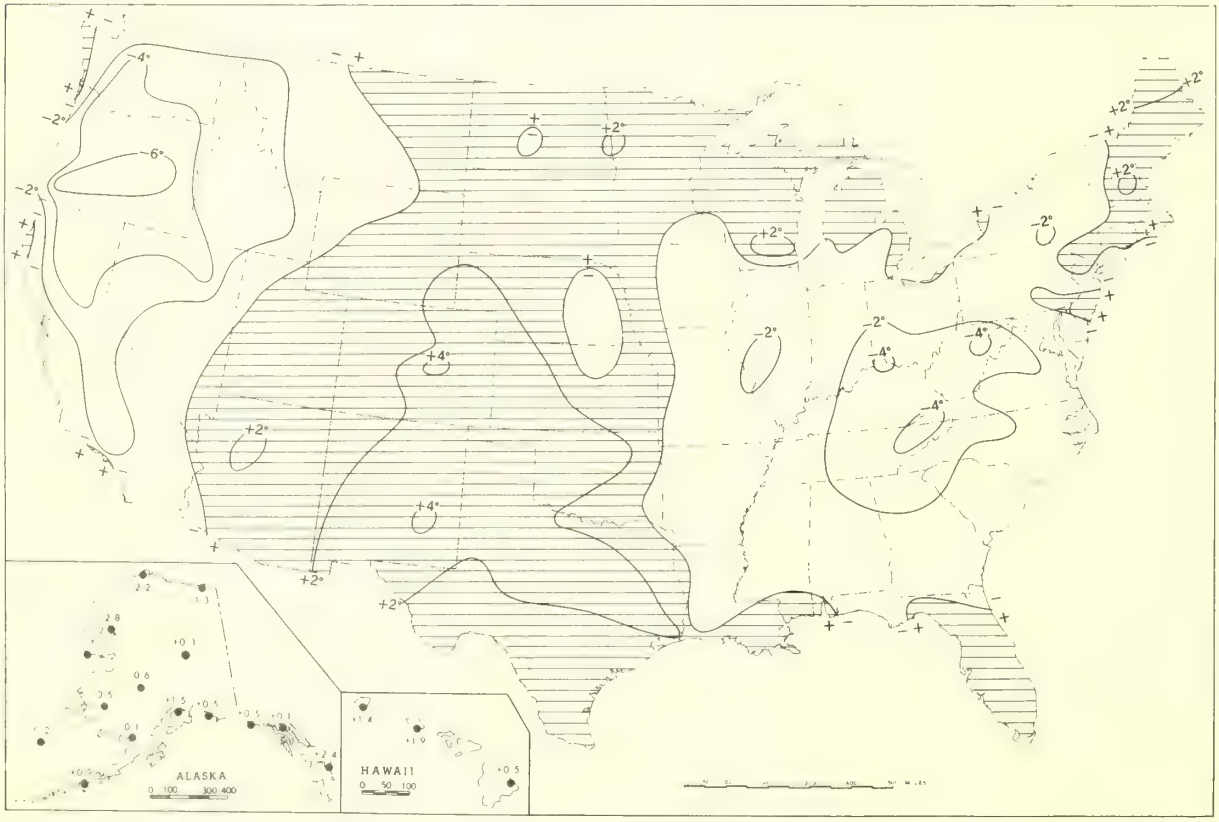
CHART XVII. A. 50-MB. RESULTANT WINDS. B. 30-MB. RESULTANT WINDS. -Wind speed (isotachs) in knots. Arrows show resultant wind direction. Winds are based on rawins at the indicated pressure surface and at 1200 GMT.

Exact values of most of these charted elements for Weather Bureau stations are printed each month in tabular form in CLIMATOLOGICAL DATA, NATIONAL SUMMARY. Extreme values of temperature and precipitation for each state are included in the tables, Condensed Climatological Summary. Annual averages for surface elements are presented in the CDNS Annual Issue each year.

Chart I. A. Average Temperature (°F.) at Surface, July 1963.



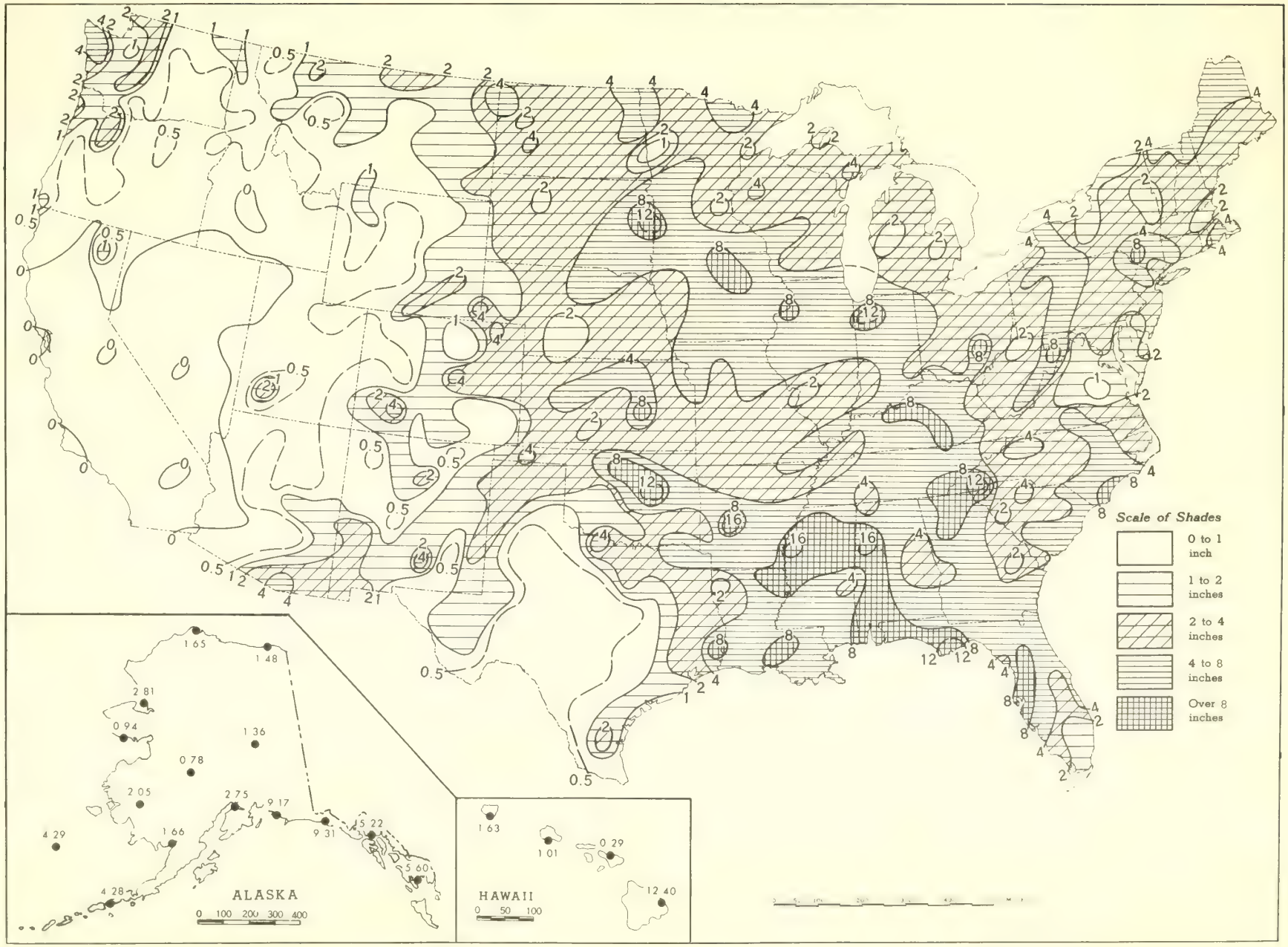
B. Departure of Average Temperature from Normal (°F.), July 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

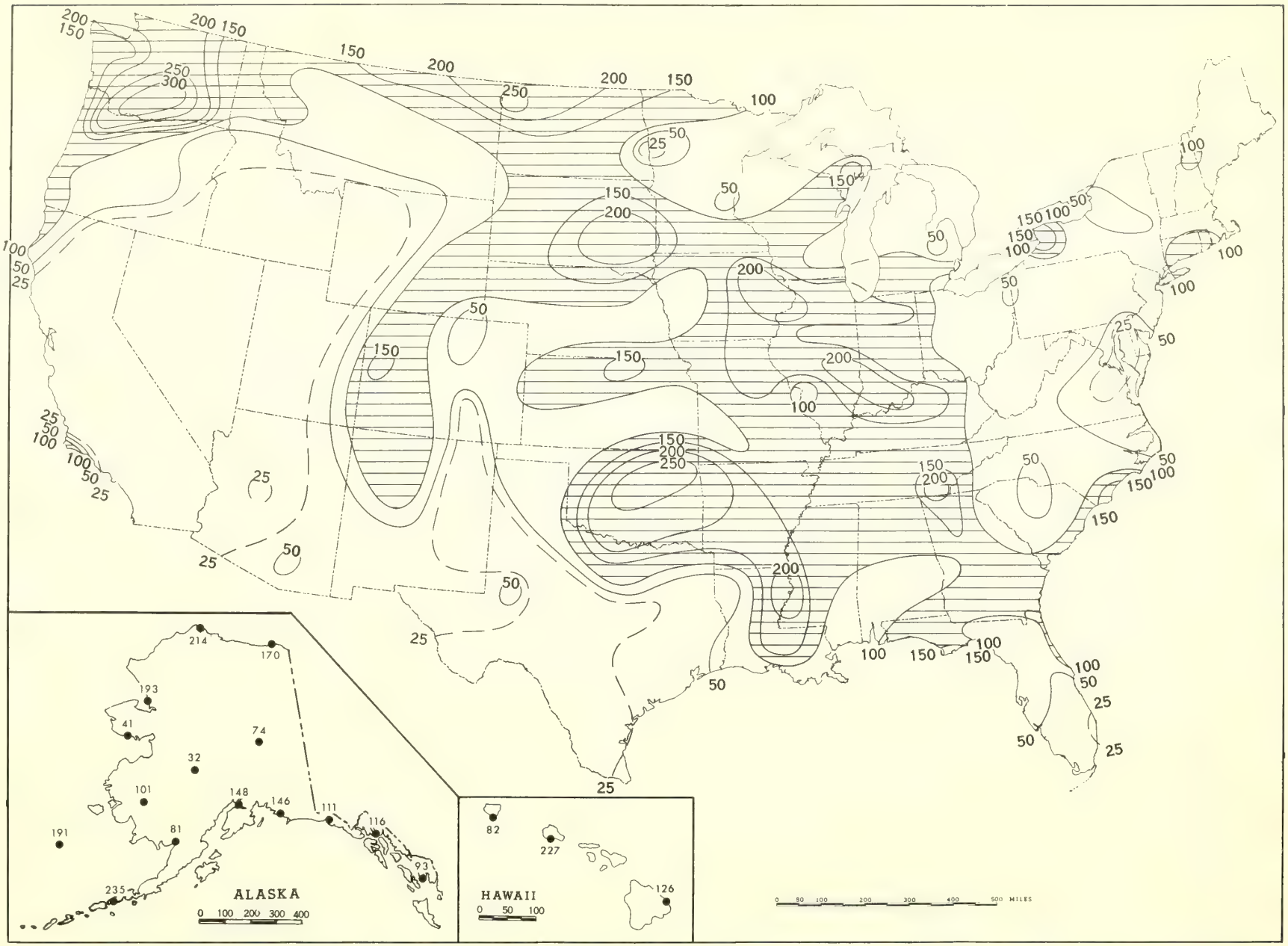
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), July 1963.



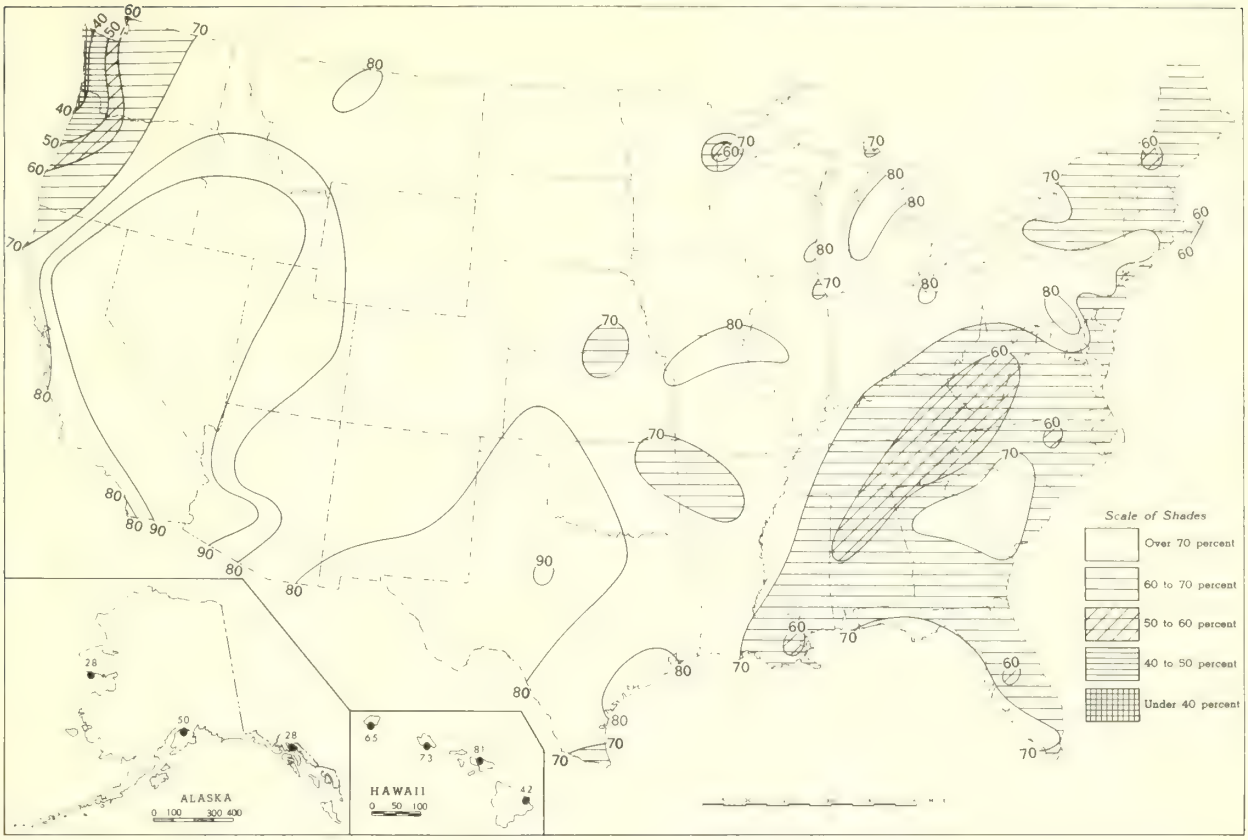
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, July 1963.

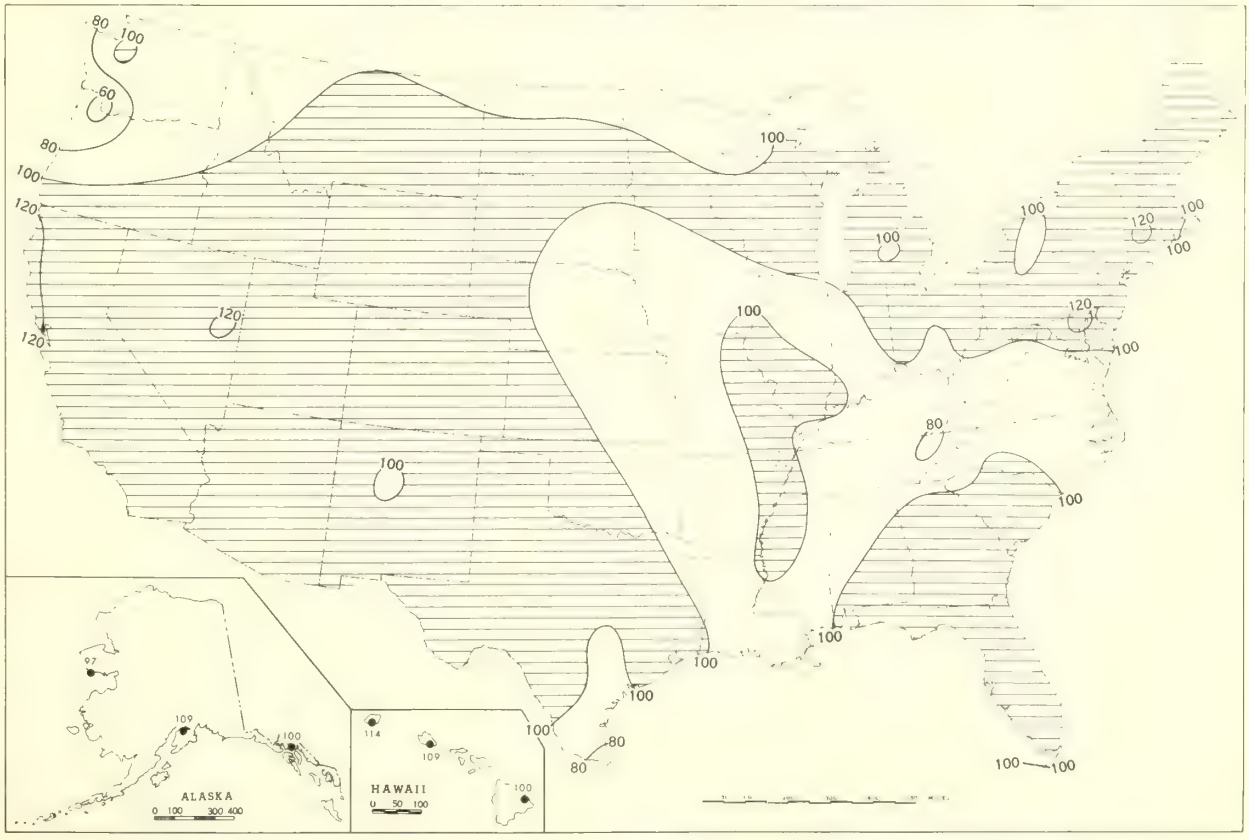


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, July 1963.

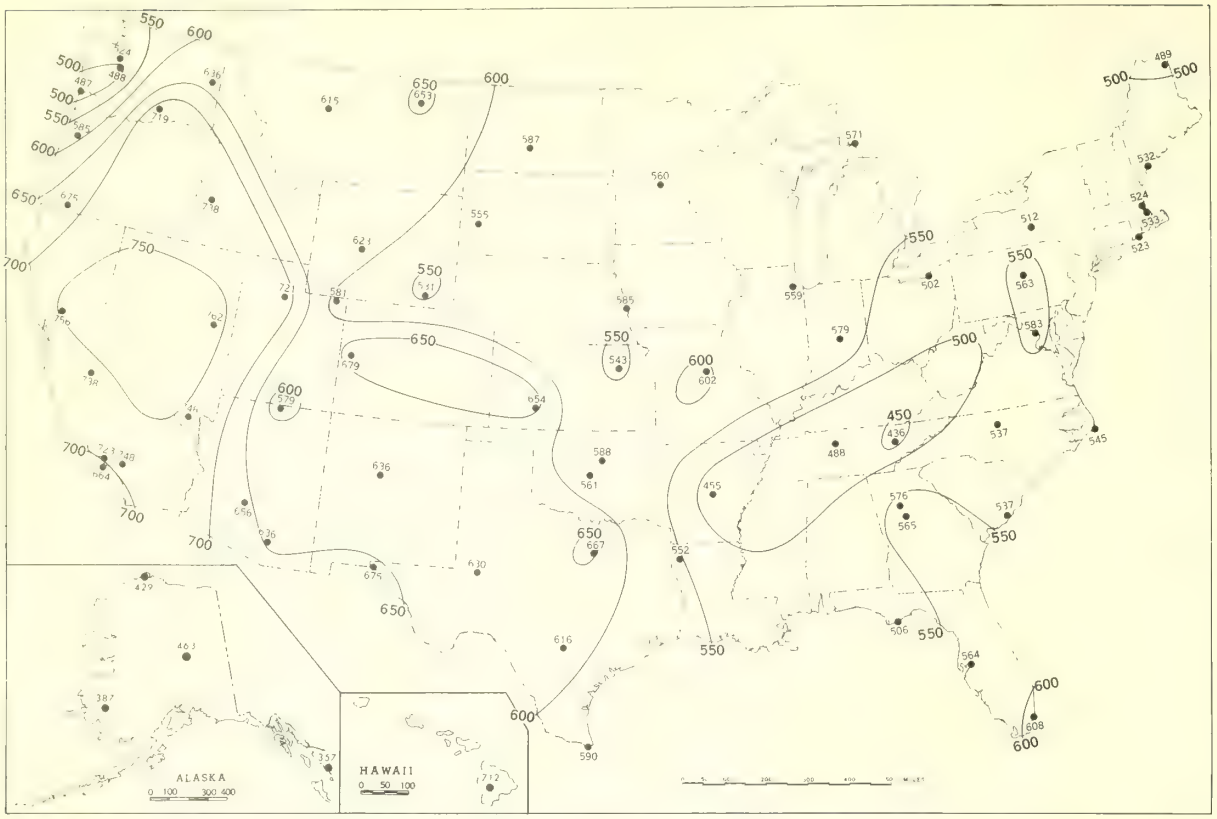


B. Percentage of Mean Monthly Sunshine, July 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, July 1963.

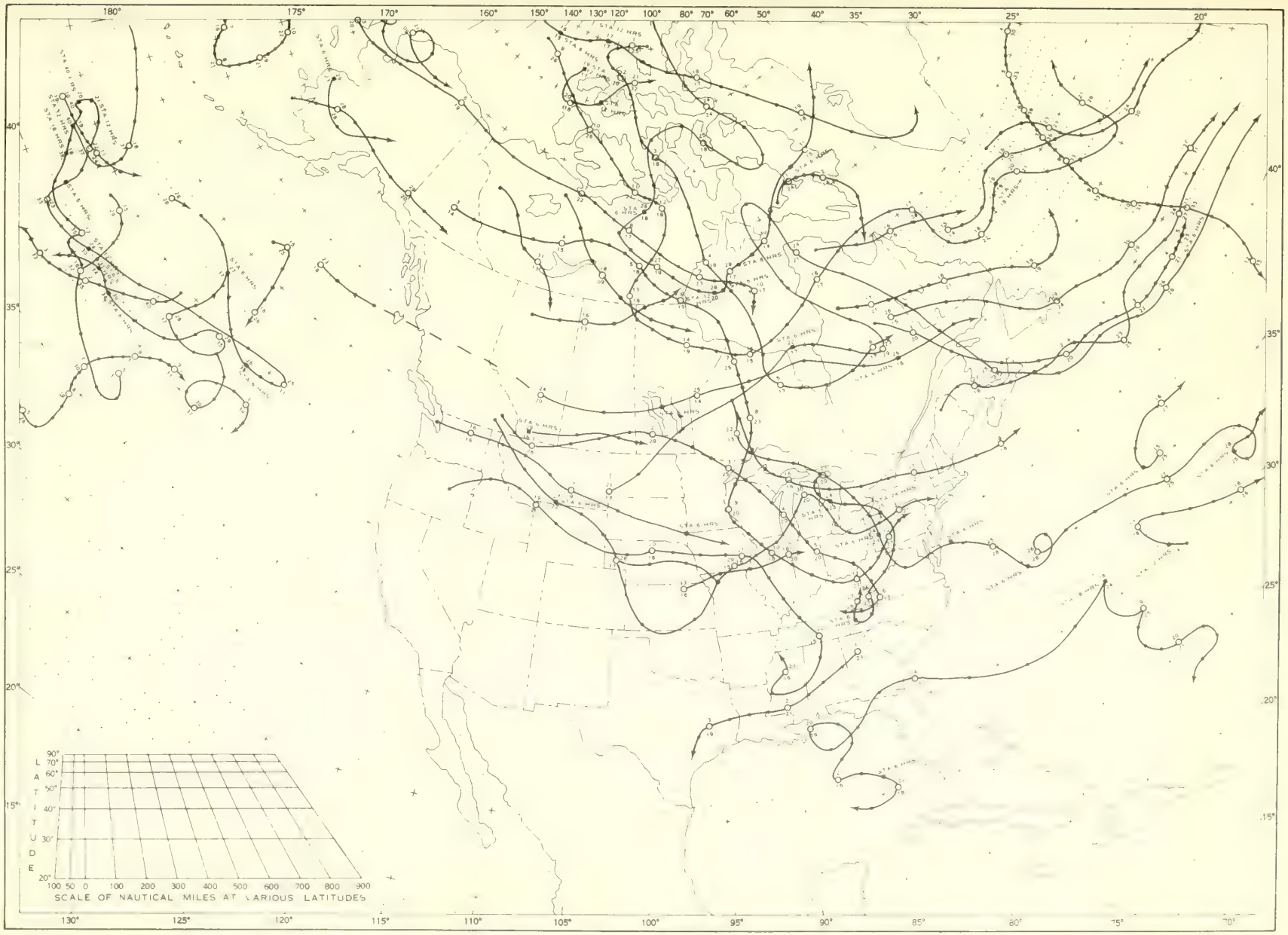


B. Percentage of Mean Daily Solar Radiation, July 1963.



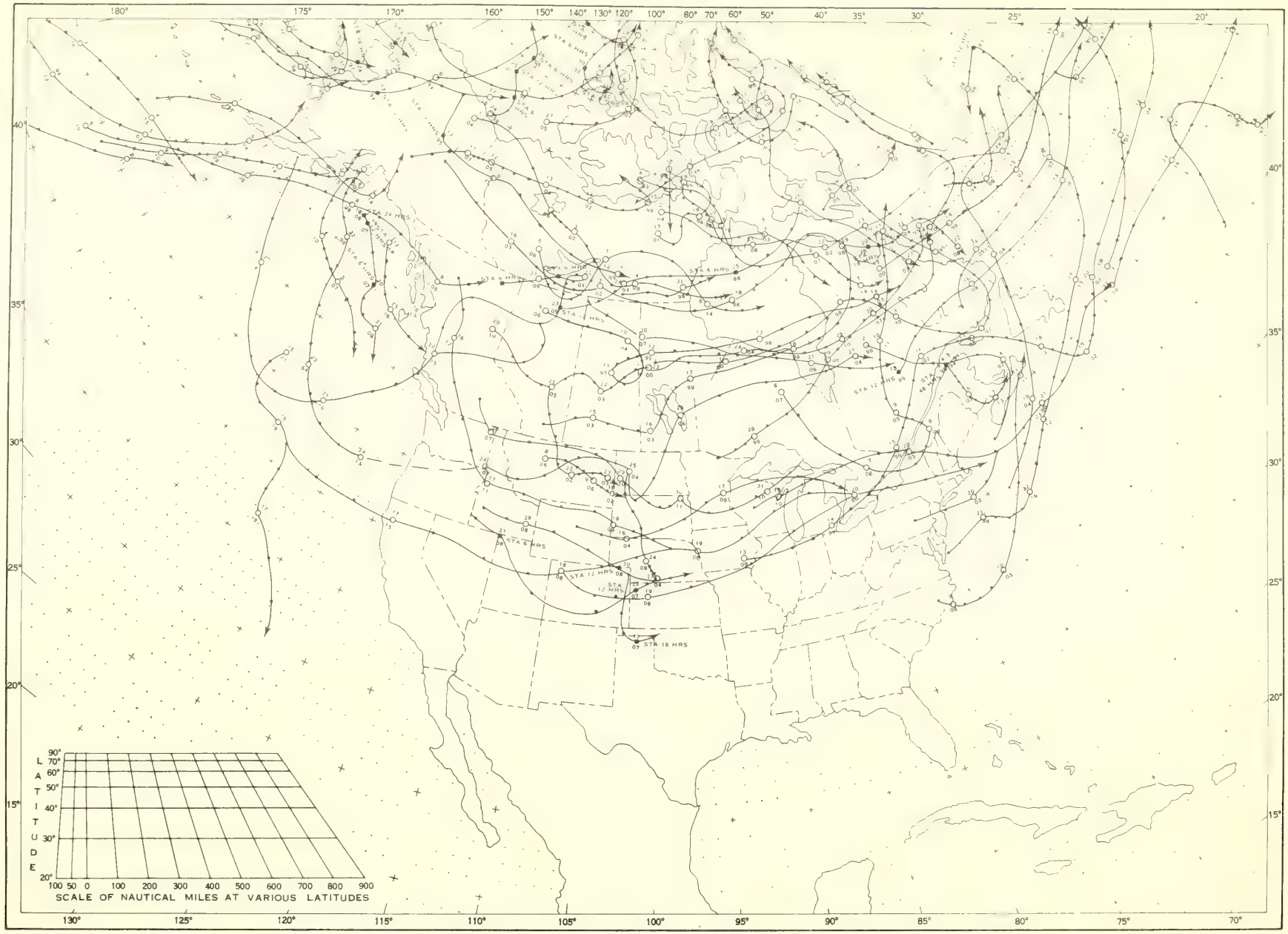
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, July 1963.



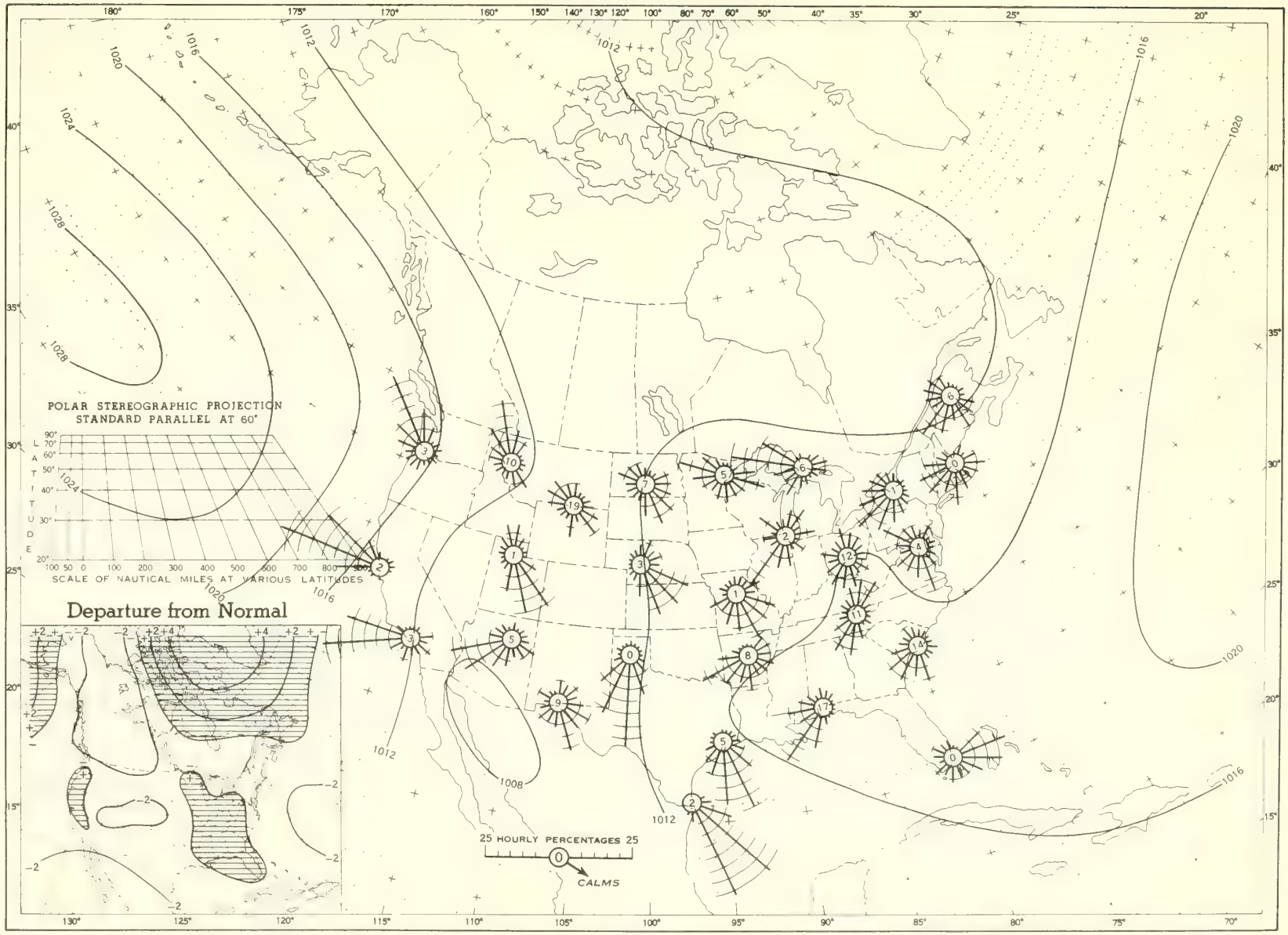
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, July 1963.



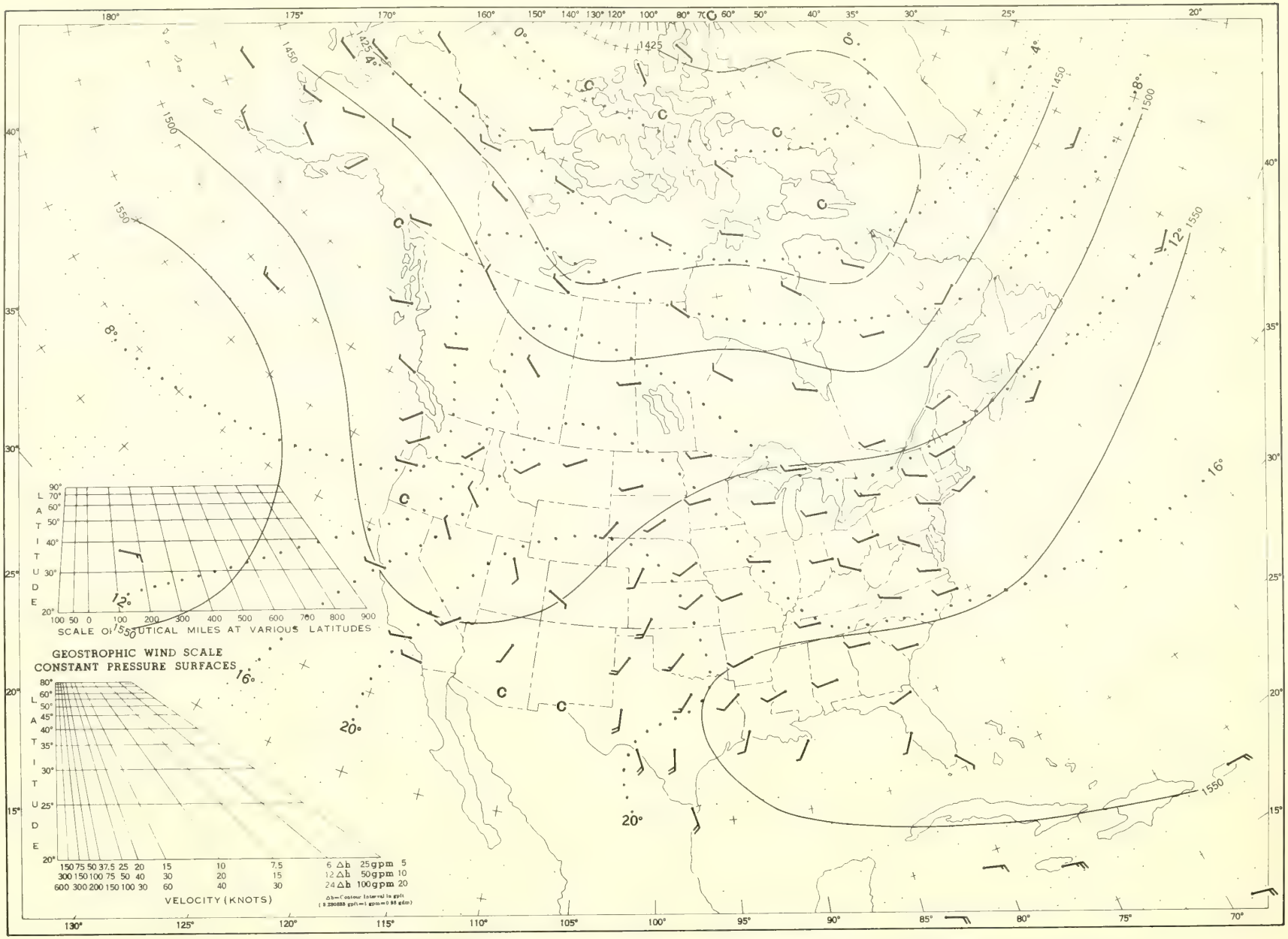
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, July 1963. Inset: Departure of Average Pressure (mb.) from Normal, July 1963.



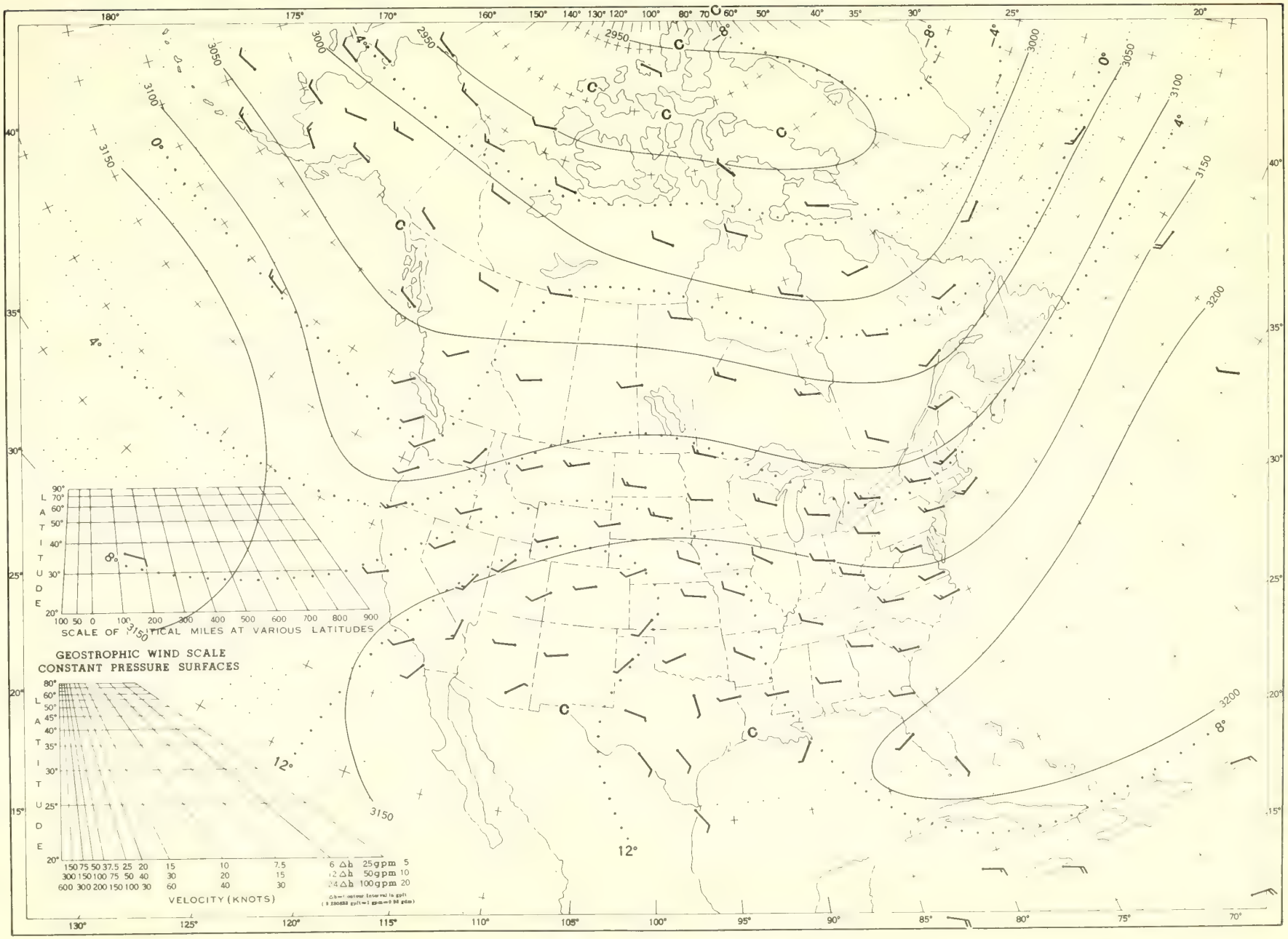
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.



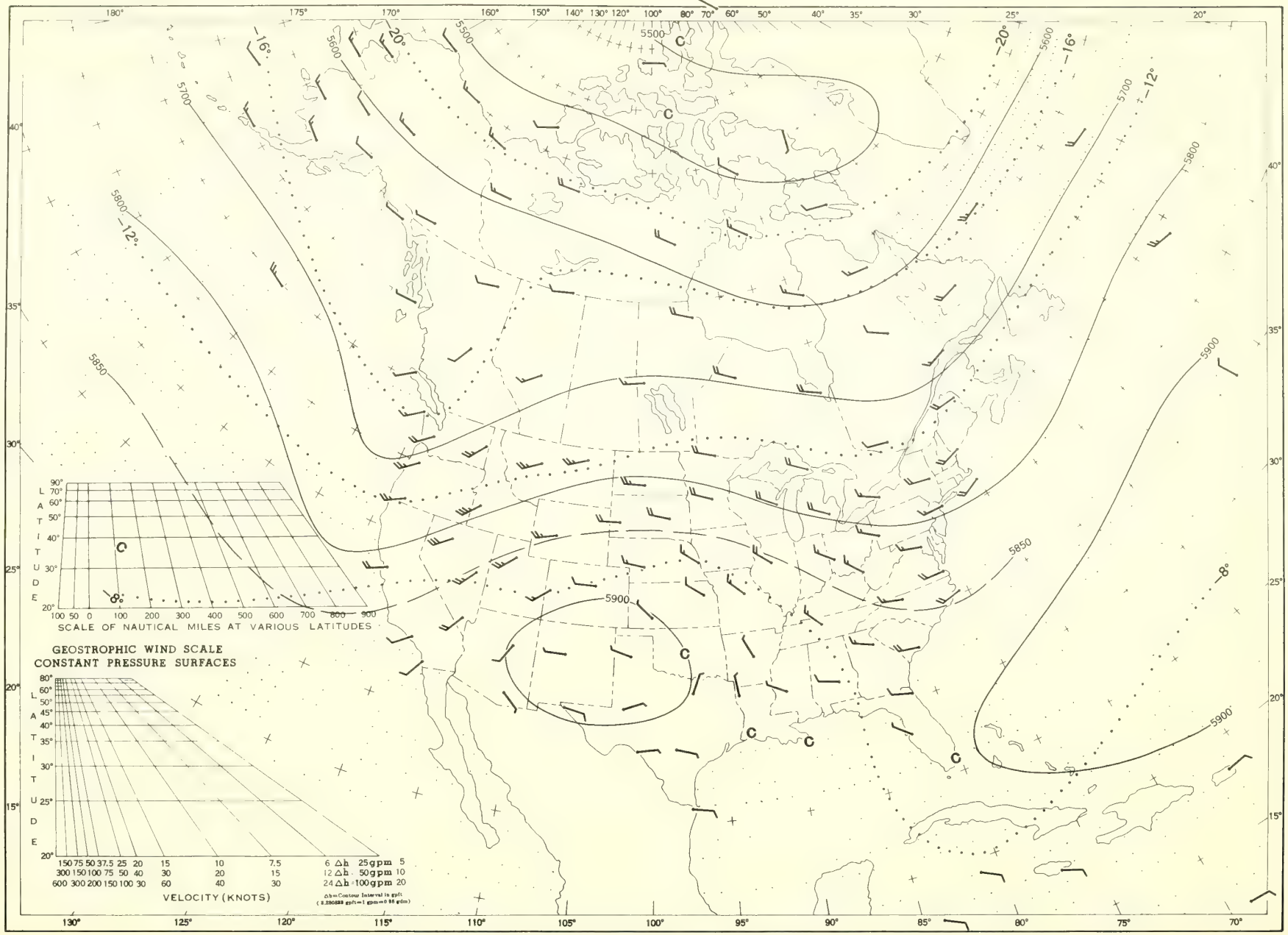
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.



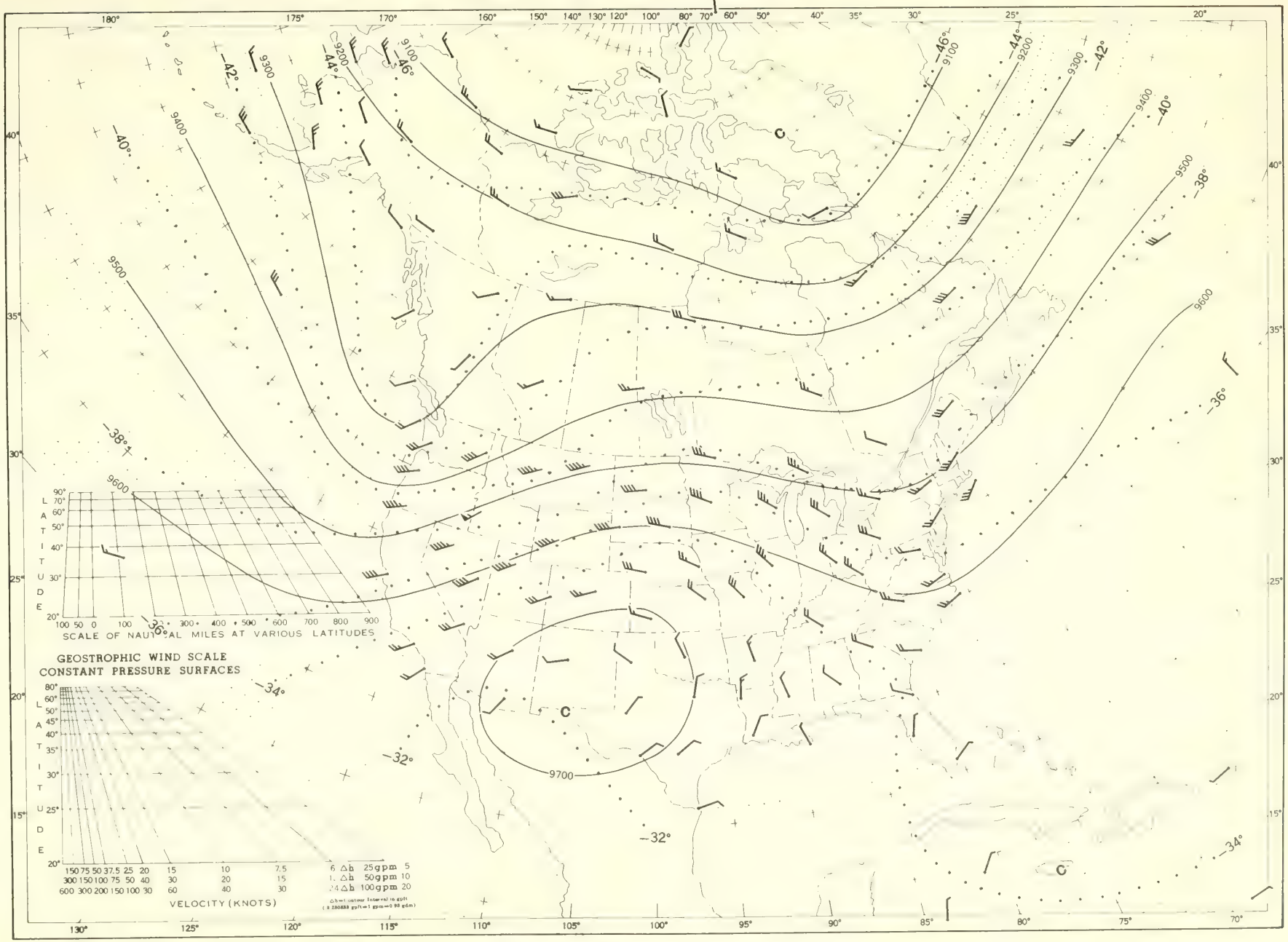
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.



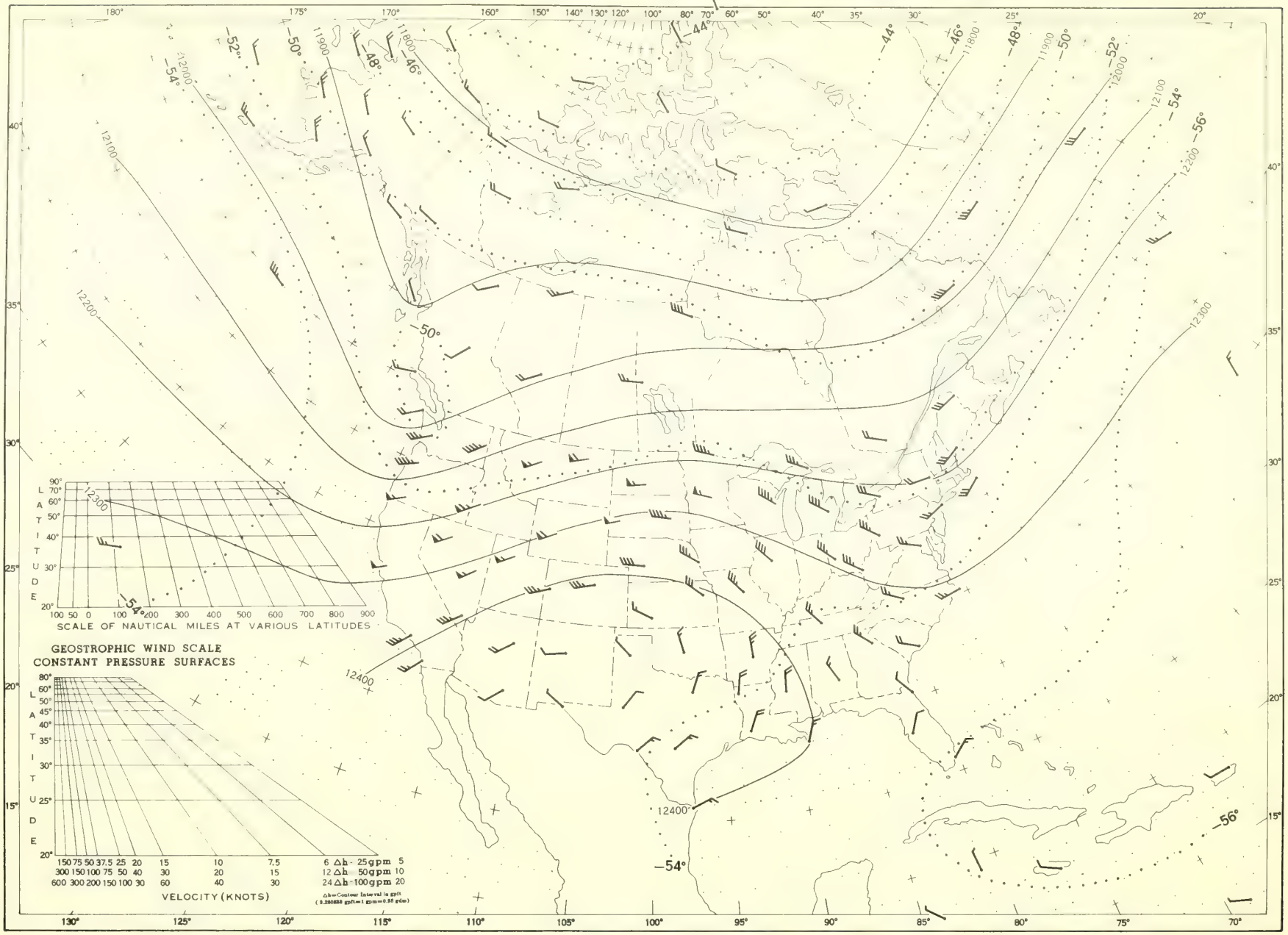
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.



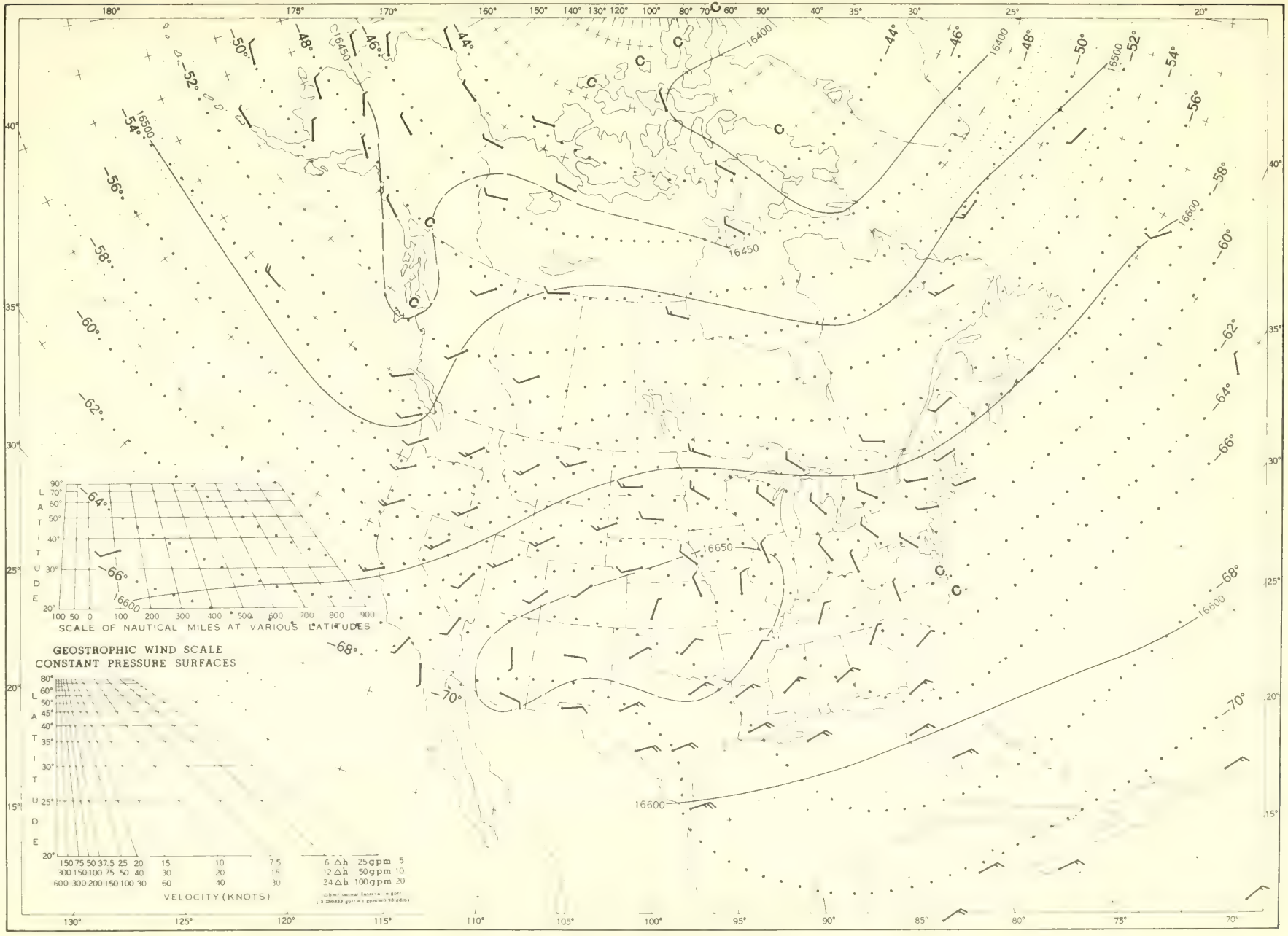
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.



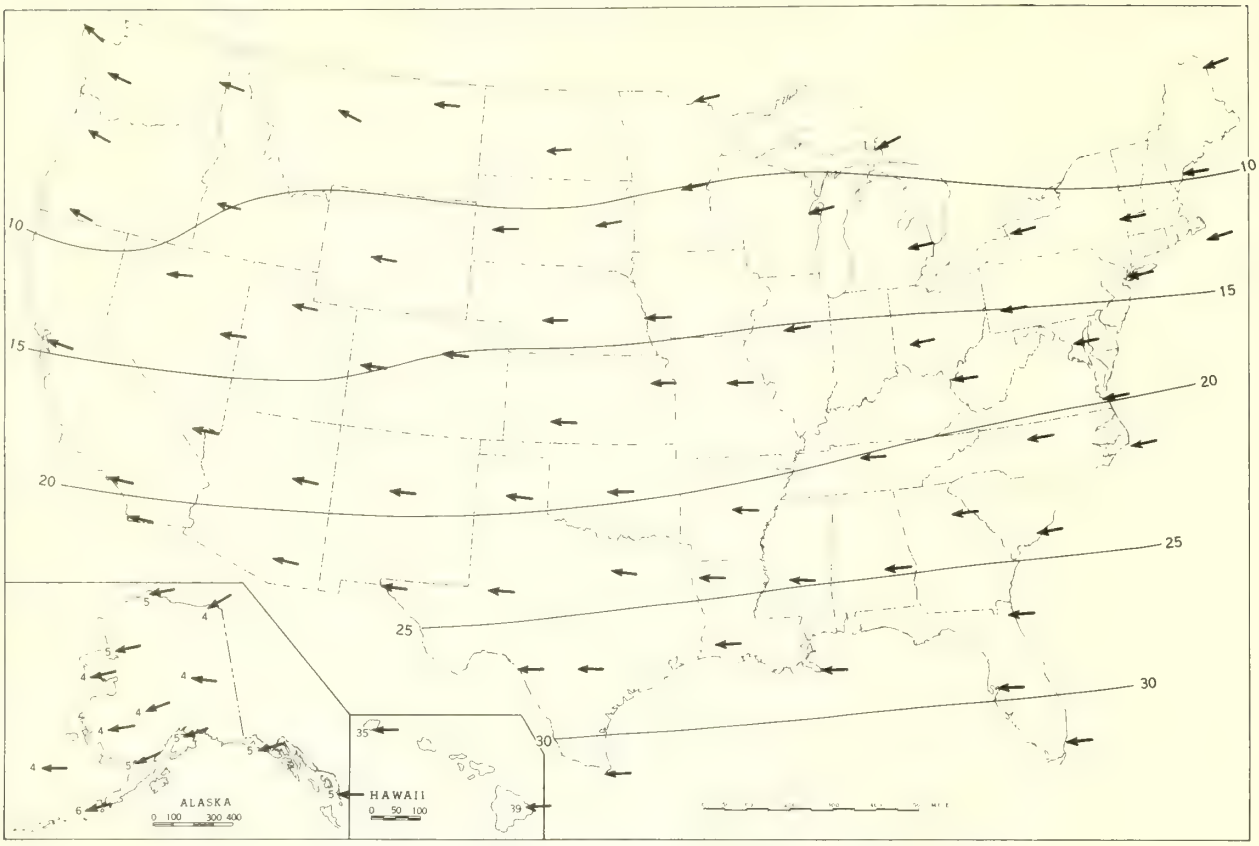
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, July 1963. Average Height and Temperature, and Resultant Winds.

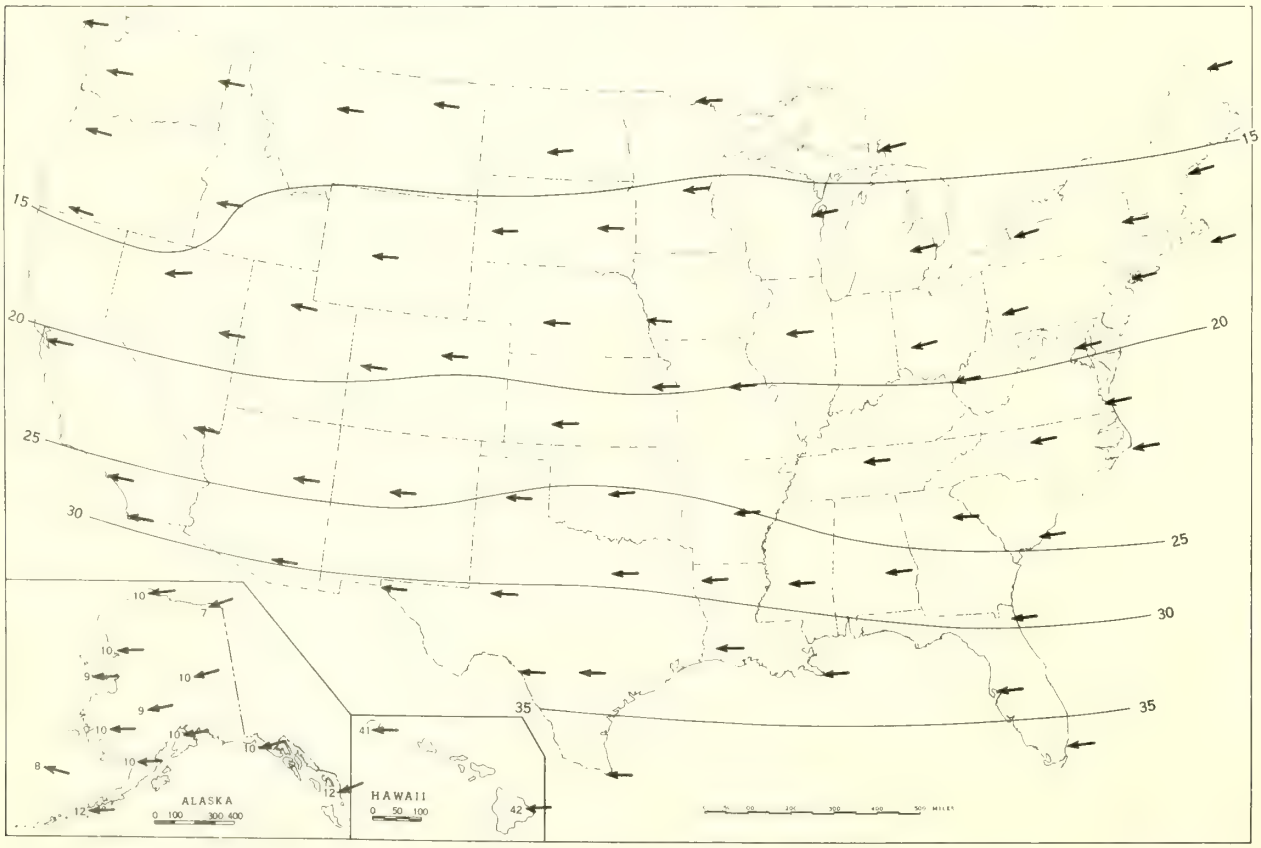


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, July 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, July 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM--WB--ASHEVILLE---10-25-63---1825

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

CLEMSON COLLEGE
DEC 16 1963
SCI., TECH. & AGR. DIV.

AUGUST 1963
Volume 14 No. 8

ASHEVILLE: 1963

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 8 AUGUST 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

At the beginning of the month, a slow moving, low pressure area was centered over the Nation's midsection. It produced some gusty winds and generous showers over the northern Plains and Prairies, as it moved eastward from the Ohio Valley to New England.

Widespread wind and lightning damage occurred in the northwest suburbs of Chicago on the morning of August 2. Hail fell in the northern suburbs and funnel clouds were seen. Heavy rain flooded basements and viaducts. On August 7, Buffalo, N. Y., received 3.88 inches of rain in 6 hours. The heavy rain caused flood damage estimated at $35 million.

Warm temperatures prevailed over most of the rest of the Nation. Afternoon temperatures over the sunny South climbed into the 90's almost daily and frequently exceeded 100° over the southwestern deserts. Maximum temperatures exceeded 90° from interior California across the Great Basin to the Rocky Mountains.

Early in the second week of August, cool Canadian air began spilling across the North Central and Northeastern States. High pressures spread fair and mild weather over the northeastern quarter of the Nation.

About the middle of the second week, a storm developed over the northern Great Plains. Fronts extended southwestward to New Mexico and southeastward to Jacksonville, Fla. This system furnished light precipitation to the central and southern Rocky Mountains and generous showers over the Lakes region and the Ohio River Valley. The storm maintained its intensity as it crossed the eastern Great Lakes. Gale winds at Erie, Pa., blew branches and trees across electric lines, causing power failures.

As the rains continued in the Northeast and along the Gulf, a high pressure area dominated the North Central States, accompanied by sunny skies and unseasonably cool temperatures. The cool weather spread southward and, by the 14th, made its influence felt nearly to the Gulf of Mexico. On August 13, the mercury at Shreveport, La., climbed to 103°; on the following day, it reached a relatively mild 86°.

Another cold front moved into the Pacific Northwest at midmonth. It set off scattered thunderstorms over an area where unusually high temperatures had prevailed during the first half of August. A low pressure area developed over eastern Montana. It produced scattered thunderstorms over the northern Great Plains and upper Mississippi Valley as it moved eastward and intensified.

Another front draped across the Florida Peninsula set off heavy thunderstorms, a tornado, and several waterspouts.

Near the end of the third week, a cold front produced light precipitation over the Rockies from Montana to New Mexico. A stationary front produced abundant rains from the southern Great Plains and Ohio River Valley eastward to the Atlantic. High pressure, mild temperatures, and sunny skies prevailed from Texas northeastward to the Great Lakes. Temperatures increased over the central and southern Plains. Oklahoma City, Okla., registered 105° on the 24th. Disturbances brought more light showers to the southern Rockies and moderate showers to the northern Great Plains at the end of the fourth week. During the last few days, a cold front set off generous rains from Texas across the southern Great Plains and northeastward to New England.

Thunder or lightning occurred at Phoenix, Ariz., on everyday except three. The highest temperature at Tucson, Ariz., was 98°, the first August in 40 years that the mercury did not reach 100°. Ft. Worth, Tex., received 2.73 inches of rain--1.05 inches above normal. While Dallas received only 0.02 inch--1.91 below normal.

Over the Northeast, August 1963 was the coldest August in many years and one of the coldest of record. Over the Southeast, August 1963 was the driest August in many years and one of the driest of record.

Many weathermen in California, North Dakota, Wisconsin, Georgia, and other States, called August weather pleasant, delightful, or ideal for harvesting crops, for other outdoor work, or for recreation.

CONDENSED CLIMATOLOGICAL SUMMARY

AUGUST 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Prattville	102	6	Heflin	49	31	Mobile WBAP	9.26	Albertville 2SE	0.03
Arizona	Davis Dam No 2	114	14	Maverick	37	28	Crown King	13.09	Yuma Valley	.04
Arkansas	Booneville	109	26	Batesville L and D No 1	46	16	Hector	5.73	Aly	.08
California	Death Valley	119	15+	White Mountain 2	22	31	Henshaw Dam	2.60	172 Stations	.00
Colorado	Las Animas	107	1	Fraser	27	29	Allenspark	9.96	Eversoll Ranch	.49
Connecticut	Hartford WBAP	90	22	Coventry	33	26	Barkhamsted	3.41	Baltic	1.00
Delaware	2 Stations	95	4	2 Stations	47	26	Wilmington Porter Resvr.	5.58	Bridgeville 1NW	.81
Florida	Monticello 2S	104	7	do	62	19+	Myakka River St Park	14.21	Blountstown 2SE	.95
Georgia	Surrency 2WNW	105	7	Blue Ridge	50	15	Savannah USDA Plant GDN	8.48	Midville Exp Station	.12
Hawaii	3 Stations	91	8+	Mauna Loa Slope Obs.	33	20+	Kahana 883, Oahu	19.90	11 Stations	.00
Idaho	do	106	13	Stanley	21	2	Big Creek 1S	2.17	3 Stations	.00
Illinois	2 Stations	103	2	Chenoa	37	18	Tuscola	8.37	2 Stations	.61
Indiana	do	101	4+	Wheatfield 2NNW	37	18	Rockville	6.57	Edwardsport Power Plant	1.00
Iowa	Shenandoah	103	2	Saratoga 2E	36	19	Perry 1SE	8.71	Milford 4NW	.49
Kansas	2 Stations	110	12+	3 Stations	49	14	Long Island	6.50	Ulysses	.17
Kentucky	Henderson 7SSW	101	3	Benton 2	42	16	Paradise Steam Plant	8.75	Monticello	.88
Louisiana	Logansport	107	27	2 Stations	51	16+	LSU Ben-Hur Esp Sta	8.05	Grand Ecore	.34
Maine	3 Stations	88	22+	St Francis	30	26+	Patten	9.79	Ellsworth	2.93
Maryland	2 Stations	98	5+	Oakland 1SE	37	15	Beltsville Plant Sta	8.60	Owings Ferry Landing	.83
Massachusetts	4 Stations	91	23+	Barre Falls Dam	35	26	Belchertown	6.48	Salem CG Air Station	1.47
Michigan	Detroit WBAP Willow Run	93	7	Vanderbilt Trout Station	30	18	Detour 1N	5.42	Ann Arbor Univ of Mich	1.25
Minnesota	2 Stations	97	7	2 Stations	30	17	Hawley	10.38	Drayton 2NE	.37
Mississippi	do	102	13+	Holly Springs 4N	50	16+	Laurel	7.02	Minter City	.47
Missouri	Carthage	108	27	2 Stations	45	15	Zalma 5E	8.16	Tecumseh 2N	.88
Montana	3 Stations	105	10+	Wisdom	24	26	Culbertson	4.29	2 Stations	.00
Nebraska	do	107	2+	Halsey 2W	39	14	Table Rock 5N	7.78	Chadron FAA AP	.24
Nevada	Sunrise Manor Las Vegas	112	13	Charleston	17	26	Caliente	2.08	7 Stations	.00
New Hampshire	Franklin	92	7	Grafton	31	26	Dixville Notch	7.58	Milford	1.72
New Jersey	2 Stations	93	23+	Newton	40	27+	Fortescue	6.05	Belmar 2SW	1.30
New Mexico	do	103	2	Eagle Nest 1S	32	9	Abbott	9.76	Bosque Del Apache	.42
New York	Poughkeepsie	93	22	Franklinville	30	26	Buffalo WBAP	8.04	Theresa	1.10
North Carolina	Hamlet	101	7	2 Stations	38	15	Belhaven	8.53	Mount Airy	.44
North Dakota	Breien	104	19	New Salem 1SE	32	31	Ambrose 3N	6.46	Arvilla State Park	.41
Ohio	Cincinnati WB City	101	3	Danville	37	15	Gallipolis 5W	7.07	Lima Sewage Plant	.67
Oklahoma	4 Stations	110	28+	Freedom	51	15	Cleveland	5.33	Wewoka 3W	.04
Oregon	The Dalles	106	9	Wagontire	23	25	Tillamook	5.12	9 Stations	.00
Pennsylvania	Bethlehem Lehigh Univ	95	23	Coudersport 3NW	32	26+	Chadds Ford	5.43	Hyndman	.28
Puerto Rico	6 Stations	96	30+	2 Stations	60	27+	Penuelas Salto Garzas	23.36	San Juan WB City	2.88
Rhode Island	Providence WBAP	86	22	Kingston	38	26	Block Island WBAP	4.96	Woonsocket	1.51
South Carolina	2 Stations	102	8+	Caesars Head	53	15	Hilton Head	6.75	Clarks Hill Dam	.21
South Dakota	4 Stations	104	26+	Longvalley	35	31	Britton	5.36	Camp Crook	.03
Tennessee	2 Stations	101	29+	Unicoi 2ESE	41	15	Clarksville	8.53	Conasauga 1N	.43
Texas	do	109	10+	Mount Locke	51	26	Claude	7.96	19 Stations	.00
Utah	St George PH	109	14	Strawberry Hwy Station	25	11	Tropic	8.65	Garfield	.11
Vermont	3 Stations	89	23+	2 Stations	33	27+	Enosburg Falls	9.65	Montpelier FAA AP	2.13
Virginia	do	100	4+	Floyd 2NE	37	15	Washington WB Nat AP	7.21	Randolph	.48
Washington	Dallesport FAA AP	104	[illegible]	Mount Spokane Summit	32	22	Grays River Hatchery	5.87	2 Stations	.00
West Virginia	Williamson	98	4	Canaan Valley	32	15	Thomas	7.72	Wellsburg 3NE	1.43
Wisconsin	Jamesville	94	8	Newald	28	18	Alma Dam 4	6.37	Kenosha	1.27
Wyoming	Aruada 3N	103	10	Bondurant 3NW	23	2	Chugwater	5.14	Shell	.00

+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	991.6	1016.4	90	70	80.0	0.4	95	25+	58	15	22	0	69	73	1.53	- 3.32	1.53	1	4	0.0	0	4.9	NE	29	W	13	12	11	8	5.0	77
HUNTSVILLE	605	993.4	1016.3	91	68	79.5	- 0.7	97	6	58	15	22	0	67	70	1.13	- 2.16	0.52	4	6	0.0	0	5.6	NNE	25*	NNE	10	16	8	7	4.7	
MOBILE	211	1013.4	1015.6	93	74	83.5	2.4	98	6	68	16	27	0	72	75	9.26	2.82	3.48	9	12	0.0	0	4.3	SW	23*	SW	30+	7	15	9	5.6	
MONTGOMERY	195	1007.8	1015.7	93	72	82.4	0.7	99	7+	64	16+	26	0	72	75	2.84	- 1.26	1.12	9	7	0.0	0	5.7	WSW	35	W	13	13	14	4	4.6	72
ALASKA												B																				
ANCHORAGE	90	1011.2	1016.1	65	49	57.0	1.4	75	13	38	27	5	0	48	76	2.80	0.23	0.83	12	0	0.0	0	5.7	SSE	18*	SSE	4+	6	4	21	7.5	49
ANNETTE	110	1014.3	1018.3	69	54	61.5	3.6	82	24	50	29+	10	0	54	79	0.79	- 6.72	0.49	5	0	0.0	0	6.1	NNW	18*	S	13	6	7	18	7.0	
BARROW	22	1009.0	1009.7	41	32	36.5	- 1.4	55	24	27	19	0	19	34	92	2.81	1.91	0.50	19	0	0.5	T	14.4	E	36*	SW	23	0	3	28	9.3	
BARTER ISLAND	39	1009.3	1011.3	46	34	40.0	0.0	66	15	30	19+	0	13	36	87	1.50	0.45	0.27	14	0	0.2	T	11.1	ENE	32*	WSW	10	1	4	26	8.8	
BETHEL	125	1011.0	1012.4	55	44	49.5	- 2.8	74	12	36	6	2	0	47	91	5.81	1.61	1.31	21	0	0.0	0	14.4	SSW	43*	S	22	1	2	28	9.2	
COLD BAY	94	1012.5	1016.2	55	46	50.6	- 0.7	65	9	38	19	0	0	47	87	2.69	- 1.56	0.84	14	0	0.0	0	15.5	SSE	44*	SE	15	0	2	29	9.5	
CORDOVA	40	1016.2	1017.9	63	45	54.1	1.7	78	31	37	27	6	0	50	88	7.50	- 0.56	2.18	18	0	0.0	0	4.2	E	16*	SE	25+	5	6	20	7.4	
FAIRBANKS	436	997.4	1014.4	64	45	54.7	0.4	81	14	32	27	7	1	47	78	3.60	1.40	1.18	14	0	0.0	0	5.4	SW	23*	SW	3+	1	7	23	8.4	
JUNEAU	17	1017.2	1018.1	67	47	56.9	2.8	81	12	40	10+	11	0	49	78	1.20	- 3.82	0.43	10	0	0.0	0	6.9	NNW	22*	ENE	26	11	3	17	6.2	47
KING SALMON	43	1015.4	1015.4	62	46	54.1	- 0.5	78	12	35	20+	5	0	48	82	4.23	0.80	2.00	19	0	0.0	0	12.1	SW	36*	SE	21	3	2	26	8.4	
KOTZEBUE	10	1007.9	1008.4	53	44	48.2	- 2.4	69	14	37	11	0	0	44	86	4.95	2.79	0.73	22	0	0.0	0	15.3	ESE	49*	SW	22	0	4	27	9.4	
MC GRATH	334	1000.9	1013.6	60	44	52.1	- 2.0	78	13	31	27	3	1	46	81	2.45	- 1.34	0.84	17	0	0.0	0	8.5	SSW	29	SSW	15	2	2	27	8.9	
NOME	13	1007.4	1008.1	50	42	46.1	- 2.9	60	13	34	19+	0	0	43	89	3.01	- 0.79	0.59	24	0	0.0	0	14.4	S	37*	WSW	22	1	3	27	9.3	14
ST. PAUL ISLAND	22	1011.9	1012.9	50	42	46.2	- 1.4	54	5	30	26	0	2	44	92	2.89	- 0.40	0.79	18	0	0.0	0	15.4	SW	39*	SSW	16	0	6	25	9.1	
SHEMYA	122	1010.7	1014.5	50	44	47.3	- 2.4	55	16	38	26	0	0	45	93	5.92	3.80	2.24	13	0	0.0	0	14.4	SW	52*	SW	1	0	4	27	9.5	
YAKUTAT	28	1017.7	1018.8	63	47	54.8	1.0	76	13	37	29	5	0	52	90	7.56	- 3.36	3.42	12	0	0.0	0	4.5	E	21*	ESE	14	6	6	19	7.4	
ARIZONA																																
FLAGSTAFF	6993	794.6	1017.1	76	51	63.8	- 0.6	86	13	45	29	0	0	51	72	4.96	2.12	1.79	16	27	0.0	0	4.9	S	16*	SSE	17	2	12	17	7.5	
PHOENIX	1117	972.1	1010.3	99	75	87.1	- 1.9	107	10	69	6	31	0	62	46	2.68	1.56	0.83	10	17	0.0	0	7.0	ESE	48*	SE	25	11	15	5	4.7	78
PRESCOTT	5014	849.6	1014.2	85	61	72.6	- 0.8	95	12	56	31	5	0	57	65	4.09	1.43	1.12	18	23	0.0	0	7.6	SSW	38	SW	30	3	18	10	6.3	66
TUCSON	2584	925.3	1011.4	92	72	82.3	- 1.3	98	12+	66	25+	25	0	63	57	2.86	- 0.02	0.91	11	28	0.0	0	8.2	SSE	42	SE	15	8	12	11	6.0	65
WINSLOW	4880	854.1	1014.9	88	63	75.8	- 2.5	98	13	58	31	13	0	57	61	4.80	3.37	1.38	16	18	0.0	0	8.1	ESE	31*	SE	5	3	15	13	6.7	
YUMA	199	1004.3	1009.4	104	80	91.7	- 1.8	112	10	74	6	30	0	63	43	0.06	- 0.44	0.03	2	4	0.0	0	8.5	SSE	31	SE	13	22	5	4	2.9	88
ARKANSAS																																
FORT SMITH	449	998.7	1015.3	96	69	82.8	0.5	106	28+	58	15	26	0	70	69	0.86	- 2.06	0.47	5	1	0.0	0	5.9	ENE	17	W	25+	12	10	9	4.8	75
LITTLE ROCK	257	1003.0	1015.9	93	69	81.1	- 0.2	107	28	55	16	21	0	70	74	0.62	- 2.20	0.42	5	4	0.0	0	5.9	WSW	23	W	10	13	6	12	5.0	73
TEXARKANA	361	1001.8	1015.5	95	73	83.5	0.9	102	26	59	16	26	0	70	69	3.00	- 0.07	2.70	5	6	0.0	0	7.6	NE								
CALIFORNIA																																
BAKERSFIELD	494	994.7	1012.1	93	66	79.9	- 1.8	101	16	56	24	26	0	50	37	T	0.00	T	0	0	0.0	0	6.0	NW	16*	NNW	30	28	1	2	1.0	
BISHOP	4108	873.9		94	52	73.1	- 0.7	103	15	44	25	22	0			0.61	0.49	0.38	3	3	0.0	0						27	1	3	1.7	
BLUE CANYON	5280	841.2		74	55	64.8	- 2.9	82	16	45	25+	0	0			0.01	- 0.05	0.01	1	0	0.0	0	5.5	WSW	23	SSW	23	26	2	3	1.6	
BURBANK	699	987.7	1013.4	85	61	73.3	- 0.8	98	13	56	25	5	0	57	64	0.01	- 0.04	0.01	1	0	0.0	0	6.1	S	16*	ESE	11+	22	8	1	2.2	
EUREKA U	43	1015.8		61	53	57.1	0.4	66	31+	51	25+	0	0			0.07	- 0.03	0.04	2	0	0.0	0	5.6	NW#	18	NW	14	5	10	16	7.0	43
FRESNO	326	1000.1	1011.8	95	61	78.2	- 0.2	104	15	54	25+	25	0	50	41	0.01	- 0.00	0.01	1	1	0.0	0	6.9	WNW	19	NW	22	27	2	1	1.3	95
LONG BEACH	34	1012.4	1014.0	84	63	73.7	1.3	90	13+	57	26+	2	0	61	72	T	- 0.03	T	0	0	0.0	0	6.1	WNW	17*	NW	13+	19	9	3	3.3	
LOS ANGELES	97	1 09.9	1013.8	78	64	71.0	2.8	87	15	60	25	0	0	60	72	0.01	- 0.01	0.01	1	0	0.0	0	8.2	W	20*	W	11+	18	9	4	3.5	
LOS ANGELES U	312			84	64	73.7	0.6	92	14	60	13	3	0			0.02	- 0.02	0.02	2	0	0.0	0	5.1	W#	18	W	31	23	7	1	2.3	84
MT SHASTA R	3544	893.4		83	48	65.7	- 1.0	93	7	39	25	4	0			0.39	0.21	0.39	1	2	0.0	0						25	3	3	2.1	
OAKLAND	3	1014.5	1014.9	73	55	63.9	- 0.3	88	15	53	26+	0	0	52	72	0.01	- 0.02	0.01	1	0	0.0	0	9.5	WNW	23*	WSW	22	17	9	5	3.6	
POINT ARGUELLO R	367	1001.1		68	52	59.8	- 0.8	73	15+	47	28+	0	0			0.05	0.03	0.02	5	0	0.0	0	5.7		21*	NW	31	8	9	14	6.1	
RED BLUFF	341	999.7	1012.2	94	63	78.6	- 2.4	105	15	55	25+	23	0	45	34	T	- 0.06	0.00	0	0	0.0	0	8.1	SSE	26	SE	12	23	6	2	1.8	93
SACRAMENTO	17	1011.5	1012.9	93	58	75.1	- 1.0	103	15	51	25	22	0	54	56	T	- 0.02	T	0	0	0.0	0	5.5	SW	20	W	22	22	8	1	2.2	92
SACRAMENTO U	23			90	59	74.7	- 0.1	101	15	53	25	22	0			T	- 0.04	T	0		0.0	0										
SANDBERG R	4517	864.0		83	60	71.2	- 2.1	94	14	44	23	2	0			0.22	0.13	0.16	2	1	0.0	0	10.6	S	30*	NNW	19	25	4	2	1.5	
SAN DIEGO	13	1010.2	1013.4	79	65	72.1	1.4	84	8	61	24	0	0	61	73	T	- 0.08	T	0	0	0.0	0	7.9	WNW	17	NW	25+	17	10	4	3.6	73
SAN FRANCISCO	8	1014.3	1015.0	73	54	63.5	0.7	86	15	50	1	0	0	52	74	T	- 0.02	T	0	0	0.0	0	12.4	WNW	37	W	18	21	7	3	3.0	
SAN FRANCISCO U	52			66	54	59.8	0.4	79	26	51	7+	0	0			T	- 0.04	T	0	0	0.0	0	10.0	W#	26	SW	30					68
SANTA CATALINA	1568	958.4		80	62	71.0		97	14	55	30+	2	0			T		T	0	0	0.0	0						22	6	3	2.4	
SANTA MARIA	238	1006.2	1014.9	73	53	62.8	0.4	83	14	46	25	0	0	55	81	0.03	0.00	0.03	2	0	0.0	0	6.5	WNW	25*	WNW	31	24	4	3	2.8	
STOCKTON	28	1011.4	1013.1	92	59	75.8		102	15	52	23+	22	0	52	50				0	0	0.0	0	6.3	WNW	20*	WSW	30	26	3	2	1.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days		Average dew point					No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below			Total	Departure from normal	Greatest in 24 hours	01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0.3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO																															
ALAMOSA	7536	777.0		78	49	63.7	0.7	86	2+	42	28	0	0		1.87	0.89	0.37	18	17	0.0	0						4	14	13	6.2	
COLORADO SPRINGS	6173	817.2	1017.9	82	58	69.8	1.1	96	1	53	31	1	0	53	5.22	3.06	1.56	18	19	0.0	0	9.0	N	28*	WNW	1	5	9	17	6.9	
DENVER	5283	841.7	1015.8	81	56	68.7	- 3.3	96	1	49	30	1	0	54	2.52	1.24	0.62	13	11	0.0	0	7.9	S	33	W	25	4	15	12	6.5	63
GRAND JUNCTION	4849	861.4	1014.0	85	63	73.6	- 1.9	94	16+	53	31	8	0	50	1.75	0.68	0.56	11	11	0.0	0	5.7	SE	29	NW	31+	8	12	11	6.0	54
PUEBLO	4639	859.4	1014.8	88	61	74.4	- 0.2	102	1	55	28	13	0	56	2.28	0.43	0.86	13	9	0.0	0	9.3	SSE	47	N	28	5	17	9	5.9	72
CONNECTICUT																															
BRIDGEPORT	7	1014.1	1014.9	78	61	69.8	- 2.5	85	9	50	26	0	0	60	1.81	- 2.64	0.73	6	4	0.0	0	11.4	SW	30*	NW	14	8	12	11	5.6	
HARTFORD	169	1007.8	1013.8	81	57	68.9	- 1.3	90	22	46	26+	1	0	57	1.59	- 2.42	0.39	11	5	0.0	0	6.2	S	28	NW	14	3	17	11	6.7	74
NEW HAVEN	6	1013.6		79	61	69.5	- 1.1	87	4	51	26+	0	0		2.08	- 2.16	0.62	5	4	0.0	0	7.2		29	NW	14	7	15	9	5.7	73
DELAWARE																															
WILMINGTON	78	1011.8	1015.0	81	62	71.7	- 2.6	88	9	49	25	0	0	60	4.03	- 1.56	1.31	10	8	0.0	0	6.2	WNW	30*	WNW	14	10	11	10	5.6	
DIST.OF COLUMBIA																															
WASHINGTON U	72			86	67	76.4		94	4+	56	26	9	0		7.06		5.44	11		0.2	0										
WASH NATL AP	14	1010.8	1015.4	86	65	75.4	- 1.1	94	4	51	15	5	0	59	7.21	2.31	6.23	10	2	0.0	0	8.2	S	38	NNW	20	9	14	8	5.4	75
FLORIDA																															
APALACHICOLA U	13	1013.8		89	76	82.3	0.8	92	6	73	15	10	0		4.18	- 3.56	1.98	10	18	0.0	0	4.7		21	SW	8	10	11	10	5.8	
DAYTONA BEACH	31	1015.0	1016.8	89	73	81.3	0.6	94	14	70	22	14	0	73	80	2.01	- 4.36	1.19	9	15	0.0	0	6.3	SW	29*	W	9	8	16	7	5.5	
FORT MYERS	13	1015.5		93	75	83.6	0.9	95	31+	71	20+	30	0		3.98	- 3.40	1.65	11	17	0.0	0	7.3		23*	SW	20+	5	22	4	5.5	
JACKSONVILLE	24	1014.8	1016.0	91	73	82.1	- 0.2	97	8	68	22	22	0	73	80	4.95	- 1.90	1.03	16	15	0.0	0	6.4	SW	45	E	1	7	18	6	5.4	70
KEY WEST	5	1014.4	1015.7	90	80	85.0	1.4	93	16+	69	20	25	0	74	71	7.15	2.82	2.06	13	16	0.0	0	9.3	ESE	28	N	17	3	20	8	6.1	68
LAKELAND U	214			92	74	82.8	0.9	95	25+	71	22+	25	0			6.16	- 0.92	2.26	16	22	0.0	0	5.3					4	19	8	6.0	65
MIAMI BEACH	9			89	79	84.4	1.5	93	13	72	20	11	0			4.41	- 0.65	2.25	12		0.0	0	12.2	E	26	NW	7	5	22	4	5.0	64
MIAMI	7	1014.6	1015.9	90	76	83.0	0.7	93	9	72	19	20	0	74	77	4.77	- 2.20	1.40	15	17	0.0	0	8.7	ENE	27*	NE	22	3	20	8	6.0	
ORLANDO	106	1011.9	1016.5	94	74	83.9	2.1	98	10+	70	22+	29	0	73	77	3.54	- 3.40	1.19	14	18	0.0	0	7.4	WSW	25*	SSW	20	5	20	6	5.6	
PENSACOLA U	13			90	75	82.7	0.7	96	26	70	15	16	0			2.83	- 4.76	0.89	10	12	0.0	0	6.6	N	26	NW	23					72
TALLAHASSEE	58	1013.5	1016.2	92	73	82.3	1.2	97	7	68	18	24	0	73	81	7.70	0.77	1.34	14	22	0.0	0	6.7	W	35*	S	19+	2	21	8	6.2	
TAMPA	19	1014.9	1016.5	91	75	82.8	0.8	96	7+	70	22+	24	0	72	75	4.10	- 4.14	1.20	13	22	0.0	0	8.3	E	33*	NW	15	2	20	9	6.2	78
WEST PALM BEACH	15	1015.6	1016.6	92	75	83.5	0.5	98	14	72	23+	27	0	73	75	4.06	- 2.68	0.79	13	15	0.0	0	7.7	ESE	35*	NNE	11	4	20	7	5.6	
GEORGIA																															
ATHENS	803	987.3	1015.7	90	68	79.0	0.0	95	6+	63	17+	21	0	67	72	0.87	- 2.76	0.47	6	6	0.0	0	5.9	NW	21*	NE	10	15	9	7	4.8	
ATLANTA	1005	975.1	1016.3	87	68	77.7	- 0.7	91	7+	64	15+	7	0	68	76	0.88	- 2.72	0.34	4	4	0.0	0	5.8	WNW	21*	N	13	12	13	6	4.6	80
AUGUSTA	143	1008.6	1015.3	93	70	81.1	0.9	98	13+	62	17	24	0	70	72	1.58	- 2.31	0.95	6	4	0.0	0	5.9	SE	21*	E	25+	6	19	6	5.3	
COLUMBUS	385	1001.8		92	70	81.3	0.6	98	6	63	15	24	0			3.04	- 1.60	1.35	6	6	0.0	0	5.1		25*	NNW	13	10	14	7	5.1	
MACON	356	1002.5	1015.9	93	71	82.0	0.7	99	7	66	15	28	0	69	70	1.65	- 2.53	0.68	9	5	0.0	0	5.6	NW	28	NE	8	15	9	7	4.7	74
ROME	637	993.8		90	65	77.5	- 0.9	95	7+	58	15	19	0			1.29	- 2.47	0.60	4	5	0.0	0						12	14	5	4.7	
SAVANNAH	48	1013.2	1015.8	92	72	81.7	0.7	98	7	68	29+	25	0	72	77	2.36	- 4.26	0.87	7	13	0.0	0	7.0	SW	28	E	26	5	17	9	5.7	76
THOMASVILLE U	283			92	73	82.1	0.2	98	26	68	22	24	0			4.01	- 1.55	0.92	13	19	0.0	0										
HAWAII																															
HILO	31	1014.4	1015.7	83	68	75.7	- 0.1	89	20	65	2+	0	0	68	79	7.66	- 3.79	1.42	26	0	0.0	0	8.4	WSW	22	ESE	4+	0	11	20	8.1	32
HONOLULU	7	1014.9	1015.3	89	74	81.5	2.1	91	8	70	4	5	0	66	62	0.03	- 0.86	0.02	2	0	0.0	0	11.7	ENE	26	NE	25	9	12	10	5.4	74
KAHULUI	44	1012.2	1015.0	88	70	78.9		91	4	66	3+	3	0	66	68	0.02		0.01	2	0	0.0	0	20.1	ENE	39*	ENE	11	7	21	3	4.9	83
LIHUE	115	1011.2	1016.6	86	75	80.3	1.9	87	28+	70	16+	0	0	69	71	1.34	- 1.12	0.91	11	0	0.0	0	12.3	ENE	24	NE	30	2	14	15	7.3	62
IDAHO																															
BOISE	2838	918.4	1012.5	89	58	73.5	1.4	104	13	48	20+	18	0	44	38	0.64	0.48	0.59	2	2	0.0	0	7.2	WNW	56	SE	9	20	8	3	2.9	87
IDAHO FALLS 42NW R	4790			87	46	66.7	0.3	97	14	37	27+	13	0			0.99	0.50	0.44	4		0.0	0	9.1	NNE	30A	SW	1					
IDAHO FALLS 46W R	4933	849.6		85	48	66.6	0.0	94	14	36	2	4	0			0.89	0.41	0.41	3	2	0.0	0	6.6	WSW	25A	WSW	1					
LEWISTON	1413	962.7		89	59	73.7	2.0	99	11+	49	27+	15	0			0.61	0.18	0.32	5	6	0.0	0						17	7	7	3.9	
POCATELLO	4444	864.0	1013.8	87	54	70.4	0.3	96	14	45	27	11	0	39	36	0.53	- 0.02	0.39	6	5	0.0	0	7.5	SW	34	SW	12	17	8	6	4.1	78
ILLINOIS																															
CAIRO U	314	1003.2		88	69	78.5	- 1.4	98	3	59	15	12	0			4.84	1.74	2.22	8	6	0.0	0	6.0	N#	33	W	12	13	10	8	4.8	76
CHICAGO O HARE	658	992.0	1016.4	80	57	68.6		91	2	42	18	1	0	58	70	2.73		1.80	7	4	0.0	0	7.5	SSE	23*	N	13+	5	13	13	6.3	
CHICAGO MIDWAY	610	994.0	1016.6	82	63	72.6	- 1.8	94	2	49	18	3	0	61	70	2.15	- 1.01	1.63	6	4	0.0	0	8.2	SW	37	NW	2	3	17	11	6.3	53

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ILLINOIS																																
MOLINE	582	994.6	1016.6	81	60	70.8	- 2.8	97	2	44	18	3	0	62	75	4.02	0.49	2.25	5	7	0.0	0	7.2	WSW	38	NW	28	9	10	12	6.3	62
PEORIA	652	995.4	1017.5	81	60	70.4	- 3.9	95	2	45	18	3	0	61	73	2.99	0.11	0.93	6	4	0.0	0	7.4	S	24	SE	28	8	10	13	6.2	65
ROCKFORD	728	989.7	1016.6	81	59	69.8	- 2.7	94	2	45	18	2	0	58	68	1.84	- 2.30	0.88	9	5	0.0	0	7.4	SSW	24*	N	2	9	10	12	5.8	
SPRINGFIELD	588	993.0	1016.1	81	60	70.6	- 4.6	93	2	49	18	1	0	64	80	5.46	2.72	1.84	8	7	0.0	0	6.5	N	25	N	9	9	10	12	5.9	79
INDIANA																																
EVANSVILLE	381	1000.5	1016.3	88	61	74.7	- 2.1	99	3	49	16	15	0	63	71	2.47	- 0.60	1.75	8	3	0.0	0	5.7	NW	49	NW	28	10	14	7	5.3	77
FORT WAYNE	791	985.8	1016.7	79	58	68.4	- 4.1	88	3	46	18	0	0	58	72	1.26	- 1.78	0.41	6	2	0.0	0	6.9	NW	32	NW	2	8	12	11	6.2	66
INDIANAPOLIS	793	987.0	1016.8	80	58	68.9	- 4.8	94	3	46	15	1	0	61	78	2.22	- 0.81	0.89	8	5	0.0	0	5.9	NNW	40*	N	9	5	15	11	6.3	65
SOUTH BEND	768	988.6	1016.4	78	57	67.6	- 4.4	85	23+	41	18	0	0	57	69	1.30	- 2.25	0.95	10	4	0.0	0	7.4	NNW	27*	WNW	3	6	12	13	6.3	
IOWA																																
BURLINGTON	694	991.6	1016.8	81	61	71.4	- 3.2	99	2	50	18	3	0	62	76	3.13	- 0.48	1.37	8	5	0.0	0	7.5	NW	26	SW	16	9	9	13	6.0	67
DES MOINES	948	986.0	1016.9	80	63	71.4	- 3.1	97	2	51	18	2	0	63	77	4.83	1.16	2.97	8	4	0.0	0	7.2	SSE	30	W	16	6	13	12	6.2	55
DUBUQUE	1065	991.4		79	59	68.9	- 1.6	91	8+	46	18	2	0			6.62	2.89	2.66	9	8	0.0	0			31*	SSW	16	7	12	12	6.3	
SIOUX CITY	1095	975.4	1016.0	82	63	72.5	- 1.6	93	22	50	18	3	0	64	77	4.35	1.69	1.44	12	8	0.0	0	7.1	SSE	25	NE	9	6	14	11	6.4	50
WATERLOO	868	985.3	1016.9	81	59	69.9	- 2.3	91	2	42	19	3	0	61	77	3.01	- 0.41	1.96	9	6	0.0	0	7.4	SSE	24*	WSW	28	5	16	10	6.2	
KANSAS																																
CONCORDIA	1470	965.5	1014.6	90	65	77.5		103	5+	53	14	15	0	62	65	3.07		2.15	10	14	0.0	0	10.6	ENE	30	N	16	14	8	9	4.7	65
DODGE CITY	2594	928.1	1014.2	93	66	79.3	0.1	102	6	51	14	21	0	58	54	1.22	- 1.14	0.76	5	8	0.0	0	12.1	SSE	29	S	21+	11	9	11	5.1	72
GOODLAND	3645	890.1	1014.4	89	61	75.2	0.5	101	1	53	19	17	0	56	57	1.76	- 0.52	0.74	8	10	0.0	0	12.4	S	38*	SSE	5	12	11	8	4.9	
TOPEKA	877	980.1	1015.0	90	67	78.4	0.0	104	27	52	15	16	0	64	65	1.30	- 2.99	0.97	5	8	0.0	0	11.0	S	30	SSE	5	11	11	9	5.4	70
WICHITA	1321	966.6	1014.1	92	70	81.2	0.4	104	6	56	14	20	0	64	59	2.86	- 0.01	2.27	8	6	0.0	0	9.3	S	34	N	28	12	14	5	4.4	75
KENTUCKY																																
COVINGTON	869	984.7	1016.2	83	58	70.5	- 4.6	98	3	49	16	3	0	60	74	1.83	- 0.77	0.71	9	5	0.0	0	6.3	N	29*	NW	9	4	16	11	6.2	
LEXINGTON	979	981.3	1016.7	82	63	72.5	- 3.5	90	3	52	15	1	0	62	73	4.14	0.93	1.48	9	7	0.0	0	6.2	NNE	35*	NW	28	9	13	9	5.4	
LOUISVILLE	474	997.0	1016.0	84	63	73.4	- 2.3	95	3	51	15	3	0	65	76	2.13	- 0.84	0.62	9	7	0.0	0	5.7	NNE	29	E	28	6	16	9	5.8	63
LOUISIANA																																
ALEXANDRIA	92	1011.5	1016.1	93	69	81.1		100	27	56	16	26	0	71	77	2.42		1.17	6	12	0.0	0	4.0	SSW	33	N	30	9	17	5	4.8	
BATON ROUGE	64	1013.3	1016.3	92	73	82.5	1.1	96	29+	64	16	28	0	74	79	3.66	- 1.60	1.30	8	14	0.0	0	4.4	SW	23	NNE	8+	7	21	3	5.1	
LAKE CHARLES	14	1014.7	1016.2	92	74	83.0	0.3	96	13	62	16	28	0	73	76	1.87	- 2.93	1.05	6	10	0.0	0	6.3	SSW	20*	SSW	12	11	16	4	4.5	
NEW ORLEANS	3	1014.0	1016.1	91	73	81.6	0.2	95	8	65	17	24	0	74	81	2.12	- 3.22	0.83	10	13	0.0	0	5.3	WSW	17*	N	30+	13	14	4	4.5	
NEW ORLEANS AUDUBON	6	1009.6		91	75	83.3		95	**26**	71	21+	26	0			5.11		2.60	11	12	0.0	0	2.8	W#	17	NE	21	6	21	4	4.9	61
SHREVEPORT	252	1006.8	1016.0	96	74	85.0	1.7	103	27+	62	16	27	0	70	65	3.74	1.19	2.44	7	9	0.0	0	8.2	SSW	37	WSW	13	15	12	4	4.0	79
MAINE																																
CARIBOU	624	988.9	1011.9	69	49	59.0	- 3.6	82	6	39	23	0	0	54	80	6.35	2.68	1.43	18	3	0.0	0	10.1	SW				0	14	17	7.8	
PORTLAND	61	1008.8	1012.9	74	52	62.9	- 3.9	86	22+	41	11	0	0	56	79	3.25	0.83	0.76	13	8	0.0	0	6.8	S	29	N	25	6	12	13	6.7	55
MARYLAND																																
BALTIMORE	146	1010.4	1015.2	85	61	72.9	- 2.1	95	4	50	15	9	0	60	69	4.21	- 0.98	2.02	10	4	0.0	0	8.6	W	30	NW	14	9	14	8	5.1	72
BALTIMORE U	14			85	68	76.7	- 0.6	93	4+	57	25	8	0			3.86	- 0.74	1.44	7		0.0	0										
FREDERICK	294			83	59	71.3	- 2.6	90	9+	47	26	2	0			3.33	- 0.97	1.80	6		0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	989.4		77	58	67.5	- 1.9	87	22	47	25	0	0			3.53	- 0.52	1.15	13		0.0	0	12.5	WSW	43	NW	14					66
BOSTON	15	1008.4	1013.1	79	62	70.4	- 1.3	91	22	54	26+	1	0	57	66	1.67	- 1.99	0.41	11	2	0.0	0	12.4	W	37	NW	14	4	16	11	6.2	65
NANTUCKET	43	1013.4	1014.1	74	61	67.7	0.1	80	6	54	26	0	0	61	81	4.80	1.12	2.00	10	7	0.0	0	11.2	SSW	42	S	13	8	11	12	6.2	67
PITTSFIELD	1170			74	51	62.5	- 3.7	83	23+	39	26	0	0			2.99	- 0.91	0.82	14		0.0	0										
WORCESTER	986	977.3	1013.7	75	56	65.8	- 2.5	83	22+	47	25	0	0	55	72	2.65	- 1.59	0.54	11	6	0.0	0	9.1	W	31*	WNW	14	4	18	9	6.0	
MICHIGAN																																
ALPENA	689	990.4		74	48	60.8	- 4.7	86	22+	35	16	0	0			4.08	1.05	1.56	12	6	0.0	0	6.3	W	27	NE	13	8	13	10	5.9	58
DETROIT	619	989.4	1015.8	80	60	70.1	- 2.2	91	22+	49	18	4	0	56	64	1.71	- 1.15	0.72	8	2	0.0	0	8.7	NW	33	NW	13	8	11	12	5.9	62
DETROIT M WAYNE CO	633	992.2	1016.1	80	54	66.8	- 4.6	91	7	44	18	2	0	58	76	1.44	- 1.40	0.66	7	2	0.0	0	6.4	WSW				7	12	12	6.0	
DETROIT WILLOW RUN	711	987.9	1016.0	80	57	68.5	- 4.1	93	7	45	18	2	0	56	69	1.37	- 1.47	0.61	7	2	0.0	0	9.7	NW	30*	WNW	13	8	11	12	5.9	
ESCANABA U	594	993.3		71	55	63.2	- 2.4	85	1	41	31+	0	0			2.25	- 0.86	1.39	6	3	0.0	0	9.4		39	N	13	11	13	7	5.2	59

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																															
FLINT	766	989.1	1016.8	77	54	65.3	- 4.4	88	6+	42	18	0	0	56	75	3.12	- 0.05	0.89	7	3	0.0	0	7.7	WSW	24*	WSW	3	8	11	12	5.9	
GRAND RAPIDS	689	991.7	1016.5	78	57	67.2	- 3.3	87	21	43	18	0	0	56	70	3.31	- 0.61	1.28	9	7	0.0	0	8.1	NW	26	S	2	10	11	10	5.6	65
LANSING	852	984.3	1016.0	77	54	65.6	- 4.6	88	22	41	18	0	0	57	74	2.84	- 0.21	1.02	10	4	0.0	0	6.1	NW	34	SW	7	8	11	12	5.9	58
MARQUETTE U	677	988.9		72	56	63.9	- 1.9	91	5	46	31	1	0			1.73	- 1.30	0.89	10	3	0.0	0	7.3	NW#	26	SW	27	7	14	10	5.8	66
MUSKEGON	627	993.3	1016.2	76	58	66.5	- 2.8	83	9	44	18	0	0	59	79	3.30	0.39	0.72	10	7	0.0	0	10.1	SW	29*	SSW	16	12	8	11	5.2	
SAULT STE MARIE	721	992.7	1015.4	71	52	61.1	- 2.4	84	21	41	31	0	0	53	77	4.02	1.13	1.27	13	5	0.0	0	8.3	WNW	25*	SSE	3	8	12	11	5.9	60
MINNESOTA																															
DULUTH	1426	975.4	1016.9	75	51	62.9	- 1.4	90	6	41	17	1	0	55	76	2.96	- 0.85	1.57	11	6	0.0	0	9.0	WNW	30	S	26+	5	17	9	6.2	58
INTERNATIONAL FALLS	1179	975.3	1016.3	76	50	62.9	- 0.2	86	4	38	17	0	0	55	77	3.14	- 0.50	1.36	9	5	0.0	0	5.4	NW	22*	NNE	12	9	11	11	5.7	
MINNEAPOLIS	822	983.5	1016.5	81	57	68.9	- 1.6	94	7+	46	18+	4	0	58	72	1.55	- 1.63	0.45	8	7	0.0	0	7.9	SSW	33	NW	8	10	10	11	5.9	72
ROCHESTER	1297	969.6	1017.1	77	56	66.8	- 3.0	88	7	44	19+	0	0	59	78	3.22	- 0.57	1.66	8	9	0.0	0	9.3	S	29*	NNW	9	7	11	13	6.2	
ST CLOUD	1034	977.9		80	56	68.0	- 0.6	92	7+	45	17	2	0			5.90	2.17	2.56	10	4	0.0	0						10	12	9	5.4	
MISSISSIPPI																															
JACKSON	305	1003.1	1016.1	93	70	81.9	0.6	99	27+	59	15	26	0	70	73	1.65	- 1.69	0.68	7	9	0.0	0	5.5	SSE	18	WSW	19	13	16	2	4.4	
MERIDIAN	292	1002.7	1016.2	92	68	80.2	- 1.0	99	6	59	15	26	0	71	77	5.05	1.51	3.37	7	9	0.0	0	4.1	N	23*	S	28	12	14	5	4.9	
VICKSBURG U	234	1006.7		90	73	81.3	- 0.4	96	26	59	15	22	0			5.78	2.77	4.80	6	8	0.0	0	5.8		23	NNW	13	17	11	3	3.7	80
MISSOURI																															
COLUMBIA	778	987.2	1015.3	86	65	75.7	- 1.5	98	8+	53	15	11	0	64	71	4.32	0.51	1.62	7	6	0.0	0	8.6	SSE	22	NW	13	13	7	11	5.4	76
KANSAS CITY	742	981.0	1015.0	89	69	79.0	- 0.3	101	5+	58	15	15	0	65	63	4.08	0.31	1.97	7	7	0.0	0	8.8	ENE	33	NE	1	14	8	9	5.2	71
ST JOSEPH	809	981.6		86	66	76.0	- 1.5	99	5+	54	15	12	0			4.62	0.41	1.90	7	7	0.0	0	6.2	SSE	23*	ESE	1	12	12	7	4.9	
ST LOUIS	535	995.8	1016.3	86	64	74.9	- 2.9	102	3	52	15	11	0	63	69	2.55	- 0.47	1.49	6	5	0.0	0	7.9	NNE	31	NE	9	12	11	8	5.0	59
ST LOUIS RFC	465			86	68	76.8	- 2.4	101	3+	54	18	12	0			2.39	- 1.23	1.46	6		0.0	0										
SPRINGFIELD	1265	969.2	1015.9	89	66	77.6	- 0.4	100	28	53	15	16	0	67	74	1.88	- 1.44	0.92	7	5	0.0	0	7.9	SSE	45	NW	6	15	8	8	4.5	79
MONTANA																															
BILLINGS	3567	892.9	1014.8	85	57	71.0	0.1	95	6	49	29	9	0	45	45	0.39	- 0.51	0.32	3	7	0.0	0	9.2	NE	42	NW	14	15	13	3	3.7	86
GLASGOW	2277	941.3		85	57	70.8	3.0	99	7	48	30+	10	0			3.30	1.81	1.70	5	7	0.0	0						16	9	6	4.1	
GREAT FALLS	3662	890.5	1015.5	84	53	68.8	1.5	97	7	44	2	8	0	41	40	0.49	- 0.77	0.17	7	8	0.0	0	8.9	WSW	33	W	6	15	13	3	3.7	81
HAVRE	2582	927.7		86	54	69.9	2.9	101	7	41	22	11	0			0.70	- 0.40	0.43	4	7	0.0	0	8.1	W#	40	SW	15	21	7	3	3.4	85
HELENA	3893	875.6	1015.7	84	52	68.0	1.8	96	14	42	26	8	0	41	42	0.80	- 0.09	0.32	7	11	0.0	0	7.9	WNW	31	W	22+	14	14	3	3.7	80
KALISPELL	2965	913.1		83	47	65.2	2.1	95	7+	34	21	7	0			0.81	- 0.28	0.61	7	7	0.0	0	5.8					17	10	4	3.7	
MILES CITY	2629			89	58	73.9	1.3	103	7	45	29	15	0			1.11	- 0.13	0.60	4	7	0.0	0	8.6	NE	20*	NNW	20+					
MISSOULA	3190	903.5	1016.5	85	48	66.6	1.8	97	9	36	27	13	0	45	52	1.29	0.57	0.77	9	10	0.0	0	6.9	NNW	26	SE	23	13	13	5	4.2	79
NEBRASKA																															
GRAND ISLAND	1841	950.3	1015.6	86	61	73.5	- 3.3	101	1	48	14	12	0	61	70	3.06	0.71	1.37	7	12	0.0	0	9.4	SSE	25*	SSW	1	9	12	10	5.5	
LINCOLN U	1150			86	66	75.9	- 1.8	103	2	55	14	10	0			2.27	- 1.11	0.84	9	8	0.0	0	9.3	NE#	33	S	1	6	17	8	5.6	66
NORFOLK	1544	960.8		83	63	72.8	- 2.4	99	22	51	20	8	0			3.89	1.28	1.28	9	10	0.0	0						4	15	12	6.3	
NORTH PLATTE	2779	917.1	1014.4	87	60	73.4	- 1.1	104	1	49	14	13	0	59	66	2.18	0.05	1.42	12	11	0.0	0	9.8	SE	35	S	22	7	9	15	6.4	61
OMAHA	978	976.6	1015.7	85	64	74.3	- 1.9	98	2	53	20	7	0	63	71	4.82	0.84	2.08	11	5	0.0	0	8.2	SSE	26	S	1	7	13	11	5.8	66
OMAHA N OMAHA AP	1323	968.6		83	64	73.3	- 0.6	96	2	53	18	7	0			3.62	- 0.52	1.82	11	7	0.0	0						3	14	14	6.5	
SCOTTSBLUFF	3950	881.1	1014.5	87	59	73.1	0.5	99	1	54	14+	12	0	55	58	0.99	- 0.02	0.46	8	8	0.0	0	9.7	ESE	35*	ESE	30	5	15	11	6.1	
VALENTINE	2587	925.3		87	60	73.5	0.6	101	15	48	14	13	0			2.21	- 0.08	1.55	7	13	0.0	0	9.5	S#				8	14	9	5.3	71
NEVADA																															
ELKO	5075	845.7	1013.6	88	44	66.3	- 0.6	95	13	31	26	13	1	31	30	0.18	- 0.12	0.14	3	3	0.0	0	6.7	SW	23*	WSW	18+	19	7	5	2.8	
ELY	6257	811.3	1012.5	84	47	65.3	- 0.8	91	14	37	26	2	0	35	36	0.29	- 0.20	0.09	6	11	0.0	0	10.1	S	37	SW	23	14	10	7	4.3	93
LAS VEGAS	2162	945.9	1010.6	101	75	87.9	0.2	108	14+	65	31	31	0	47	29	0.42	- 0.06	0.26	4	7	0.0	0	10.7	SSW	36*	ESE	15	18	9	4	3.5	85
RENO	4404	863.5	1015.1	88	42	64.7	- 1.8	96	7	31	25	13	1	36	39	0.17	0.00	0.14	4	2	0.0	0	5.7	WNW	26	S	23+	23	6	2	1.9	92
WINNEMUCCA	4299	867.6		90	46	67.9	0.3	98	6	33	26	17	0			0.71	0.56	0.70	2	4	0.0	0	6.8	WNW	38	S	9	25	3	3	2.2	88
NEW HAMPSHIRE																															
CONCORD	339	1002.3	1013.1	79	53	65.6	- 1.8	89	22	38	26	0	0	54	72	2.74	- 0.22	0.65	16	7	0.0	0	5.5	NW	26	NW	25+	4	16	11	6.2	60
MT WASHINGTON OBS	6262	805.5		48	39	43.5	- 4.2	57	8	29	25	0	4			12.77	6.12	2.04	20	4	0.0	0	26.4	W#	79Y	W	14	0	8	23	8.8	19
NEW JERSEY																															
ATLANTIC CITY	58	1013.0	1015.3	82	63	72.4	- 1.3	90	9	51	25+	1	0	61	71	2.93	- 1.97	0.89	12	8	0.0	0	10.3	SSW	32*	NW	14	12	7	12	5.7	60

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						Snow, Sleet					Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	F.	F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																																
ATLANTIC CITY U	10			78	65	71.6	- 2.1	88	23+	54	25+	0	0			2.08	- 3.06	1.04	11		0.0	0	12.7		38*	SSW	13					
NEWARK	11	1013.3	1014.6	83	65	74.0	- 0.4	92	9	55	25	3	0	59	62	1.93	- 2.50	0.83	8	4	0.0	0	9.7	WNW	31*	SSW	13	6	15	10	5.8	
TRENTON U	56	1007.0		82	63	72.6	- 1.3	90	23	52	25	1	0			1.85	- 2.92	0.97	8	6	0.0	0	7.8	SW#	34	NW	14	6	14	11	5.8	63
NEW MEXICO																																
ALBUQUERQUE	5310	850.9	1013.8	88	64	75.9	- 0.8	95	8+	59	27	13	0	55	55	3.00	1.67	1.00	16	14	0.0	0	8.3	ESE	40	SE	7	10	15	6	5.0	71
CLAYTON	4969	848.9		85	61	73.0	- 0.3	95	2	56	19+	9	0			5.60	3.51	4.41	9	10	0.0	0						13	10	8	4.8	
RATON	6379	812.6		82	56	68.9	0.7	94	2	50	15	2	0			2.69	0.06	0.60	13	15	0.0	0						12	9	10	5.3	
ROSWELL	3619	894.4		93	64	78.5	2.4	100	2	58	27+	25	0			2.26	0.64	1.50	9	10	0.0	0	8.3		32	NW	12	10	12	9	5.5	72
SILVER CITY	5373	838.6		84	60	71.8		90	8	55	22	1	0			3.22		2.08	13	18	0.0	0						3	17	11	6.4	
NEW YORK																																
ALBANY	277	1010.1	1014.0	78	55	66.4	- 3.6	87	23	46	28	0	0	56	73	2.49	- 0.58	0.61	13	7	0.0	0	6.9	SSE	33	W	30	4	13	14	6.8	53
BINGHAMTON	1590	955.9	1014.4	72	54	62.8	- 4.7	80	23	43	19	0	0	56	80	3.39	- 0.18	0.70	17	8	0.0	0	8.5	WNW	36	NE	1	2	10	19	7.3	52
BUFFALO	705	987.6	1015.5	74	54	64.3	- 4.1	81	8+	42	25	0	0	56	76	8.04	4.99	3.88	14	5	0.0	0	9.3	WSW	29	W	4	5	12	14	6.6	64
NEW YORK U	132	1003.5		81	63	72.1	- 3.0	88	9+	53	25	0	0			3.21	- 1.23	1.36	11	4	0.0	0	7.2	W#	30	S	11	11	14	6	5.0	59
NEW YORK LA GUARDIA	19	1012.4	1014.2	80	66	73.0	- 2.4	86	23+	57	25	0	0	59	63	4.24	- 0.84	1.74	9	5	0.0	0	10.9	S	30	W	14	6	15	10	5.8	
ROCHESTER	543	995.8	1015.0	76	55	65.5	- 4.2	86	6	44	25	0	0	57	77	3.26	0.54	1.77	12	7	0.0	0	9.8	WSW	35	NW	4	7	9	15	6.3	65
SCHENECTADY	217			76	57	66.6	- 4.2	85	23+	49	28	0	0			4.42	1.16	1.15	14	3	0.0	0						18	8	5	3.8	
SYRACUSE	417	991.7	1013.9	76	56	66.1	- 4.1	86	3	45	25	0	0	55	71	3.59	0.34	1.20	16	9	0.0	0	7.5	W	30	NW	4	5	13	13	6.6	60
NORTH CAROLINA																																
ASHEVILLE U	2203	938.7		83	61	72.0	- 1.5	91	7+	50	15	3	0			3.83	0.20	2.39	7	5	0.0	0	5.9	NW#	26	SE	20	15	9	7	4.5	63
CAPE HATTERAS R	7	1014.7	1015.4	84	70	76.8	- 0.8	88	18+	61	12	0	0	69	76	4.59	- 1.83	0.88	13	9	0.0	0	9.4	NE	23*	SW	13	4	12	15	7.1	63
CHARLOTTE	735	988.0	1015.9	90	68	78.9	1.2	100	7	61	17+	19	0	65	67	3.55	- 0.67	1.92	8	3	0.0	0	6.3	N	31	SE	19	13	9	9	4.9	78
GREENSBORO	891	984.8	1016.3	85	64	74.6	- 1.6	92	24+	52	15	10	0	62	70	2.34	- 2.27				0.0	0	6.5	SW	26	S	19					
RALEIGH	433	1001.8	1015.4	88	65	76.3	- 0.6	96	7	56	16+	15	0	64	71	2.10	- 3.10	0.68	7	4	0.0	0	5.9	S	40*	WNW	13	8	11	12	5.9	59
WILMINGTON	30	1013.0	1015.9	88	70	78.8	- 0.6	95	6	61	28	14	0	70	78	2.73	- 4.13	1.43	6	8	0.0	0	6.4	SW	26	S	13	3	19	9	6.6	69
WINSTON SALEM	967	981.4	1016.2	86	65	75.3	- 1.5	92	24+	55	15	8	0	64	70	2.51	- 1.80	1.02	6	4	0.0	0	6.8	WSW	19*	NNW	14	11	7	13	5.7	
NORTH DAKOTA																																
BISMARCK	1647	955.7	1015.5	83	55	69.1	- 0.7	98	20	40	30	7	0	54	64	1.39	- 0.34	0.83	12	13	0.0	0	8.2	SE	45	W	5	12	14	5	4.3	82
FARGO	900	981.6	1015.5	82	59	70.3	0.8	97	8	46	17	6	0	58	69	4.41	1.46	2.10	9	9	0.0	0	9.6	SSE	47	SW	22	10	11	10	5.5	62
WILLISTON	1899	948.4		84	55	69.2	0.5	97	15	43	30	9	0			1.62	0.14	0.76	7	7	0.0	0	8.5	SE#	40	E	25	11	15	5	4.8	76
OHIO																																
AKRON	1209	978.4	1016.4	78	56	66.9	- 3.6	85	3	49	15	0	0	56	70	2.25	- 0.86	0.62	11	3	0.0	0	6.9	W	31*	NW	4	7	11	13	6.0	
CINCINNATI ORS	761			84	62	72.6	- 3.1	99	3	54	16+	4	0			2.44	- 0.84	1.16	10	6	0.0	0	4.1	N#	25	N	9					64
CINCINNATI U	553	993.4		85	64	74.3	- 1.9	101	3	56	16+	7	0			2.58	- 0.80	1.06	9	5	0.0	0										
CLEVELAND	777	988.5	1016.1	77	57	66.7	- 2.7	86	23	48	15	0	0	58	74	1.70	- 1.58	0.31	12	4	0.0	0	8.9	SSW	57	S	3	9	8	14	6.2	57
COLUMBUS	812	986.9	1016.6	82	58	69.9	- 3.3	97	3	46	15	1	0	59	72	3.67	0.81	1.08	9	5	0.0	0	6.7	N	33	NW	13	4	17	10	6.4	57
COLUMBUS U	724			81	61	71.1	- 3.6	95	3	52	26+	1	0			3.32	0.52	1.37	12	3	0.0	0										
DAYTON	997	984.2	1016.6	79	58	68.5	- 5.2	92	3	47	16	1	0	59	76	2.29	- 0.59	1.01	8	3	0.0	0	7.3	NW	30	W	13	5	15	11	6.5	64
MANSFIELD	1296			77	56	66.6	- 3.6	86	3	46	15	0	0			3.36	0.13	1.24	11	5	0.0	0						6	10	15	6.4	
SANDUSKY U	606			79	62	70.2	- 3.3	87	22+	52	15	0	0			1.15	- 2.12	0.37	7	4	0.0	0	7.5		44	NW	13+	13	10	8	4.9	73
TOLEDO	676	991.1	1016.1	79	56	67.4	- 3.5	88	7	46	18+	0	0	57	71	2.22	- 1.11	0.90	8	4	0.0	0	6.7	WSW	30	SW	13	10	9	12	5.8	57
YOUNGSTOWN	1178	973.9	1016.3	76	54	64.8	- 5.2	82	22+	44	25	0	0	55	73	3.11	- 0.39	0.84	13	3	0.0	0	7.7	SW	23*	WNW	13+	6	9	16	6.6	
OKLAHOMA																																
OKLAHOMA CITY	1280	971.9	1014.2	94	70	82.0	0.7	105	24	58	20	24	0	65	62	1.61	- 0.91	0.90	8	5	0.0	0	10.5	SSE	40	W	13	15	7	9	4.5	79
TULSA	676	990.7	1014.8	94	71	82.7	0.6	104	28+	60	20	25	0	68	64	3.28	0.24	1.21	9	9	0.0	0	10.0	SSE	28	N	28	16	11	4	3.8	79
OREGON																																
ASTORIA	8	1017.6	1018.2	68	54	61.1	0.6	80	8	48	27	0	0	55	84	1.20	- 0.29	1.08	4	1	0.0	0	7.9	NNW	23*	NW	8+	4	10	17	7.2	
BURNS U	4151	874.0		83	50	66.4	- 0.8	95	8	39	25	6	0			0.25	- 0.04	0.15	6	3	0.0	0						18	8	5	3.3	
EUGENE	361	1003.8		81	52	66.7	0.8	95	8	45	26	3	0			0.17	- 0.23	0.11	2	3	0.0	0	6.0		17*	NW	16+	12	11	8	4.6	
MEACHAM	4050			75	51	63.0	1.3	88	11	39	1	0	0			1.11	0.58	0.83	6	2	0.0	0						12	14	5	4.1	
MEDFORD	1298	968.7	1015.9	88	53	70.4	- 0.3	99	7	44	24	14	0	50	53	0.26	0.09	0.25	2	2	0.0	0	5.4	WNW	16*	NW	18+	19	9	3	2.9	
PENDLETON	1482	962.0	1015.0	86	57	71.7	0.3	98	12+	48	1	14	0	43	40	0.30	0.02	0.18	3	3	0.0	0	8.3	SE	29*	W	18	15	12	4	3.3	
PORTLAND	21	1011.4	1017.0	77	56	66.1	- 0.5	93	8	47	1	1	0	56	75	0.87	0.22	0.58	7	1	0.0	0	8.1	NW	22	NW	18	7	11	13	6.1	51

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND U	30			77	58	67.7	- 0.4	92	8	52	1	1	0			1.01	0.32	0.70	7		0.0	0										
ROSEBURG	505	998.4		83	52	67.6	0.0	94	11	43	24	6	0			T	- 0.31	T	0	0	0.0	0	5.2	N#	19	NW	20	15	10	6	4.0	77
SALEM	195	1010.3	1017.7	80	51	65.3	- 1.3	94	8	41	1	1	0	54	73	0.09	- 0.36	0.02	5	3	0.0	0	6.0	N	18*	WNW	22+	12	9	10	5.2	
SEXTON SUMMIT P	3836	885.8		74	51	62.5	- 0.2	84	11+	42	23	0	0			T	- 0.25	T	0	0	0.0	0	10.3	NNW				23	5	3	2.4	
PACIFIC AREA																																
CANTON ISLAND	11	1008.1	1008.3	89	78	83.7	0.2	91	21	73	29+	13	0	75	76	4.46	1.96	1.27	13	0	0.0	0	11.2	FSE	25*	FSE	9	10	11	10	5.8	
ENIWETOK	16	1008.0		89	79	83.8	0.8	91	22+	73	28+	13	0			9.21	2.40	2.08	19	2	0.0	0	10.2									
TAGUAC GUAM R	361			86	75	80.7	1.4	88	28+	71	7	0	0			11.85	- 0.99	3.45	28	3	0.0	0	5.4	E#	19	E	12					86
JOHNSTON	7	1011.9	1012.5	83	79	81.0	- 0.5	85	23	73	10	0	0	74	79	3.30	1.04	2.39	11	0	0.0	0	13.8	E	33	E	28	3	13	15	7.1	62
KOROR R	94	1005.9	1008.7	86	76	81.0	0.0	90	19	73	17+	1	0	76	88	14.24	- 1.52	3.78	24	4	0.0	0	6.9	W	22	N	19	0	0	31	10.0	42
KWAJALEIN	8	1008.7	1008.7	87	77	82.0	0.1	91	21+	74	31+	4	0	76	83	15.09	5.50	3.37	22	1	0.0	0	11.1	E	31	E	28	3	5	23	8.0	
PONAPE R	123	1003.9	1008.4	88	73	80.5	1.1	90	26+	72	6+	4	0	75	88	18.23	1.91	3.98	29	3	0.0	0	2.6	SE	13	NE	2	0	6	25	9.0	56
TRUK MOEN ISLAND	5	1008.5	1008.8	87	75	80.9	0.5	90	14+	73	27+	2	0	76	84	18.35	5.54	4.91	24	0	0.0	0	5.7	SW	27	NW	24	0	1	30	9.3	36
WAKE	11	1011.1	1011.7	88	78	82.8	0.4	90	28+	74	24+	3	0	76	78	4.38	- 2.70	2.34	15	0	0.0	0	10.0	ENE	25*	SE	24	4	15	12	6.7	
YAP R		1006.5	1007.6	86	75	80.7	- 0.6	89	21+	73	31+	0	0	77	90	28.20	13.50	5.38	25	7	0.0	0	5.7	SW	19	NE	18+	0	0	31	9.9	54
PENNSYLVANIA																																
ALLENTOWN	376	1001.1	1015.2	81	58	69.7	- 2.3	88	23	48	25+	0	0	58	69	3.17	- 1.30	1.57	9	4	0.0	0	8.1	WNW	39*	NW	14	12	9	10	5.2	
ERIE	732	989.4	1015.5	75	59	66.7	- 3.1	84	6+	50	27	0	0	56	70	2.62	- 0.36	1.06	13	3	0.0	0	11.2	S	32*	NNW	13	9	9	13	5.9	
HARRISBURG	335	1001.6	1015.3	81	59	70.1	- 3.5	88	23	47	26	0	0	58	68	2.55	- 1.10	1.23	13	6	0.0	0	8.1	W	28	NW	14+	8	13	10	6.0	68
PHILADELPHIA	5	1010.5	1014.9	82	61	71.2	- 2.4	88	23	47	25	0	0	60	69	3.35	- 1.28	1.74	10	8	0.0	0	7.8	WSW	26	W	14+	10	12	9	5.6	61
PITTSBURGH	1137	985.5	1016.1	79	57	67.7	- 3.1	85	1	44	15	0	0	56	69	2.31	- 1.00	0.57	10	4	0.0	0	7.1	NW	46*	WNW	3	2	14	15	6.9	67
PITTSBURGH U	749			80	61	70.6	- 3.4	86	23+	51	15	0	0			1.83	- 1.67	0.83	12		0.0	0										55
READING U	266	1002.7		82	62	71.8	- 3.0	89	23	52	26+	0	0			1.74	- 2.31	0.76	9	5	0.0	0	8.4	S#	42	NE	1	11	11	9	5.2	64
SCRANTON	940	981.0	1014.9	78	58	68.3	- 0.7	84	23+	47	26+	0	0	58	72	2.04	- 1.54	1.22	9	3	0.0	0	7.2	SW	25	W	14	2	16	13	6.7	63
WILLIAMSPORT	527	996.5	1015.4	80	56	68.3	- 3.3	88	23+	47	26+	0	0	56	70	2.28	- 1.34	1.29	11	5	0.0	0	7.9	W	28*	W	17+	1	18	12	6.7	
RHODE ISLAND																																
BLOCK ISLAND	110	1009.0		75	61	67.9	- 1.7	81	4	53	26	0	0			4.96	1.10	3.10	8	6	0.0	0						3	19	9	5.9	
PROVIDENCE	55	1007.3	1013.4	79	60	69.4	- 1.1	86	22	47	26	0	0	58	70	1.56	- 2.40	0.63	9	1	0.0	0	9.5	WNW	26*	NW	24	7	17	7	5.6	56
SOUTH CAROLINA																																
CHARLESTON	41	1013.7	1015.6	90	72	80.9	1.2	98	4+	63	29	16	0	72	80	6.34	- 0.27	2.00	12	10	0.0	0	6.4	S	45Y	S	6	7	14	10	5.8	62
CHARLESTON U	9			88	75	81.3	0.3	92	8+	69	27	12	0			4.86	- 1.21	2.39	6		0.0	0	8.4		35	E	26					
COLUMBIA	217	1003.0	1015.5	94	70	81.7	1.2	100	13+	61	17	27	0	67	67	1.91	- 3.83	1.16	6	3	0.0	0	6.4	SW	32*	W	13	11	14	6	4.9	65
FLORENCE	146	1009.7	1015.4	92	69	80.2	0.3	99	7	61	17+	20	0	68	72	1.52	- 3.05	0.90	5	6	0.0	0	7.1	NE	21*	NE	10	9	16	6	5.2	
GNVLE SPARTANBURG	957	979.5	1015.8	89	68	78.5	- 0.3	96	7	61	15	19	0	65	67	1.16	- 3.35	0.71	7	3	0.0	0	6.4	NE	34	SW	19	10	10	11	5.3	73
SOUTH DAKOTA																																
HURON	1282	968.7	1015.1	86	59	72.3	- 1.0	99	7	42	17	7	0	59	67	0.88	- 1.19	0.62	5	6	0.0	0	10.5	SSE	29	S	21	10	16	5	4.6	76
RAPID CITY	3165	902.7	1015.0	89	59	73.8	1.8	99	7	49	30	15	0	51	49	1.32	0.10	0.50	10	6	0.0	0	9.1	NNW	45	SW	20	11	13	7	4.7	72
SIOUX FALLS	1420	965.1	1016.0	83	59	70.8	- 1.0	94	8	45	14	6	0	62	75	0.94	- 2.65	0.46	6	4	0.0	0	8.6	S	24*	SSE	1	10	14	7	5.3	
TENNESSEE																																
BRISTOL	1507	962.8	1016.6	84	61	72.5	- 1.8	88	18+	51	15	0	0	63	77	3.73	- 0.07	2.50	9	8	0.0	0	2.9	WNW	23*	SW	7	9	12	10	5.9	
CHATTANOOGA	670	989.2	1016.3	90	67	78.3	0.0	96	7	59	15	19	0	67	75	0.56	- 3.20	0.38	3	3	0.0	0	5.7	S	23	SW	19	11	11	9	4.9	74
KNOXVILLE	950	981.8	1016.9	86	65	75.5	- 2.4	92	6	56	15	6	0	65	73	3.64	0.18	1.27	7	6	0.0	0	5.1	NE	25	SW	19	12	12	7	4.8	67
MEMPHIS	263	1001.5	1015.9	90	70	80.2	- 0.8	99	28	57	16	18	0	68	69	2.15	- 0.82	0.99	8	6	0.0	0	5.9	SSW	25	SW	2	14	8	9	4.7	83
MEMPHIS U	271			89	73	81.3	0.2	96	28	61	15	17	0			1.05	- 1.58	0.69	7		0.0	0										
NASHVILLE	577	996.2	1015.9	88	65	76.8	- 2.4	96	6+	54	15	14	0	67	74	7.63	4.77	5.34	8	8	0.0	0	6.2	NNW	26	W	13	8	16	7	5.0	72
OAK RIDGE	905	983.9		86	64	75.4	- 1.2	94	24+	54	31+	8	0			3.17	- 1.45	0.79	7	5	0.0	0	4.5		25Y		19	11	11	9	4.9	
TEXAS																																
ABILENE	1759	953.9	1013.6	98	73	85.6	2.6	102	28+	64	15	29	0	62	50	3.56	2.09	2.90	9	6	0.0	0	7.0	SSE	26	S	13+	17	8	6	4.3	80
AMARILLO	3607	890.9	1013.7	90	66	77.8	- 0.2	97	23	59	20	21	0	59	57	3.93	1.35	1.75	9	12	0.0	0	12.0	S	29	SE	31	13	10	8	4.6	76
AUSTIN	597	993.1	1014.6	100	75	87.5	2.8	103	27+	71	18+	31	0	67	56	0.88	- 1.06	0.73	5	7	0.0	0	7.3	S	22	SE	11	15	15	1	3.8	84
BROWNSVILLE	16	1012.0	1014.4	94	76	85.0	0.9	96	21+	73	10+	30	0	73	71	0.14	- 2.63	0.10	2	1	0.0	0	12.0	SE	26	SE	25	18	11	2	3.5	70
CORPUS CHRISTI	43	1013.8	1015.0	94	76	85.1	0.9	99	20	73	15+	28	0	73	70	2.99	0.22	2.65	4	3	0.0	0	10.4	SE	31	SE	30	13	16	2	4.1	80
DALLAS	481	996.0	1014.2	99	78	88.4	3.4	103	28+	71	16+	31	0	67	51	0.02	- 1.91	0.02	1	4	0.0	0	10.4	SSE	26	S	10	19	8	4	3.3	81

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station ⌀	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TEXAS																																
DEL RIO	1026	979.1		100	76	88.2		103	21	73	9	31	0			T		T	0	1	0.0	0	10.1					18	11	2	3.1	
EL PASO	3918	887.2	1012.1	91	69	80.3	0.4	97	12	65	30+	23	0	58	51	1.03	- 0.16	0.40	9	14	0.0	0	7.2	SSE	47	W	18	11	12	8	5.0	71
FORT WORTH	544	993.7	1014.1	99	75	87.3	1.9	105	27	68	15	30	0	66	51	2.73	1.05	1.92	3	4	0.0	0	9.1	SSE	43*	SW	31	18	7	6	3.6	
GALVESTON U	7			88	79	83.6	0.3	93	14	75	16	3	0			1.41	- 2.98	0.64	7		0.0	0	9.3		24	SE	21					85
GALVESTON	5	1013.6	1016.2	89	79	84.1	0.5	92	27+	74	16+	19	0	73	69	1.44	- 3.08	0.49	9	7	0.0	0	8.1	S				12	14	5	4.5	
HOUSTON U	41			95	78	86.1	2.0	100	13	71	16	31	0			1.82	- 1.73	0.90	5		0.0	0										
HOUSTON	50	1012.7	1015.4	95	74	84.3	0.6	99	13	67	18	30	0	72	73	1.85	- 2.42	0.80	4	5	0.0	0	7.2	SSE	54*	NNW	20	11	17	3	4.8	88
LAREDO	500	997.8	1013.1	102	77	89.5	2.0	106	21	76	29+	31	0	67	55	0.07	- 1.63	0.06	2	2	0.0	0	13.0	ESE	40*	E	6	21	9	1	2.8	
LUBBOCK	3243	904.9	1014.1	91	67	79.0	0.2	97	28	59	15	21	0	62	59	2.67	0.99	1.15	8	7	0.0	0	9.5	SSE	29*	NNW	29+	14	9	8	4.8	
MIDLAND	2854	915.9	1012.5	95	69	82.2	0.0	101	22	65	15	28	0	61	53	1.24	- 0.24	0.32	9	9	0.0	0	8.7	S	29*	ESE	17	10	14	7	4.9	
PORT ARTHUR	16	1014.0	1015.5	95	74	84.3	2.5	100	27	64	17+	31	0	74	76	2.00	- 3.49	0.56	9	9	0.0	0	6.1	SSW	29	SW	22+	11	16	4	4.5	77
SAN ANGELO	1903	947.4	1012.9	97	73	85.2	0.1	102	8+	68	14	29	0	62	51	1.55	- 0.28	1.12	8	6	0.0	0	6.3	SSE	24*	SE	17	16	9	6	4.2	
SAN ANTONIO	792	989.9	1014.4	97	74	85.7	1.9	100	21+	71	15+	30	0	67	59	0.63	- 1.73	0.63	1	2	0.0	0	7.8	SSE	30	SE	8	18	12	1	3.3	86
VICTORIA	104	1010.4		96	75	85.2	1.8	101	20	69	18	30	0			3.02	- 0.11	1.45	6	5	0.0	0	7.1		67Y		25	6	22	3	4.9	
WACO	500	993.9	1014.6	99	76	87.4	1.9	103	27	72	14	31	0	66	53	1.28	- 0.40	1.00	6	7	0.0	0	11.5	S	32*	NNW	13	19	8	4	3.3	
WICHITA FALLS	994	977.6	1013.6	98	72	85.2	0.0	106	24	63	21	27	0	62	50	1.77	- 0.02	0.96	7	7	0.0	0	9.6	S	25*	N	18	19	5	7	3.7	
UTAH																																
MILFORD	5028	846.1		90	57	73.5	1.3	99	14+	49	31+	18	0			0.59	- 0.14	0.20	12	17	0.0	0						9	13	9	5.7	
SALT LAKE CITY	4220	868.2	1012.8	92	64	77.9	3.4	99	13	53	29	23	0	48	38	0.54	- 0.33	0.46	4	13	0.0	0	11.0	SSE	36	S	22	7	15	9	5.5	79
WENDOVER	4237	870.4		89	66	77.6	0.4	98	14	55	24	18	0			0.26	- 0.10	0.20	2	5	0.0	0						19	9	3	3.0	
VERMONT																																
BURLINGTON	331	998.2	1012.7	73	52	62.5	- 5.7	84	3	40	19	0	0	54	76	5.11	1.74	0.81	18	10	0.0	0	7.7	S	26	NW	14	1	14	16	7.5	56
VIRGINIA																																
LYNCHBURG	947	990.7		86	63	74.1	- 0.7	97	3	54	15	8	0			0.93	- 3.48	0.45	7	5	0.0	0	5.5		21	SW	13	7	12	12	6.3	52
NORFOLK	26	1014.3	1015.7	86	68	76.7	- 0.8	95	4+	57	28+	8	0	66	72	2.40	- 3.57	1.09	9	6	0.0	0	9.0	S	51	W	13	6	16	9	5.6	67
RICHMOND	162	1009.4	1015.4	88	63	75.7	- 0.8	96	3	51	15	15	0	63	72	3.75	- 1.79	2.19	7	5	0.0	0	7.3	SSW	23	NE	24	7	11	13	6.2	58
ROANOKE	1174	974.6	1016.2	85	63	73.9	- 1.5	100	3	50	15	7	0	59	63	1.81	- 2.82	1.06	5	3	0.0	0	7.9	WSW	25*	N	14	6	13	12	6.0	
WASHINGTON																																
OLYMPIA	190	1011.2	1018.4	76	51	63.4	0.0	88	8	40	2	0	0	54	77	0.79	- 0.10	0.31	7	3	0.0	0	5.2	SSW	24*	S	24	5	12	14	6.8	
SEATTLE TACOMA	400	1003.8	1017.8	74	55	64.6	1.5	85	8	50	27	0	0	54	74	0.73	- 0.22	0.23	7	3	0.0	0	7.3	SW	29*	SW	11	6	9	16	6.4	
SEATTLE U	14			74	57	65.3	0.3	85	8	55	27+	0	0			0.76	0.02	0.28	6	0	0.0	0			30	SW	11					67
SPOKANE	2356	947.0	1014.9	84	55	69.1	1.6	95	6	45	25	9	0	43	43	0.50	0.09	0.20	5	6	0.0	0	7.4	NE	31	SW	23	18	8	5	3.3	84
STAMPEDE PASS R	3958	882.3		65	48	56.7	1.1	84	8	42	25+	0	0			1.56	- 0.48	0.51	9	4	0.0	0						12	5	14	5.8	
TATOOSH ISLAND	101	1015.7	1018.6	60	53	56.5	0.5	65	24	50	25+	0	0	54	93	0.49	- 1.49	0.35	8	1	0.0	0	9.7	S	33	S	12	1	7	23	8.2	35
WALLA WALLA U	949			87	62	74.6	0.8	100	11	54	25	15	0			0.66	0.36		3	5	0.0	0										
YAKIMA	1061	976.1	1014.5	87	52	69.2	0.6	96	8+	41	26	13	0	47	50	0.13	- 0.07	0.12	2	2	0.0	0	7.1	W	25*	SW	11	17	8	6	3.6	
WEST INDIES																																
SAN JUAN P.R.	5	1012.0	1014.9	89	75	81.8	0.9	92	25+	71	2	8	0	74	79	3.43	- 3.70	0.67	21	5	0.0	0	8.3	ENE	23	E	26+	3	16	12	6.4	66
SWAN ISLAND	28	1011.3		88	78	82.9	- 0.2	90	31+	73	8+	3	0			2.23	- 1.43	1.12	12	7	0.0	0						6	16	9	5.8	
WEST VIRGINIA																																
BECKLEY	2504	930.2	1017.0	76	56	66.3		86	3	43	15	0	0	59	80	3.27		1.08	12	8	0.0	0	6.9	NNW	24*	SW	19	3	10	18	7.5	
CHARLESTON	939	981.2	1016.4	80	60	70.2	- 3.1	91	3	48	16	1	0	63	81	2.85	- 1.10	1.23	7	3	0.0	0	4.5	SW	21*	WNW	19	0	20	11	7.3	
ELKINS	1970	948.4	1017.2	77	54	65.2		83	3	45	16	0	0	58	83	3.34		0.97	12	5	0.0	0	5.4	NW	40*	NW	4	0	16	15	7.7	
HUNTINGTON	827	986.8	1016.8	81	60	70.4		90	3	48	15	1	0	63	79	3.09	- 0.20	0.90	10	5	0.0	0	4.5	SSW	23*	WSW	13	1	16	14	7.3	
PARKERSBURG U	615			81	60	70.8	- 3.6	90	3	49	16+	1	0			2.44	- 1.34	0.66	8	4	0.0	0	5.4		30	NW	13					48
WISCONSIN																																
GREEN BAY	682	993.5	1016.0	77	54	65.6	- 2.3	86	21+	41	18	0	0	58	79	2.07	- 0.68	0.88	6	2	0.0	0	6.5	SW	30	N	13	9	12	10	5.5	68
LA CROSSE	652	991.9	1016.5	79	59	68.9	- 2.7	88	7	46	18	0	0	60	76	3.40	- 0.23	1.32	10	8	0.0	0	7.8	S	63*	NNW	2	8	12	11	5.8	
MADISON	858	981.5	1016.4	79	56	67.6	- 1.9	88	8+	42	18	0	0	58	72	3.23	- 0.14	1.30	9	6	0.0	0	6.8	SW	33	S	16	10	11	10	5.6	62
MILWAUKEE	672	991.9	1016.6	76	59	67.1	- 0.7	86	2	44	18	0	0	59	76	2.48	- 0.58	0.73	7	4	0.0	0	9.3	SSW	32	W	3	11	11	9	5.2	71
WYOMING																																
CASPER	5319	840.5	1014.4	85	56	70.4	0.3	91	15+	48	30	5	0	44	44	0.39	- 0.33	0.12	8	10	0.0	0	9.7	SW	30*	SW	23+	10	11	10	5.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days								Snow, Sleet					Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	F.	F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
CHEYENNE	6126	818.1	1016.4	81	56	68.3	1.1	93	1	47	29	1	0	51	62	2.28	0.84	0.50	12	13	0.0	0	10.9	WNW	36	N	1	5	9	17	7.0	63
LANDER	5563	838.1	1014.5	85	55	69.8	1.0	93	15	46	23	5	0	45	46	0.54	0.07	0.25	9	9	0.0	0	7.1	WSW	34	NW	17	9	11	11	5.5	60
SHERIDAN	3942	886.1	1015.0	87	55	70.8	1.3	96	7	47	30+	12	0	46	45	0.42	- 0.48	0.18	3	5	0.0	0	6.2	WNW	37	SW	20	10	12	9	5.3	67

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	991.6	1016.4	32.2	21.1	26.7	0.2	35.0	25+	14.4	15	22	0	20.6	73	39	- 84	39	1	4	0	0	2.2	NE	18.0	W	13	12	11	8	5.0	77
HUNTSVILLE	184	993.4	1016.3	32.8	20.0	26.4	-0.4	36.1	6	14.4	15	22	0	19.4	70	29	- 55	13	4	6	0	0	2.5	NNE	11.2*	NNE	10	16	8	7	4.7	
MOBILE	64	1013.4	1015.6	33.9	23.3	28.6	1.3	36.7	6	20.0	16	27	0	22.2	75	235	72	88	9	12	0	0	1.9	SW	10.3*	SW	30+	7	15	9	5.6	
MONTGOMERY	59	1007.8	1015.7	33.9	22.2	28.0	0.4	37.2	7+	17.8	16+	26	0	22.2	75	72	- 32	28	9	7	0	0	2.5	WSW	15.6	W	13	13	14	4	4.6	72
ALASKA												B																				
ANCHORAGE	27	1011.2	1016.1	18.3	9.4	13.9	0.8	23.9	13	3.3	27	5	0	8.9	76	71	6	21	12	0	0	0	2.5	SSE	8.0*	SSE	4+	6	4	21	7.5	49
ANNETTE	34	1014.3	1018.3	20.6	12.2	16.4	2.0	27.8	24	10.0	29+	10	0	12.2	79	20	-171	12	5	0	0	0	2.7	NNW	8.0*	S	13	6	7	18	7.0	
BARROW	7	1009.0	1009.7	5.0	0.0	2.5	-0.8	12.8	24	- 2.8	19	0	19	1.1	92	71	49	13	19	0	13	T	6.4	E	16.1*	SW	23	0	3	28	9.3	
BARTER ISLAND	12	1009.3	1011.3	7.8	1.1	4.4	0.0	18.9	15	- 1.1	19+	0	13	2.2	87	38	11	7	14	0	5	T	5.0	ENE	14.3*	WSW	10	1	4	26	8.8	
BETHEL	38	1011.0	1012.4	12.8	6.7	9.7	-1.6	23.3	12	2.2	6	2	0	8.3	91	148	41	33	21	0	0	0	6.4	SSW	19.2*	S	22	1	2	28	9.2	
COLD BAY	29	1012.5	1016.2	12.8	7.8	10.3	-0.4	18.3	9	3.3	19	0	0	8.3	87	68	- 40	21	14	0	0	0	6.9	SSE	19.7*	SE	15	0	2	29	9.5	
CORDOVA	12	1016.2	1017.9	17.2	7.2	12.3	0.9	25.6	31	2.8	27	6	0	10.0	88	191	- 14	55	18	0	0	0	1.9	E	7.2*	SE	25+	5	6	20	7.4	
FAIRBANKS	133	997.4	1014.4	17.8	7.2	12.6	0.2	27.2	14	0.0	27	7	1	8.3	78	91	36	30	14	0	0	0	2.4	SW	10.3*	SW	3+	1	7	23	8.4	
JUNEAU	5	1017.2	1018.1	19.4	8.3	13.8	1.6	27.2	12	4.4	10+	11	0	9.4	78	30	- 97	11	10	0	0	0	3.1	NNW	9.8*	ENE	26	11	3	17	6.2	47
KING SALMON	13	1015.4	1015.4	16.7	7.8	12.3	-0.3	25.6	12	1.7	20+	5	0	8.9	82	107	20	51	19	0	0	0	5.4	SW	16.1*	SE	21	3	2	26	8.4	
KOTZEBUE	3	1007.9	1008.4	11.7	6.7	9.0	-1.3	20.6	14	2.8	11	0	0	6.7	86	126	71	19	22	0	0	0	6.8	ESE	21.9*	SW	22	0	4	27	9.4	
MC GRATH	102	1000.9	1013.6	15.6	6.7	11.2	-1.1	25.6	13	- 0.6	27	3	1	7.8	81	62	- 34	21	17	0	0	0	3.8	SSW	13.0	SSW	15	2	2	27	8.9	
NOME	4	1007.4	1008.1	10.0	5.6	7.8	-1.6	15.6	13	1.1	19+	0	0	6.1	89	76	- 20	15	24	0	0	0	6.4	S	16.5*	WSW	22	1	3	27	9.3	14
ST. PAUL ISLAND	7	1011.9	1012.9	10.0	5.6	7.9	-0.8	12.2	5	- 1.1	26	0	2	6.7	92	73	- 10	20	18	0	0	0	6.9	SW	17.4*	SSW	16	0	6	25	9.1	
SHEMYA	37	1010.7	1014.5	10.0	6.7	8.5	-1.3	12.8	16	3.3	26	0	0	7.2	93	150	97	57	13	0	0	0	6.4	SW	23.2*	SW	1	0	4	27	9.5	
YAKUTAT	9	1017.7	1018.8	17.2	8.3	12.7	0.6	24.4	13	2.8	29	5	0	11.1	90	192	- 85	87	12	0	0	0	2.0	E	9.4*	ESE	14	6	6	19	7.4	
ARIZONA																																
FLAGSTAFF	2131	794.6	1017.1	24.4	10.6	17.7	-0.3	30.0	13	7.2	29	0	0	10.6	72	126	54	45	16	27	0	0	2.2	S	7.2*	SSE	17	2	12	17	7.5	
PHOENIX	340	972.1	1010.3	37.2	23.9	30.6	-1.1	41.7	10	20.6	6	31	0	16.7	46	68	40	21	10	17	0	0	3.1	ESE	21.5*	SE	25	11	15	5	4.7	78
PRESCOTT	1528	849.6	1014.2	29.4	16.1	22.6	-0.4	35.0	12	13.3	31	5	0	13.9	65	104	36	28	18	23	0	0	3.4	SSW	17.0	SW	30	3	18	10	6.3	66
TUCSON	788	925.3	1011.4	33.3	22.2	27.9	-0.7	36.7	12+	18.9	25+	25	0	17.2	57	73	- 1	23	11	28	0	0	3.7	SSE	18.8	SE	15	8	12	11	6.0	65
WINSLOW	1487	854.1	1014.9	31.1	17.2	24.3	-1.4	36.7	13	14.4	31	13	0	13.9	61	122	86	35	16	18	0	0	3.6	ESE	13.9*	SE	5	3	15	13	6.7	
YUMA	61	1004.3	1009.4	40.0	26.7	33.2	-1.0	44.4	10	23.3	6	30	0	17.2	43	2	- 11	1	2	4	0	0	3.8	SSE	13.9	SE	13	22	5	4	2.9	88
ARKANSAS																																
FORT SMITH	137	998.7	1015.3	35.6	20.6	28.2	0.3	41.1	28+	14.4	15	26	0	21.1	69	22	- 52	12	5	1	0	0	2.6	ENE	7.6	W	25+	12	10	9	4.8	75
LITTLE ROCK	78	1003.0	1015.9	33.9	20.6	27.3	-0.1	41.7	28	12.8	16	21	0	21.1	74	16	- 56	11	5	4	0	0	2.6	WSW	10.3	W	10	13	6	12	5.0	73
TEXARKANA	110	1001.8	1015.5	35.0	22.8	28.6	0.5	38.9	26	15.0	16	26	0	21.1	69	76	- 2	69	5	6	0	0	3.4	NE								
CALIFORNIA																																
BAKERSFIELD	151	994.7	1012.1	33.9	18.9	26.6	-1.0	38.3	16	13.3	24	26	0	10.0	37	T	0	T	0	0	0	0	2.7	NW	7.2*	NNW	30	28	1	2	1.0	
BISHOP	1252	873.9		34.4	11.1	22.8	-0.4	39.4	15	6.7	25	22	0			15	12	10	3	3	0	0						27	1	3	1.7	
BLUE CANYON	1609	841.2		23.3	12.8	18.2	-1.6	27.8	16	7.2	25+	0	0			T	- 1	T	1	0	0	0	2.5	WSW	10.3	SSW	23	26	2	3	1.6	
BURBANK	213	987.7	1013.4	29.4	16.1	22.9	-0.4	36.7	13	13.3	25	5	0	13.9	64	T	- 1	T	1	0	0	0	2.7	S	7.2*	ESE	11+	22	8	1	2.2	
EUREKA U	13	1015.8		16.1	11.7	13.9	0.2	18.9	31+	10.6	25+	0	0			2	- 1	1	2	0	0	0	2.5	NW#	8.0	NW	14	5	10	16	7.0	43
FRESNO	99	1000.1	1011.8	35.0	16.1	25.7	-0.1	40.0	15	12.2	25+	25	0	10.0	41	T	0	T	1	1	0	0	3.1	WNW	8.5	NW	22	27	2	2	1.3	95
LONG BEACH	10	1012.4	1014.0	28.9	17.2	23.2	0.7	32.2	13+	13.9	26+	2	0	16.1	72	T	- 1	T	0	0	0	0	2.7	WNW	7.6*	NW	13+	19	9	3	3.3	
LOS ANGELES	30	1009.9	1013.8	25.6	17.8	21.7	1.6	30.6	15	15.6	25	0	0	15.6	72	T		T	1	0	0	0	3.7	W	8.9*	W	11+	18	9	4	3.5	
LOS ANGELES U	95			28.9	17.8	23.2	0.3	33.3	14	15.6	13	3	0			1	- 1	1	2	0	0	0	2.3	W#	8.0	W	31	23	7	1	2.3	84
MT SHASTA R	1080	893.4		28.3	8.9	18.7	-0.6	33.9	7	3.9	25	4	0			10	5	10	1	2	0	0						25	3	3	2.1	
OAKLAND	1	1014.5	1014.9	22.8	12.8	17.7	-0.2	31.1	15	11.7	26+	0	0	11.1	72	T	- 1	T	1	0	0	0	4.2	WNW	10.3*	WSW	22	17	9	5	3.6	
POINT ARGUELLO R	112	1001.1		20.0	11.1	15.4	-0.4	22.8	15+	8.3	28+	0	0			1	1	1	5	0	0	0	2.5		9.4*	NW	31	8	9	14	6.1	
RED BLUFF	104	999.7	1012.2	34.4	17.2	25.9	-1.3	40.6	15	12.8	25+	23	0	7.2	34	T	- 2	0	0	0	0	0	3.6	SSE	11.6	SE	12	23	6	2	1.8	93
SACRAMENTO	5	1011.5	1012.9	33.9	14.4	23.9	-0.6	39.4	15	10.6	25	22	0	12.2	56	T	- 1	T	0	0	0	0	2.5	SW	8.9	W	22	22	8	1	2.2	92
SACRAMENTO U	7			32.2	15.0	23.7	-0.1	38.3	15	11.7	25	22	0			T	- 1	T	0		0	0										
SANDBERG R	1377	864.0		28.3	15.6	21.8	-1.2	34.4	14	6.7	23	2	0			6	3	4	2	1	0	0	4.7	S	13.4*	NNW	19	25	4	2	1.5	
SAN DIEGO	4	1010.2	1013.4	26.1	18.3	22.3	0.8	28.9	8	16.1	24	0	0	16.1	73	T	- 2	T	0	0	0	0	3.5	WNW	7.6	NW	25+	17	10	4	3.6	73
SAN FRANCISCO	2	1014.3	1015.0	22.8	12.2	17.5	0.4	30.0	15	10.0	1	0	0	11.1	74	T	- 1	T	0	0	0	0	5.5	WNW	16.5	W	18	21	7	3	3.0	
SAN FRANCISCO U	16			18.9	12.2	15.4	0.2	26.1	26	10.6	7+	0	0			T	- 1	T	0	0	0	0	4.5	W#	11.6	SW	30					68
SANTA CATALINA	478	958.4		26.7	16.7	21.7		36.1	14	12.8	30+	2	0			T		T	0	0	0	0						22	6	3	2.4	
SANTA MARIA	73	1006.2	1014.9	22.8	11.7	17.1	0.2	28.3	14	7.8	25	0	0	12.8	81	1	0	1	2	0	0	0	2.9	WNW	11.2*	WNW	31	24	4	3	2.8	
STOCKTON	9	1011.4	1013.1	33.3	15.0	24.3		38.9	15	11.1	23+	22	0	11.1	50	0		0	0	0	0	0	2.8	WNW	8.9*	WSW	30	26	3	2	1.5	
COLORADO																																
ALAMOSA	2297	777.0		25.6	9.4	17.6	0.4	30.0	2+	5.6	28	0	0			47	23	9	18	17	0	0						4	14	13	6.2	
COLORADO SPRINGS	1882	817.2	1017.9	27.8	14.4	21.0	0.6	35.6	1	11.7	31	1	0	11.7	62	133	78	40	18	19	0	0	4.0	N	12.5*	WNW	1	5	9	17	6.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	841.7	1015.8	27.2	13.3	20.4	-1.8	35.6	1	9.4	30	1	0	12.2	65	64	31	16	13	11	0	0	3.5	S	14.8	W	25	4	15	12	6.5	63
GRAND JUNCTION	1478	861.4	1014.0	29.4	17.2	23.1	-1.1	34.4	16+	11.7	31	8	0	10.0	49	44	17	14	11	11	0	0	2.5	SE	13.0	NW	31+	8	12	11	6.0	54
PUEBLO	1414	859.4	1014.8	31.1	16.1	23.6	-0.1	38.9	1	12.8	28	13	0	13.3	59	58	11	22	13	9	0	0	4.2	SSE	21.0	N	28	5	17	9	5.9	72
CONNECTICUT																																
BRIDGEPORT	2	1014.1	1014.9	25.6	16.1	21.0	-1.4	29.4	9	10.0	26	0	0	15.6	73	46	- 67	19	6	4	0	0	5.1	SW	13.4*	NW	14	8	12	11	5.6	
HARTFORD	52	1007.8	1013.8	27.2	13.9	20.5	-0.7	32.2	22	7.8	26+	1	0	13.9	71	40	- 61	10	11	5	0	0	2.8	S	12.5	NW	14	3	17	11	6.7	74
NEW HAVEN	2	1013.6		26.1	16.1	20.8	-0.6	30.6	4	10.6	26+	0	0			53	- 55	16	5	4	0	0	3.2		13.0	NW	14	7	15	9	5.7	73
DELAWARE																																
WILMINGTON	24	1011.8	1015.0	27.2	16.7	22.1	-1.4	31.1	9	9.4	25	0	0	15.6	68	102	- 40	33	10	8	0	0	2.8	WNW	13.4*	WNW	14	10	11	10	5.6	
DIST.OF COLUMBIA																																
WASH NATL AP	4	1010.8	1015.4	30.0	18.3	24.1	-0.6	34.4	4	10.6	15	5	0	15.0	59	179		138	11		0	0										
WASHINGTON U	22			30.0	19.4	24.7		34.4	4+	13.3	26	9	0			183	59	158	10	2	0	0	3.7	S	17.0	NNW	20	9	14	8	5.4	75
FLORIDA																																
APALACHICOLA U	4	1013.8		31.7	24.4	27.9	0.4	33.3	6	22.8	15	10	0			106	- 90	50	10	18	0	0	2.1		9.4	SW	8	10	11	10	5.8	
DAYTONA BEACH	9	1015.0	1016.8	31.7	22.8	27.4	0.3	34.4	14	21.1	22	14	0	22.8	80	51	-111	30	9	15	0	0	2.8	SW	13.0*	W	9	8	16	7	5.5	
FORT MYERS	4	1015.5		33.9	23.9	28.7	0.5	35.0	31+	21.7	20+	30	0			101	- 86	42	11	17	0	0	3.3		10.3*	SW	20+	5	22	4	5.5	
JACKSONVILLE	7	1014.8	1016.0	32.8	22.8	27.8	-0.1	36.1	8	20.0	22	22	0	22.8	80	126	- 48	26	16	15	0	0	2.9	SW	20.1	E	1	7	18	6	5.4	70
KEY WEST	2	1014.4	1015.7	32.2	26.7	29.4	0.8	33.9	16+	20.6	20	25	0	23.3	71	182	72	52	13	16	0	0	4.2	ESE	12.5	N	17	3	20	8	6.1	68
LAKELAND U	65			33.3	23.3	28.2	0.5	35.0	25+	21.7	22+	25	0			156	- 23	57	16	22	0	0	2.4					4	19	8	6.0	65
MIAMI BEACH	3			31.7	26.1	29.1	0.8	33.9	13	22.2	20	11	0			112	- 17	57	12		0	0	5.5	E	11.6	NW	7	5	22	4	5.0	64
MIAMI	2	1014.6	1015.9	32.2	24.4	28.3	0.4	33.9	9	22.2	19	20	0	23.3	77	121	- 56	36	15	17	0	0	3.9	ENE	12.1*	NE	22	3	20	8	6.0	
ORLANDO	32	1011.9	1016.5	34.4	23.3	28.8	1.2	36.7	10+	21.1	22+	29	0	22.8	77	90	- 86	30	14	18	0	0	3.3	WSW	11.2*	SSW	20	5	20	6	5.6	
PENSACOLA U	4			32.2	23.9	28.2	0.4	35.6	26	21.1	15	16	0			72	-121	23	10	12	0	0	3.0	N	11.6	NW	23					72
TALLAHASSEE	18	1013.5	1016.2	33.3	22.8	27.9	0.7	36.1	7	20.0	18	24	0	22.8	81	196	20	34	14	22	0	0	3.0	W	15.6*	S	19+	2	21	8	6.2	
TAMPA	6	1014.9	1016.5	32.8	23.9	28.2	0.4	35.6	7+	21.1	22+	24	0	22.2	75	104	-105	30	13	22	0	0	3.7	E	14.8*	NW	15	2	20	9	6.2	78
WEST PALM BEACH	5	1015.6	1016.6	33.3	23.9	28.6	0.3	36.7	14	22.2	23+	27	0	22.8	75	103	- 68	20	13	15	0	0	3.4	ESE	15.6*	NNE	11	4	20	7	5.6	
GEORGIA																																
ATHENS	245	987.3	1015.7	32.2	20.0	26.1	0.0	35.0	6+	17.2	17+	21	0	19.4	72	22	- 70	12	6	6	0	0	2.6	NW	9.4*	NE	10	15	9	7	4.8	
ATLANTA	306	975.1	1016.3	30.6	20.0	25.4	-0.4	32.8	7+	17.8	15+	7	0	20.0	76	22	- 69	9	4	4	0	0	2.6	WNW	9.4*	N	13	12	13	6	4.6	80
AUGUSTA	44	1008.6	1015.3	33.9	21.1	27.3	0.5	36.7	13+	16.7	17	24	0	21.1	72	40	- 59	24	6	4	0	0	2.6	SE	9.4*	E	25+	6	19	6	5.3	
COLUMBUS	117	1001.8		33.3	21.1	27.4	0.3	36.7	6	17.2	15	24	0			77	- 41	34	6	6	0	0	2.3		11.2*	NNW	13	10	14	7	5.1	
MACON	109	1002.5	1015.9	33.9	21.7	27.8	0.4	37.2	7	18.9	15	28	0	20.6	70	42	- 64	17	9	5	0	0	2.5	NW	12.5	NE	8	15	9	7	4.7	74
ROME	194	993.8		32.2	18.3	25.3	-0.5	35.0	7+	14.4	15	19	0			33	- 63	15	4	5	0	0						12	14	5	4.7	
SAVANNAH	15	1013.2	1015.8	33.3	22.2	27.6	0.4	36.7	7	20.0	29+	25	0	22.2	77	60	-108	22	7	13	0	0	3.1	SW	12.5	E	26	5	17	9	5.7	76
THOMASVILLE U	86			33.3	22.8	27.8	0.1	36.7	26	20.0	22	24	0			102	- 39	23	13	19	0	0										
HAWAII																																
HILO	9	1014.4	1015.7	28.3	20.0	24.3	-0.1	31.7	20	18.3	2+	0	0	20.0	79	195	- 96	36	26	0	0	0	3.8	WSW	9.8	ESE	4+	0	11	20	8.1	32
HONOLULU	2	1014.9	1015.3	31.7	23.3	27.5	1.2	32.8	8	21.1	4	5	0	18.9	62	1	- 22	1	2	0	0	0	5.2	ENE	11.6	NE	25	9	12	10	5.4	74
KAHULUI	13	1012.2	1015.0	31.1	21.1	26.1		32.8	4	18.9	3+	3	0	18.9	68	1		T	2	0	0	0	9.0	ENE	17.4*	ENE	11	7	21	3	4.9	83
LIHUE	35	1011.2	1016.6	30.0	23.9	26.8	1.1	30.6	28+	21.1	16+	0	0	20.6	71	34	- 28	23	11	0	0	0	5.5	ENE	10.7	NE	30	2	14	15	7.3	62
IDAHO																																
BOISE	865	918.4	1012.5	31.7	14.4	23.1	0.8	40.0	13	8.9	20+	18	0	6.7	38	16	12	15	2	2	0	0	3.2	WNW	25.0	SE	9	20	8	3	2.9	87
IDAHO FALLS 42NW R	1460			30.6	7.8	19.3	0.2	36.1	14	2.8	27+	13	0			25	13	11	4		0	0	4.1	NNE	13.4A	SW	1					
IDAHO FALLS 46W R	1504	849.6		29.4	8.9	19.2	0.0	34.4	14	2.2	2	4	0			23	10	10	3	2	0	0	3.0	WSW	11.2A	WSW	1					
LEWISTON	431	962.7		31.7	15.0	23.2	1.1	37.2	11+	9.4	27+	15	0			15	5	8	5	6	0	0						17	7	7	3.9	
POCATELLO	1355	864.0	1013.8	30.6	12.2	21.3	0.2	35.6	14	7.2	27	11	0	3.9	36	13	- 1	10	6	5	0	0	3.4	SW	15.2	SW	12	17	8	6	4.1	78
ILLINOIS																																
CAIRO U	96	1003.2		31.1	20.6	25.8	-0.8	36.7	3	15.0	15	12	0			123	44	56	8	6	0	0	2.7	N#	14.8	W	12	13	10	8	4.8	76
CHICAGO O HARE	201	992.0	1016.4	26.7	13.9	20.3		32.8	2	5.6	18	1	0	14.4	70	69		46	7	4	0	0	3.4	SSE	10.3*	N	13+	5	13	13	6.3	
CHICAGO MIDWAY	186	994.0	1016.6	27.8	17.2	22.6	-1.0	34.4	2	9.4	18	3	0	16.1	70	55	- 26	41	6	4	0	0	3.7	SW	16.5	NW	2	3	17	11	6.3	53
MOLINE	177	994.6	1016.6	27.2	15.6	21.6	-1.6	36.1	2	6.7	18	3	0	16.7	75	102	12	57	5	7	0	0	3.2	WSW	17.0	NW	28	9	10	12	6.3	62
PEORIA	199	995.4	1017.5	27.2	15.6	21.3	-2.2	35.0	2	7.2	18	3	0	16.1	73	76	3	24	6	4	0	0	3.3	S	10.7	SE	28	8	10	13	6.2	65
ROCKFORD	222	989.7	1016.6	27.2	15.0	21.0	-1.5	34.4	2	7.2	18	2	0	14.4	68	47	- 58	22	9	5	0	0	3.3	SSW	10.7*	N	2	9	10	12	5.8	
SPRINGFIELD	179	993.0	1016.1	27.2	15.6	21.4	-2.6	33.9	2	9.4	18	1	0	17.8	80	139	69	47	8	7	0	0	2.9	N	11.2	N	9	9	10	12	5.9	79

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1000.5	1016.3	31.1	16.1	23.7	-1.2	37.2	3	9.4	16	15	0	17.2	71	63	- 15	44	8	3	0	0	2.5	NW	21.9	NW	28	10	14	7	5.3	77
FORT WAYNE	241	985.8	1016.7	26.1	14.4	20.2	-2.3	31.1	3	7.8	18	0	0	14.4	72	32	- 45	10	6	2	0	0	3.1	NW	14.3	NW	2	8	12	11	6.2	66
INDIANAPOLIS	242	987.0	1016.8	26.7	14.4	20.5	-2.7	34.4	3	7.8	15	1	0	16.1	78	56	- 21	23	8	5	0	0	2.6	NNW	17.9*	N	9	5	15	11	6.3	65
SOUTH BEND	234	988.6	1016.4	25.6	13.9	19.8	-2.4	29.4	23+	5.0	18	0	0	13.9	69	33	- 57	24	10	4	0	0	3.3	NNW	12.1*	WNW	3	6	12	13	6.3	
IOWA																																
BURLINGTON	212	991.6	1016.8	27.2	16.1	21.9	-1.8	37.2	2	10.0	18	3	0	16.7	76	80	- 12	35	8	5	0	0	3.4	NW	11.6	SW	16	9	9	13	6.0	67
DES MOINES	289	986.0	1016.9	26.7	17.2	21.9	-1.7	36.1	2	10.6	18	2	0	17.2	77	123	29	75	8	4	0	0	3.2	SSE	13.4	W	16	6	13	12	6.2	55
DUBUQUE	325	991.4		26.1	15.0	20.5	-0.9	32.8	8+	7.8	18	2	0			168	73	68	9	8	0	0			13.9*	SSW	16	7	12	12	6.3	
SIOUX CITY	334	975.4	1016.0	27.8	17.2	22.5	-0.9	33.9	22	10.0	18	3	0	17.8	77	110	43	37	12	8	0	0	3.2	SSE	11.2	NE	9	6	14	11	6.4	50
WATERLOO	265	985.3	1016.9	27.2	15.0	21.1	-1.3	32.8	2	5.6	19	3	0	16.1	77	76	- 10	50	9	6	0	0	3.3	SSE	10.7*	WSW	28	5	16	10	6.2	
KANSAS																																
CONCORDIA	448	965.5	1014.6	32.2	18.3	25.3		39.4	5+	11.7	14	15	0	16.7	65	78		55	10	14	0	0	4.7	ENE	13.4	N	16	14	8	9	4.7	65
DODGE CITY	791	928.1	1014.2	33.9	18.9	26.3	0.1	38.9	6	10.6	14	21	0	14.4	54	31	- 29	19	5	8	0	0	5.4	SSE	13.0	S	21+	11	9	11	5.1	72
GOODLAND	1111	890.1	1014.4	31.7	16.1	24.0	0.3	38.3	1	11.7	19	17	0	13.3	57	45	- 13	19	8	10	0	0	5.5	S	17.0*	SSE	5	12	11	8	4.9	
TOPEKA	267	980.1	1015.0	32.2	19.4	25.8	0.0	40.0	27	11.1	15	16	0	17.8	65	33	- 76	25	5	8	0	0	4.9	S	13.4	SSE	5	11	11	9	5.4	70
WICHITA	403	966.6	1014.1	33.3	21.1	27.3	0.2	40.0	6	13.3	14	20	0	17.8	59	73		58	8	6	0	0	4.2	S	15.2	N	28	12	14	5	4.4	75
KENTUCKY																																
COVINGTON	265	984.7	1016.2	28.3	14.4	21.4	-2.6	36.7	3	9.4	16	3	0	15.6	74	46	- 20	18	9	5	0	0	2.8	N	13.0*	NW	9	4	16	11	6.2	
LEXINGTON	298	981.3	1016.7	27.8	17.2	22.5	-1.9	32.2	3	11.1	15	1	0	16.7	73	105	24	38	9	7	0	0	2.8	NNE	15.6*	NW	28	9	13	9	5.4	
LOUISVILLE	144	997.0	1016.0	28.9	17.2	23.0	-1.3	35.0	3	10.6	15	3	0	18.3	76	54	- 21	16	9	7	0	0	2.5	NNE	13.0	E	28	6	16	9	5.8	63
LOUISIANA																																
ALEXANDRIA	28	1011.5	1016.1	33.9	20.6	27.3		37.8	27	13.3	16	26	0	21.7	77	61		30	6	12	0	0	1.8	SSW	14.8	N	30	9	17	5	4.8	
BATON ROUGE	20	1013.3	1016.3	33.3	22.8	28.1	0.6	35.6	29+	17.8	16	28	0	23.3	79	93	- 41	33	8	14	0	0	2.0	SW	10.3	NNE	8+	7	21	3	5.1	
LAKE CHARLES	4	1014.7	1016.2	33.3	23.3	28.3	0.2	35.6	13	16.7	16	28	0	22.8	76	47	- 74	27	6	10	0	0	2.8	SSW	8.9*	SSW	12	11	16	4	4.5	
NEW ORLEANS	1	1014.0	1016.1	32.8	22.8	27.6	0.1	35.0	8	18.3	17	24	0	23.3	81	54	- 82	21	10	13	0	0	2.4	WSW	7.6*	N	30+	13	14	4	4.5	
NEW ORLEANS AUDUBON	2	1009.6		32.8	23.9	28.5		35.0	26	21.7	21+	26	0			130		66	11	12	0	0	1.3	W#	7.6	NE	21	6	21	4	4.9	61
SHREVEPORT	77	1006.8	1016.0	35.6	23.3	29.4	0.9	39.4	27+	16.7	16	27	0	21.1	65	95	30	62	7	9	0	0	3.7	SSW	16.5	WSW	13	15	12	4	4.0	79
MAINE																																
CARIBOU	190	988.9	1011.9	20.6	9.4	15.0	-2.0	27.8	6	3.9	23	0	0	12.2	80	161	68	36	18	3	0	0	4.5	SW				0	14	17	7.8	
PORTLAND	19	1008.8	1012.9	23.3	11.1	17.2	-2.2	30.0	22+	5.0	11	0	0	13.3	79	83	21	19	13	8	0	0	3.0	S	13.0	N	25	6	12	13	6.7	55
MARYLAND																																
BALTIMORE	45	1010.4	1015.2	29.4	16.1	22.7	-1.2	35.0	4	10.0	15	9	0	15.6	69	107	- 25	51	10	4	0	0	3.8	W	13.4	NW	14	9	14	8	5.1	72
BALTIMORE U	4			29.4	20.0	24.8	-0.3	33.9	4+	13.9	25	8	0			98	- 19	37	7		0	0										
FREDERICK	90			28.3	15.0	21.8	-1.4	32.2	9+	8.3	26	2	0			85	- 25	46	6		0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	989.4		25.0	14.4	19.7	-1.1	30.6	22	8.3	25	0	0			90	- 13	29	13		0	0	5.6	WSW	19.2	NW	14					66
BOSTON	5	1008.4	1013.1	26.1	16.7	21.3	-0.7	32.8	22	12.2	26+	1	0	13.9	66	42	- 51	10	11	2	0	0	5.5	W	16.5	NW	14	4	16	11	6.2	65
NANTUCKET	13	1013.4	1014.1	23.3	16.1	19.8	0.1	26.7	6	12.2	26	0	0	16.1	81	122	28	51	10	7	0	0	5.0	SSW	18.8	S	13	8	11	12	6.2	67
PITTSFIELD	357			23.3	10.6	16.9	-2.1	28.3	23+	3.9	26	0	0			76	- 23	21	14		0	0										
WORCESTER	301	977.3	1013.7	23.9	13.3	18.8	-1.4	28.3	22+	8.3	25	0	0	12.8	72	67	- 40	14	11	6	0	0	4.1	W	13.9*	WNW	14	4	18	9	6.0	
MICHIGAN																																
ALPENA	210	990.4		23.3	8.9	16.0	-2.6	30.0	22+	1.7	16	0	0			104	27	40	12	6	0	0	2.8	W	12.1	NE	13	8	13	10	5.9	58
DETROIT	189	989.4	1015.8	26.7	15.6	21.2	-1.2	32.8	22+	9.4	18	4	0	13.3	64	43	- 29	18	8	2	0	0	3.9	NW	14.8	NW	13	8	11	12	5.9	62
DETROIT M WAYNE CO	193	992.2	1016.1	26.7	12.2	19.3	-2.6	32.8	7	6.7	18	2	0	14.4	76	37	- 36	17	7	2	0	0	2.9	WSW				7	12	12	6.0	
DETROIT WILLOW RUN	217	987.9	1016.0	26.7	13.9	20.3	-2.3	33.9	7	7.2	18	2	0	13.3	69	35	- 37	15	7	2	0	0	4.3	NW	13.4*	WNW	13	8	11	12	5.9	
ESCANABA U	181	993.3		21.7	12.8	17.3	-1.3	29.4	1	5.0	31+	0	0			57	- 22	35	6	3	0	0	4.2		17.4	N	13	11	13	7	5.2	59
FLINT	233	989.1	1016.8	25.0	12.2	18.5	-2.4	31.1	6+	5.6	18	0	0	13.3	75	79	- 1	23	7	3	0	0	3.4	WSW	10.7*	WSW	3	8	11	12	5.9	
GRAND RAPIDS	210	991.7	1016.5	25.6	13.9	19.6	-1.8	30.6	21	6.1	18	0	0	13.3	70	84	15	33	9	7	0	0	3.6	NW	11.6	S	2	10	11	10	5.6	65
LANSING	260	984.3	1016.0	25.0	12.2	18.7	-2.6	31.1	22	5.0	18	0	0	13.9	74	72	- 5	26	10	4	0	0	2.7	NW	15.2	SW	2	8	11	12	5.9	58
MARQUETTE U	206	988.9		22.2	13.3	17.7	-1.1	32.8	5	7.8	31	1	0			44	- 33	23	10	3	0	0	3.3	NW#	11.6	SW	27	7	14	10	5.8	66
MUSKEGON	191	993.3	1016.2	24.4	14.4	19.2	-1.6	28.3	9	6.7	18	0	0	15.0	79	84	10	18	10	7	0	0	4.5	SW	13.0*	SSW	16	12	8	11	5.2	
SAULT STE MARIE	220	992.7	1015.4	21.7	11.1	16.2	-1.3	28.9	21	5.0	31	0	0	11.7	77	102	29	32	13	5	0	0	3.7	WNW	11.2*	SSE	3	8	12	11	5.9	60
MINNESOTA																																
DULUTH	435	975.4	1016.9	23.9	10.6	17.2	-0.8	32.2	6	5.0	17	1	0	12.8	76	75	- 22	40	11	6	0	0	4.0	WNW	13.4	S	26+	5	17	9	6.2	58

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State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
INTERNATIONAL FALLS	359	975.3	1016.3	24.4	10.0	17.2	-0.1	30.0	4	3.3	17	0	0	12.8	77	80	- 13	35	9	5	0	0	2.4	NW	9.8*	NNE	12	9	11	11	5.7	
MINNEAPOLIS	251	983.5	1016.5	27.2	13.9	20.5	-0.9	34.4	7+	7.8	18+	4	0	14.4	72	39	- 41	11	8	7	0	0	3.5	SSW	14.8	NW	8	10	10	11	5.9	72
ROCHESTER	395	969.6	1017.1	25.0	13.3	19.3	-1.7	31.1	7	6.7	19+	0	0	15.0	78	82	- 14	42	8	9	0	0	4.2	S	13.0*	NNW	9	7	11	13	6.2	
ST CLOUD	315	977.9		26.7	13.3	20.0	-0.3	33.3	7+	7.2	17	2	0			150	55	6[illegible]	10	4	0	0						10	12	9	5.4	
MISSISSIPPI																																
JACKSON	93	1003.1	1016.1	33.9	21.1	27.7	0.3	37.2	27+	15.0	15	26	0	21.1	73	42	43	17	7	9	0	0	2.5	SSE	8.0	WSW	19	13	16	2	4.4	
MERIDIAN	89	1002.7	1016.2	33.3	20.0	26.8	-0.6	37.2	6	15.0	15	26	0	21.7	77	128	38	86	7	9	0	0	1.8	N	10.3*	S	28	12	14	5	4.9	
VICKSBURG U	71	1006.7		32.2	22.8	27.4	-0.2	35.6	26	15.0	15	22	0			147	70	122	6	8	0	0	2.6		10.3	NNW	13	17	11	3	3.7	80
MISSOURI																																
COLUMBIA	237	987.2	1015.3	30.0	18.3	24.3	-0.8	36.7	8+	11.7	15	11	0	17.8	71	110	13	41	7	6	0	0	3.8	SSE	9.8	NW	13	13	7	11	5.4	76
KANSAS CITY	226	981.0	1015.0	31.7	20.6	26.1	-0.2	38.3	5+	14.4	15	15	0	18.3	63	104	8	50	7	7	0	0	3.9	ENE	14.8	NE	1	14	8	9	5.2	71
ST JOSEPH	247	981.6		30.0	18.9	24.4	-0.8	37.2	5+	12.2	15	12	0			117	10	48	7	7	0	0	2.8	SSE	10.3*	ESE	1	12	12	7	4.9	
ST LOUIS	163	995.8	1016.3	30.0	17.8	23.8	-1.6	38.9	3	11.1	15	11	0	17.2	69	65	- 12	38	6	5	0	0	3.5	NNE	13.9	NE	9	12	11	8	5.0	59
ST LOUIS RFC	142			30.0	20.0	24.9	-1.3	38.3	3+	12.2	18	12	0			61	- 31	37	6	6	0	0										
SPRINGFIELD	386	969.2	1015.9	31.7	18.9	25.3	-0.2	37.8	28	11.7	15	16	0	19.4	74	48	- 37	23	7	5	0	0	3.5	SSE	20.1	NW	6	15	8	8	4.5	79
MONTANA																																
BILLINGS	1087	892.9	1014.8	29.4	13.9	21.7	0.1	35.0	6	9.4	29	9	0	7.2	45	10	- 13	8	3	7	0	0	4.1	NE	18.8	NW	14	15	13	3	3.7	86
GLASGOW	694	941.3		29.4	13.9	21.6	1.7	37.2	7	8.9	30+	10	0			84	46	43	5	7	0	0						16	9	6	4.1	
GREAT FALLS	1116	890.5	1015.5	28.9	11.7	20.4	0.8	36.1	7	6.7	2	8	0	5.0	40	12	- 20	4	7	8	0	0	4.0	WSW	14.8	W	6	15	13	3	3.7	81
HAVRE	787	927.7		30.0	12.2	21.1	1.6	38.3	7	5.0	22	11	0			18	- 10	11	4	7	0	0	3.6	W#	17.9	SW	15	21	7	3	3.4	85
HELENA	1187	875.6	1015.7	28.9	11.1	20.0	1.0	35.6	14	5.6	26	8	0	5.0	42	20	- 2	8	7	11	0	0	3.5	WNW	13.9	W	22+	14	14	3	3.7	80
KALISPELL	904	913.1		28.3	8.3	18.4	1.2	35.0	7+	1.1	21	7	0			21	- 7	15	7	7	0	0	2.6					17	10	4	3.7	
MILES CITY	801			31.7	14.4	23.3	0.7	39.4	7	7.2	29	15	0			28	- 3	15	4	7	0	0	3.8	NE	8.9*	NNW	20+					
MISSOULA	972	903.5	1016.5	29.4	8.9	19.2	1.0	36.1	9	2.2	27	13	0	7.2	52	33	14	20	9	10	0	0	3.1	NNW	11.6	SE	23	13	13	5	4.2	79
NEBRASKA																																
GRAND ISLAND	561	950.3	1015.6	30.0	16.1	23.1	-1.8	38.3	1	8.9	14	12	0	16.1	70	78	18	35	7	12	0	0	4.2	SSE	11.2*	SSW	1	9	12	10	5.5	
LINCOLN U	351			30.0	18.9	24.4	-1.0	39.4	2	12.8	14	10	0			58	- 28	21	9	8	0	0	4.2	NE#	14.8	S	1	6	17	8	5.6	66
NORFOLK	471	960.8		28.3	17.2	22.7	-1.3	37.2	22	10.6	20	8	0			99	33	33	9	10	0	0						4	15	12	6.3	
NORTH PLATTE	847	917.1	1014.4	30.6	15.6	23.0	-0.6	40.0	1	9.4	14	13	0	15.0	66	55	1	36	12	11	0	0	4.4	SE	15.6	S	22	7	9	15	6.4	61
OMAHA	298	976.6	1015.7	29.4	17.8	23.5	-1.1	36.7	2	11.7	20	7	0	17.2	71	122	21	53	11	5	0	0	3.7	SSE	11.6	S	1	7	13	11	5.8	66
OMAHA N OMAHA AP	403	968.6		28.3	17.8	22.9	-0.3	35.6	2	11.7	18	7	0			92	- 13	46	11	7	0	0						3	14	14	6.5	
SCOTTSBLUFF	1204	881.1	1014.5	30.6	15.0	22.8	0.3	37.2	1	12.2	14+	12	0	12.8	58	25	- 1	12	8	8	0	0	4.3	ESE	15.6*	ESE	30	5	15	11	6.1	
VALENTINE	789	925.3		30.6	15.6	23.1	0.3	38.3	15	8.9	14	13	0			56	- 2	39	7	13	0	0	4.2	S#				8	14	9	5.3	71
NEVADA																																
ELKO	1547	845.7	1013.6	31.1	6.7	19.1	-0.3	35.0	13	- 0.6	26	13	1	- 0.6	30	5	- 3	4	3	3	0	0	3.0	SW	10.3*	WSW	18+	19	7	5	2.8	
ELY	1907	811.3	1012.5	28.9	8.3	18.5	-0.4	32.8	14	2.8	26	2	0	1.7	36	7	- 5	2	6	11	0	0	4.5	S	16.5	SW	23	14	10	7	4.3	93
LAS VEGAS	659	945.9	1010.6	38.3	23.9	31.1	0.1	42.2	14+	18.3	31	31	0	8.3	29	11	- 2	7	4	7	0	0	4.8	SSW	16.1*	ESE	15	18	9	4	3.5	85
RENO	1342	863.5	1015.1	31.1	5.6	18.2	-1.0	35.6	7	- 0.6	25	13	1	2.2	39	4	0	4	4	2	0	0	2.5	WNW	11.6	S	23+	23	6	2	1.9	92
WINNEMUCCA	1310	867.6		32.2	7.8	19.9	0.2	36.7	6	0.6	26	17	0			18	14	18	2	4	0	0	3.0	WNW	17.0	S	9	25	3	3	2.2	88
NEW HAMPSHIRE																																
CONCORD	103	1002.3	1013.1	26.1	11.7	18.7	-1.0	31.7	22	3.3	26	0	0	12.2	72	70	- 6	17	16	7	0	0	2.5	NW	11.6	NW	25+	4	16	11	6.2	60
MT WASHINGTON OBS	1909	805.5		8.9	3.9	6.4	-2.3	13.9	8	- 1.7	25	0	4			324	155	52	20	4	0	0	11.8	W#	35.3Y	W	14	0	8	23	8.8	19
NEW JERSEY																																
ATLANTIC CITY	18	1013.0	1015.3	27.8	17.2	22.4	-0.7	32.2	9	10.6	25+	1	0	16.1	71	74	- 50	23	12	8	0	0	4.6	SSW	14.3*	NW	14	12	7	12	5.7	60
ATLANTIC CITY U	3			25.6	18.3	22.0	-1.2	31.1	23+	12.2	25+	0	0			53	- 78	26	11		0	0	5.7		17.0*	SSW	13					
NEWARK	3	1013.3	1014.6	28.3	18.3	23.3	-0.2	33.3	9	12.8	25	3	0	15.0	62	49	- 64	21	8	4	0	0	4.3	WNW	13.9*	SSW	13	6	15	10	5.8	
TRENTON U	17	1007.0		27.8	17.2	22.6	-0.7	32.2	23	11.1	25	1	0			47	- 74	25	8	6	0	0	3.5	SW#	15.2	NW	14	6	14	11	5.8	63
NEW MEXICO																																
ALBUQUERQUE	1618	850.9	1013.8	31.1	17.8	24.4	-0.4	35.0	8+	15.0	27	13	0	12.8	55	76	42	25	16	14	0	0	3.7	ESE	17.9	SE	7	10	15	6	5.0	71
CLAYTON	1515	848.9		29.4	16.1	22.8	-0.2	35.0	2	13.3	19+	9	0			142	89	112	9	10	0	0						13	10	8	4.8	
RATON	1944	812.6		27.8	13.3	20.5	0.4	34.4	2	10.0	15	2	0			68	2	15	13	15	0	0						12	9	10	5.3	
ROSWELL	1103	894.4		33.9	17.8	25.8	1.3	37.8	2	14.4	27+	25	0			57	16	38	9	10	0	0	3.7		14.3	NW	12	10	12	9	5.5	72
SILVER CITY	1638	838.6		28.9	15.6	22.1		32.2	8	12.8	22	1	0			82		53	13	18	0	0						3	17	11	6.4	

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METRIC UNITS

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State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	°C.	C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
ALBANY	84	1010.1	1014.0	25.6	12.8	19.1	-2.0	30.6	23	7.8	28	0	0	13.3	73	63	- 15	15	13	7	0	0	3.1	SSE	14.8	W	30	4	13	14	6.8	53
BINGHAMTON	485	955.9	1014.4	22.2	12.2	17.1	-2.6	26.7	23	6.1	19	0	0	13.3	80	86	- 5	18	17	8	0	0	3.8	WNW	16.1	NE	1	2	10	19	7.3	52
BUFFALO	215	987.6	1015.5	23.3	12.2	17.9	-2.3	27.2	8+	5.6	25	0	0	13.3	76	204	127	99	14	5	0	0	4.2	WSW	13.0	W	4	5	12	14	6.6	64
NEW YORK U	40	1003.5		27.2	17.2	22.3	-1.7	31.1	9+	11.7	25	0	0			82	- 31	35	11	4	0	0	3.2	W#	13.4	S	11	11	14	6	5.0	59
NEW YORK LA GUARDIA	6	1012.4	1014.2	26.7	18.9	22.8	-1.3	30.0	23+	13.9	25	0	0	15.0	63	108	- 21	44	9	5	0	0	4.9	S	13.4	W	14	6	15	10	5.8	
ROCHESTER	166	995.8	1015.0	24.4	12.8	18.6	-2.3	30.0	6	6.7	25	0	0	13.9	77	83	14	45	12	7	0	0	4.4	WSW	15.6	NW	4	7	9	15	6.3	65
SCHENECTADY	66			24.4	13.9	19.2	-2.3	29.4	23+	9.4	28	0	0			112	29	29	14	3	0	0						18	8	5	3.8	
SYRACUSE	127	991.7	1013.9	24.4	13.3	18.9	-2.3	30.0	3	7.2	25	0	0	12.8	71	91	9	30	16	9	0	0	3.4	W	13.4	NW	4	5	13	13	6.6	60
NORTH CAROLINA																																
ASHEVILLE U	671	938.7		28.3	16.1	22.2	-0.8	32.8	7+	10.0	15	3	0			97	5	61	7	5	0	0	2.6	NW#	11.6	SE	20	15	9	7	4.5	63
CAPE HATTERAS R	2	1014.7	1015.4	28.9	21.1	24.9	-0.4	31.1	18+	16.1	12	0	0	20.6	76	117	- 46	22	13	9	0	0	4.2	NE	10.3*	SW	13	4	12	15	7.1	63
CHARLOTTE	224	988.0	1015.9	32.2	20.0	26.1	0.7	37.8	7	16.1	17+	19	0	18.3	67	90	- 17	49	8	3	0	0	2.8	N	13.9	SE	19	13	9	9	4.9	78
GREENSBORO	272	984.8	1016.3	29.4	17.8	23.7	-0.9	33.3	24+	11.1	15	10	0	16.7	70	59	- 58	0			0	0	2.9	SW	11.6	S	19					
RALEIGH	132	1001.8	1015.4	31.1	18.3	24.6	-0.3	35.6	7	13.3	16+	15	0	17.8	71	53	- 79	17	7	4	0	0	2.6	S	17.9*	WNW	13	8	11	12	5.9	59
WILMINGTON	9	1013.0	1015.9	31.1	21.1	26.0	-0.3	35.0	6	16.1	28	14	0	21.1	78	69	-105	36	6	8	0	0	2.9	SW	11.6	S	13	3	19	9	6.6	69
WINSTON SALEM	295	981.4	1016.2	30.0	18.3	24.1	-0.8	33.3	24+	12.8	15	8	0	17.8	70	64	- 46	26	6	4	0	0	3.0	WSW	8.5*	NNW	14	11	7	13	5.7	
NORTH DAKOTA																																
BISMARCK	502	955.7	1015.5	28.3	12.8	20.6	-0.4	36.7	20	4.4	30	7	0	12.2	64	35	- 9	21	12	13	0	0	3.7	SE	20.1	W	5	12	14	5	4.3	82
FARGO	274	981.6	1015.5	27.8	15.0	21.3	0.4	36.1	8	7.8	17	6	0	14.4	69	112	37	53	9	9	0	0	4.3	SSE	21.0	SW	22	10	11	10	5.5	62
WILLISTON	579	948.4		28.9	12.8	20.7	0.3	36.1	15	6.1	30	9	0			41	4	19	7	7	0	0	3.8	SE#	17.9	E	25	11	15	5	4.8	76
OHIO																																
AKRON	369	978.4	1016.4	25.6	13.3	19.4	-2.0	29.4	3	9.4	15	0	0	13.3	70	57	- 22	16	11	3	0	0	3.1	W	13.9*	NW	4	7	11	13	6.0	
CINCINNATI OBS	232			28.9	16.7	22.6	-1.7	37.2	3	12.2	16+	4	0			62	- 21	29	10	6	0	0	1.8	N#	11.2	N	9					64
CINCINNATI U	169	993.4		29.4	17.8	23.5	-1.1	38.3	3	13.3	16+	7	0			66	- 20	27	9	5	0	0										
CLEVELAND	237	988.5	1016.1	25.0	13.9	19.3	-1.5	30.0	23	8.9	15	0	0	14.4	74	43	- 40	8	12	4	0	0	4.0	SSW	25.5	S	3	9	8	14	6.2	57
COLUMBUS	247	986.9	1016.6	27.8	14.4	21.1	-1.8	36.1	3	7.8	15	1	0	15.0	72	93	21	27	9	5	0	0	3.0	N	14.8	NW	13	4	17	10	6.4	57
COLUMBUS U	221			27.2	16.1	21.7	-2.0	35.0	3	11.1	26+	1	0			84	13	35	12	3	0	0										
DAYTON	304	984.2	1016.6	26.1	14.4	20.3	-2.9	33.3	3	8.3	16	1	0	15.0	76	58	- 15	26	8	3	0	0	3.3	NW	13.4	W	13	5	15	11	6.5	64
MANSFIELD	395			25.0	13.3	19.2	-2.0	30.0	3	7.8	15	0	0			85	3	31	11	5	0	0						6	10	15	6.4	
SANDUSKY U	185			26.1	16.7	21.2	-1.8	30.6	22+	11.1	15	0	0			29	- 54	9	7	4	0	0	3.4		19.7	NW	13+	13	10	8	4.9	73
TOLEDO	206	991.1	1016.1	26.1	13.3	19.7	-1.9	31.1	7	7.8	18+	0	0	13.9	71	56	- 28	23	8	4	0	0	3.0	WSW	13.4	SW	13	10	9	12	5.8	57
YOUNGSTOWN	359	973.9	1016.3	24.4	12.2	18.2	-2.9	27.8	22+	6.7	25	0	0	12.8	73	79	- 10	21	13	3	0	0	3.4	SW	10.3*	WNW	13+	6	9	16	6.6	
OKLAHOMA																																
OKLAHOMA CITY	390	971.9	1014.2	34.4	21.1	27.8	0.4	40.6	24	14.4	20	24	0	18.3	62	41	- 23	23	8	5	0	0	4.7	SSE	17.9	W	13	15	7	9	4.5	79
TULSA	206	990.7	1014.8	34.4	21.7	28.2	0.3	40.0	28+	15.6	20	25	0	20.0	64	83	6	31	9	9	0	0	4.5	SSE	12.5	N	28	16	11	4	3.8	79
OREGON																																
ASTORIA	2	1017.6	1018.2	20.0	12.2	16.2	0.3	26.7	8	8.9	27	0	0	12.8	84	30	- 7	27	4	1	0	0	3.5	NNW	10.3*	NW	8+	4	10	17	7.2	
BURNS U	1265	874.0		28.3	10.0	19.1	-0.4	35.0	8	3.9	25	6	0			6	- 1	4	6	3	0	0						18	8	5	3.3	
EUGENE	110	1003.8		27.2	11.1	19.3	0.4	35.0	8	7.2	26	3	0			4	- 6	3	2	3	0	0	2.7		7.6*	NW	16+	12	11	8	4.6	
MEACHAM	1234			23.9	10.6	17.2	0.7	31.1	11	3.9	1	0	0			28	15	21	6	2	0	0						12	14	5	4.1	
MEDFORD	396	968.7	1015.9	31.1	11.7	21.3	-0.2	37.2	7	6.7	24	14	0	10.0	53	7	2	6	2	2	0	0	2.4	WNW	7.2*	NW	18+	19	9	3	2.9	
PENDLETON	452	962.0	1015.0	30.0	13.9	22.1	0.2	36.7	12+	8.9	1	14	0	6.1	40	8	1	5	3	3	0	0	3.7	SE	13.0*	W	18	15	12	4	3.3	
PORTLAND	6	1011.4	1017.0	25.0	13.3	18.9	-0.3	33.9	8	8.3	1	1	0	13.3	75	22	6	15	7	1	0	0	3.6	NW	9.8	NW	18	7	11	13	6.1	51
PORTLAND U	9			25.0	14.4	19.8	-0.2	33.3	8	11.1	1	1	0			26	8	18	7		0	0										
ROSEBURG	154	998.4		28.3	11.1	19.8	0.0	34.4	11	6.1	24	6	0			T	- 8	T	0	0	0	0	2.3	N#	8.5	NW	20	15	10	6	4.0	77
SALEM	59	1010.3	1017.7	26.7	10.6	18.5	-0.7	34.4	8	5.0	1	1	0	12.2	73	2	- 9	1	5	3	0	0	2.7	N	8.0*	WNW	22+	12	9	10	5.2	
SEXTON SUMMIT R	1169	885.8		23.3	10.6	16.9	-0.1	28.9	11+	5.6	23	0	0			T	- 6	T	0	0	0	0	4.6	NNW				23	5	3	2.4	
PACIFIC AREA																																
CANTON ISLAND	3	1008.1	1008.3	31.7	25.6	28.7	0.1	32.8	21	22.8	29+	13	0	23.9	76	113	50	32	13	0	0	0	5.0	ESE	11.2*	ESE	9	10	11	10	5.8	
ENIWETOK	5	1008.0		31.7	26.1	28.8	0.4	32.8	22+	22.8	28+	13	0			234	61	53	19	2	0	0	4.6									
TAGUAC GUAM R	110			30.0	23.9	27.1	0.8	31.1	28+	21.7	7	0	0			301	- 25	88	28	3	0	0	2.4	E#	8.5	E	12					86
JOHNSTON	2	1011.9	1012.5	28.3	26.1	27.2	-0.3	29.4	23	22.8	10	0	0	23.3	79	84	26	61	11	0	0	0	6.2	E	14.8	E	28	3	13	15	7.1	62
KOROR R	29	1005.9	1008.7	30.0	24.4	27.2	0.0	32.2	19	22.8	17+	1	0	24.4	88	362	- 39	96	24	4	0	0	3.1	W	9.8	N	19	0	0	31	10.0	42
KWAJALEIN	8	1008.7	1008.7	30.6	25.0	27.8	0.1	32.8	21+	23.3	31+	4	0	24.4	83	383	140	86	22	1	0	0	5.0	E	13.9	E	28	3	5	23	8.0	
PONAPE R	37	1003.9	1008.4	31.1	22.8	26.9	0.6	32.2	26+	22.2	6+	4	0	23.9	88	463	49	101	29	3	0	0	1.2	SE	5.8	NE	2	0	6	25	9.0	56
TRUK MOEN ISLAND	2	1008.5	1008.8	30.6	23.9	27.2	0.3	32.2	14+	22.8	27+	2	0	24.4	84	466	141	125	24	0	0	0	2.5	SW	12.1	NW	24	0	1	30	9.3	36
WAKE	3	1011.1	1011.7	31.1	25.6	28.2	0.2	32.2	28+	23.3	24+	3	0	24.4	78	111	- 69	59	15	0	0	0	4.5	ENE	11.2*	SE	24	4	15	12	6.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PACIFIC AREA																															
YAP R		1006.5	1007.6	30.0	23.9	27.1	-0.3	31.7	21+	22.8	31+	0	0	25.0	90	716	343	137	25	7	0	0	2.5	SW	8.5	NE	18+	0	0	31	9.9	54
PENNSYLVANIA																															
ALLENTOWN	115	1001.1	1015.2	27.2	14.4	20.9	-1.3	31.1	23	8.9	25+	0	0	14.4	69	81	- 33	40	9	4	0	0	3.6	WNW	17.4*	NW	14	12	9	10	5.2	
ERIE	223	989.4	1015.5	23.9	15.0	19.3	-1.7	28.9	6+	10.0	27	0	0	13.3	70	67	- 9	27	13	3	0	0	5.0	S	14.3*	NNW	13	9	9	13	5.9	
HARRISBURG	102	1001.6	1015.3	27.2	15.0	21.2	-1.9	31.1	23	8.3	26	0	0	14.4	68	65	- 28	31	13	6	0	0	3.6	W	12.5	NW	14+	8	13	10	6.0	68
PHILADELPHIA	2	1010.5	1014.9	27.8	16.1	21.8	-1.3	31.1	23	8.3	25	0	0	15.6	69	85	- 33	44	10	8	0	0	3.5	WSW	11.6	W	14+	10	12	9	5.6	61
PITTSBURGH	347	985.5	1016.1	26.1	13.9	19.8	-1.7	29.4	1	6.7	15	0	0	13.3	69	59	- 25	14	10	4	0	0	3.2	NW	20.6*	WNW	3	2	14	15	6.9	67
PITTSBURGH U	228			26.7	16.1	21.4	-1.9	30.0	23+	10.6	15	0	0			46	- 42	21	12		0	0										55
READING U	81	1002.7		27.8	16.7	22.1	-1.7	31.7	23	11.1	26+	0	0			44	- 59	19	9	5	0	0	3.8	S#	18.8	NE	1	11	11	9	5.2	64
SCRANTON	287	981.0	1014.9	25.6	14.4	20.2	-0.4	28.9	23+	8.3	26+	0	0	14.4	72	52	- 39	31	9	3	0	0	3.2	SW	11.2	W	14	2	16	13	6.7	63
WILLIAMSPORT	161	996.5	1015.4	26.7	13.3	20.2	-1.8	31.1	23+	8.3	26+	0	0	13.3	70	58	- 34	33	11	5	0	0	3.5	W	12.5*	W	17+	1	18	12	6.7	
RHODE ISLAND																															
BLOCK ISLAND	34	1009.0		23.9	16.1	19.9	-0.9	27.2	4	11.7	26	0	0			126	28	79	8	6	0	0						3	19	9	5.9	
PROVIDENCE	17	1007.3	1013.4	26.1	15.6	20.8	-0.6	30.0	22	8.3	26	0	0	14.4	70	40	- 61	16	9	1	0	0	4.2	WNW	11.6*	NW	24	7	17	7	5.6	56
SOUTH CAROLINA																															
CHARLESTON	12	1013.7	1015.6	32.2	22.2	27.2	0.7	36.7	4+	17.2	29	16	0	22.2	80	161	- 7	51	12	10	0	0	2.9	S	20.1Y	S	6	7	14	10	5.8	62
CHARLESTON U	3			31.1	23.9	27.4	0.2	33.3	8+	20.6	27	12	0			123	- 31	61	6		0	0	3.8		15.6	E	26					
COLUMBIA	66	1003.0	1015.5	34.4	21.1	27.6	0.7	37.8	13+	16.1	17	27	0	19.4	67	49	- 97	29	6	3	0	0	2.9	SW	14.3*	W	13	11	14	6	4.9	65
FLORENCE	45	1009.7	1015.4	33.3	20.6	26.8	0.2	37.2	7	16.1	17+	20	0	20.0	72	39	- 77	23	5	6	0	0	3.2	NE	9.4*	NE	10	9	16	6	5.2	
GNVLE SPARTANBURG	292	979.5	1015.8	31.7	20.0	25.8	-0.2	35.6	7	16.1	15	19	0	18.3	67	29	- 85	18	7	3	0	0	2.9	NE	15.2	SW	19	10	10	11	5.3	73
SOUTH DAKOTA																															
HURON	391	968.7	1015.1	30.0	15.0	22.4	-0.6	37.2	7	5.6	17	7	0	15.0	67	22	- 30	16	5	6	0	0	4.7	SSE	13.0	S	21	10	16	5	4.6	76
RAPID CITY	965	902.7	1015.0	31.7	15.0	23.2	1.0	37.2	7	9.4	30	15	0	10.6	49	34	3	13	10	6	0	0	4.1	NNW	20.1	SW	20	11	13	7	4.7	72
SIOUX FALLS	433	965.1	1016.0	28.3	15.0	21.6	-0.6	34.4	8	7.2	14	6	0	16.7	75	24	- 67	12	6	4	0	0	3.8	S	10.7*	SSE	1	10	14	7	5.3	
TENNESSEE																															
BRISTOL	459	962.8	1016.6	28.9	16.1	22.5	-1.0	31.1	18+	10.6	15	0	0	17.2	77	95	- 2	64	9	8	0	0	1.3	WNW	10.3*	SW	7	9	12	10	5.9	
CHATTANOOGA	204	989.2	1016.3	32.2	19.4	25.7	0.0	35.6	7	15.0	15	19	0	19.4	75	14	- 81	10	3	3	0	0	2.5	S	10.3	SW	19	11	11	9	4.9	74
KNOXVILLE	290	981.8	1016.9	30.0	18.3	24.2	-1.3	33.3	6	13.3	15	6	0	18.3	73	92	5	32	7	6	0	0	2.3	NE	11.2	SW	19	12	12	7	4.8	67
MEMPHIS	80	1001.5	1015.9	32.2	21.1	26.8	-0.4	37.2	28	13.9	16	18	0	20.0	69	55	- 21	25	8	6	0	0	2.6	SSW	11.2	SW	2	14	8	9	4.7	83
MEMPHIS U	83			31.7	22.8	27.4	0.1	35.6	28	16.1	15	17	0			27	- 40	18	7		0	0										
NASHVILLE	176	996.2	1015.9	31.1	18.3	24.9	-1.3	35.6	6+	12.2	15	14	0	19.4	74	194	121	136	8	8	0	0	2.8	NNW	11.6	W	13	8	16	7	5.0	72
OAK RIDGE	276	983.9		30.0	17.8	24.1	-0.7	34.4	24+	12.2	31+	8	0			81	- 37	20	7	5	0	0	2.0		11.2Y		19	11	11	9	4.9	
TEXAS																															
ABILENE	536	953.9	1013.6	36.7	22.8	29.8	1.4	38.9	28+	17.8	15	29	0	16.7	50	90	53	74	9	6	0	0	3.1	SSE	11.6	S	13+	17	8	6	4.3	80
AMARILLO	1099	890.9	1013.7	32.2	18.9	25.4	-0.1	36.1	23	15.0	20	21	0	15.0	57	100	34	44	9	12	0	0	5.4	S	13.0	SE	31	13	10	8	4.6	76
AUSTIN	182	993.1	1014.6	37.8	23.9	30.8	1.6	39.4	27+	21.7	18+	31	0	19.4	56	22	- 27	19	5	7	0	0	3.3	S	9.8	SE	11	15	15	1	3.8	84
BROWNSVILLE	5	1012.0	1014.4	34.4	24.4	29.4	0.5	35.6	21+	22.8	10+	30	0	22.8	71	4	- 67	3	2	1	0	0	5.4	SE	11.6	SE	25	18	11	2	3.5	70
CORPUS CHRISTI	13	1013.8	1015.0	34.4	24.4	29.5	0.5	37.2	20	22.8	15+	28	0	22.8	70	76	6	67	4	3	0	0	4.6	SE	13.9	SE	30	13	16	2	4.1	80
DALLAS	147	996.0	1014.2	37.2	25.6	31.3	1.9	39.4	28+	21.7	16+	31	0	19.4	51	1	- 49	1	1	4	0	0	4.6	SSE	11.6	S	10	19	8	4	3.3	81
DEL RIO	313	979.1		37.8	24.4	31.2		39.4	21	22.8	9	31	0			T		T	0	1	0	0	4.5					18	11	2	3.1	
EL PASO	1194	887.2	1012.1	32.8	20.6	26.8	0.2	36.1	12	18.3	30+	23	0	14.4	51	26	- 4	10	9	14	0	0	3.2	SSE	21.0	W	18	11	12	8	5.0	71
FORT WORTH	166	993.7	1014.1	37.2	23.9	30.7	1.1	40.6	27	20.0	15	30	0	18.9	51	69	27	49	3	4	0	0	4.1	SSE	19.2*	SW	31	18	7	6	3.6	
GALVESTON U	2			31.1	26.1	28.7	0.2	33.9	14	23.9	16	3	0			36	- 76	16	7		0	0	4.2		10.7	SE	21					85
GALVESTON	2	1013.6	1016.2	31.7	26.1	28.9	0.3	33.3	27+	23.3	16+	19	0	22.8	69	37	- 78	12	9	7	0	0	3.6	S				12	14	5	4.5	
HOUSTON U	12			35.0	25.6	30.1	1.1	37.8	13	21.7	16	31	0			46	- 44	23	5		0	0										
HOUSTON	15	1012.7	1015.4	35.0	23.3	29.1	0.3	37.2	13	19.4	18	30	0	22.2	73	47	- 61	20	4	5	0	0	3.2	SSE	24.1*	NNW	20	11	17	3	4.8	88
LAREDO	152	997.8	1013.1	38.9	25.0	31.9	1.1	41.1	21	24.4	29+	31	0	19.4	55	2	- 41	2	2	2	0	0	5.8	ESE	17.9*	E	6	21	9	1	2.8	
LUBBOCK	988	904.9	1014.1	32.8	19.4	26.1	0.1	36.1	28	15.0	15	21	0	16.7	59	68	25	29	8	7	0	0	4.2	SSE	13.0*	NNW	29+	14	9	8	4.8	
MIDLAND	870	915.9	1012.5	35.0	20.6	27.9	0.0	38.3	22	18.3	15	28	0	16.1	53	31	- 6	8	9	9	0	0	3.9	S	13.0*	ESE	17	10	14	7	4.9	
PORT ARTHUR	5	1014.0	1015.5	35.0	23.3	29.1	1.4	37.8	27	17.8	17+	31	0	23.3	76	51	- 89	14	9	9	0	0	2.7	SSW	13.0	SW	22+	11	16	4	4.5	77
SAN ANGELO	580	947.4	1012.9	36.1	22.8	29.6	0.1	38.9	8+	20.0	14	29	0	16.7	51	39	7	28	8	6	0	0	2.8	SSE	10.7*	SE	17	16	9	6	4.2	
SAN ANTONIO	241	989.9	1014.4	36.1	23.3	29.8	1.1	37.8	21+	21.7	15+	30	0	19.4	59	16	- 44	16	1	2	0	0	3.5	SSE	13.4	SE	8	18	12	1	3.3	86
VICTORIA	32	1010.4		35.6	23.9	29.6	1.0	38.3	20	20.6	18	30	0			77	- 3	37	6	5	0	0	3.2		30.0Y		25	6	22	3	4.9	
WACO	152	993.9	1014.6	37.2	24.4	30.8	1.1	39.4	27	22.2	14	31	0	18.9	53	33	- 10	25	6	7	0	0	5.1	S	14.3*	NNW	13	19	8	4	3.3	
WICHITA FALLS	303	977.6	1013.6	36.7	22.2	29.6	0.0	41.1	24	17.2	21	27	0	16.7	50	45	- 1	24	7	7	0	0	4.3	S	11.2*	N	18	19	5	7	3.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

AUGUST 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
UTAH																																
MILFORD	1533	846.1		32.2	13.9	23.1	0.7	37.2	14+	9.4	31+	18	0			15	- 4	5	12	17	0	0						9	13	9	5.7	
SALT LAKE CITY	1286	868.2	1012.8	33.3	17.8	25.5	1.9	37.2	13	11.7	29	23	0	8.9	38	14	- 8	12	4	13	0	0	4.9	SSE	16.1	S	22	7	15	9	5.5	79
WENDOVER	1291	870.4		31.7	18.9	25.3	0.2	36.7	14	12.8	24	18	0			7	- 3	5	2	5	0	0						19	9	3	3.0	
VERMONT																																
BURLINGTON	101	998.2	1012.7	22.8	11.1	16.9	-3.2	28.9	3	4.4	19	0	0	12.2	76	130	44	21	18	10	0	0	3.4	S	11.6	NW	14	1	14	16	7.5	56
VIRGINIA																																
LYNCHBURG	289	990.7		30.0	17.2	23.4	-0.4	36.1	3	12.2	15	8	0			24	- 88	11	7	5	0	0	2.5		9.4	SW	13	7	12	12	6.3	52
NORFOLK	8	1014.3	1015.7	30.0	20.0	24.8	-0.4	35.0	4+	13.9	28+	8	0	18.9	72	61	- 91	28	9	6	0	0	4.0	S	22.8	W	13	6	16	9	5.6	67
RICHMOND	49	1009.4	1015.4	31.1	17.2	24.3	-0.4	35.6	3	10.6	15	15	0	17.2	72	95	- 45	56	7	5	0	0	3.3	SSW	10.3	NE	24	7	11	13	6.2	58
ROANOKE	358	974.6	1016.2	29.4	17.2	23.3	-0.8	37.8	3	10.0	15	7	0	15.0	63	46	- 72	27	5	3	0	0	3.5	WSW	11.2*	N	14	6	13	12	6.0	
WASHINGTON																																
OLYMPIA	58	1011.2	1018.4	24.4	10.6	17.4	0.0	31.1	8	4.4	2	0	0	12.2	77	20	- 3	8	7	3	0	0	2.3	SSW	10.7*	S	24	5	12	14	6.8	
SEATTLE TACOMA	122	1003.8	1017.8	23.3	12.8	18.1	0.8	29.4	8	10.0	27	0	0	12.2	74	19	- 6	6	7	3	0	0	3.3	SW	13.0*	SW	11	6	9	16	6.4	
SEATTLE U	4			23.3	13.9	18.5	0.2	29.4	8	12.8	27+	0	0			19	1	7	6	0	0	0			13.4	SW	11					67
SPOKANE	718	947.0	1014.9	28.9	12.8	20.6	0.9	35.0	6	7.2	25	9	0	6.1	43	13	2	5	5	6	0	0	3.3	NE	13.9	SW	23	18	8	5	3.3	84
STAMPEDE PASS R	1206	882.3		18.3	8.9	13.7	0.6	28.9	8	5.6	25+	0	0			40	- 12	13	9	4	0	0						12	5	14	5.8	
TATOOSH ISLAND	31	1015.7	1018.6	15.6	11.7	13.6	0.3	18.3	24	10.0	25+	0	0	12.2	93	12	- 38	9	8	1	0	0	4.3	S	14.8	S	12	1	7	23	8.2	35
WALLA WALLA U	289			30.6	16.7	23.7	0.4	37.8	11	12.2	25	15	0			17	9	0	3	5	0	0										
YAKIMA	323	976.1	1014.5	30.6	11.1	20.7	0.3	35.6	8+	5.0	26	13	0	8.3	50	3	- 2	3	2	2	0	0	3.2	W	11.2*	SW	11	17	8	6	3.6	
WEST INDIES																																
SAN JUAN P.R.	2	1012.0	1014.9	31.7	23.9	27.7	0.5	33.3	25+	21.7	2	8	0	23.3	79	87	- 94	17	21	5	0	0	3.7	ENE	10.3	E	26+	3	16	12	6.4	66
SWAN ISLAND	9	1011.3		31.1	25.6	28.3	-0.1	32.2	31+	22.8	8+	3	0			57	36	28	12	7	0	0						6	16	9	5.8	
WEST VIRGINIA																																
BECKLEY	763	930.2	1017.0	24.4	13.3	19.1		30.0	3	6.1	15	0	0	15.0	80	83		27	12	8	0	0	3.1	NNW	10.7*	SW	19	3	10	18	7.5	
CHARLESTON	286	981.2	1016.4	26.7	15.6	21.2	-1.7	32.8	3	8.9	16	1	0	17.2	81	72	- 28	31	7	3	0	0	2.0	SW	9.4*	WNW	19	0	20	11	7.3	
ELKINS	600	948.4	1017.2	25.0	12.2	18.4		28.3	3	7.2	16	0	0	14.4	83	85		25	12	5	0	0	2.4	NW	17.9*	NW	4	0	16	15	7.7	
HUNTINGTON	252	986.8	1016.8	27.2	15.6	21.3		32.2	3	8.9	15	1	0	17.2	79	78	- 5	23	10	5	0	0	2.0	SSW	10.3*	WSW	13	1	16	14	7.3	
PARKERSBURG U	187			27.2	15.6	21.6	-2.0	32.2	3	9.4	16+	1	0			62	- 34	17	8	4	0	0	2.4		13.4	NW	13					48
WISCONSIN																																
GREEN BAY	208	993.5	1016.0	25.0	12.2	18.7	-1.3	30.0	21+	5.0	18	0	0	14.4	79	53	- 17	22	6	2	0	0	2.9	SW	13.4	N	13	9	12	10	5.5	68
LA CROSSE	199	991.9	1016.5	26.1	15.0	20.5	-1.5	31.1	7	7.8	18	0	0	15.6	76	86	- 6	34	10	8	0	0	3.5	S	28.2*	NNW	2	8	12	11	5.8	
MADISON	262	981.5	1016.4	26.1	13.3	19.8	-1.1	31.1	8+	5.6	18	0	0	14.4	72	82	- 4	33	9	6	0	0	3.0	SW	14.8	S	16	10	11	10	5.6	62
MILWAUKEE	205	991.9	1016.6	24.4	15.0	19.5	-0.4	30.0	2	6.7	18	0	0	15.0	76	63	- 15	19	7	4	0	0	4.2	SSW	14.3	W	3	11	11	9	5.2	71
WYOMING																																
CASPER	1621	840.5	1014.4	29.4	13.3	21.3	0.2	32.8	15+	8.9	30	5	0	6.7	44	10	- 8	3	8	10	0	0	4.3	SW	13.4*	SW	23+	10	11	10	5.5	
CHEYENNE	1867	818.1	1016.4	27.2	13.3	20.2	0.6	33.9	1	8.3	29	1	0	10.6	62	58	21	13	12	13	0	0	4.9	WNW	16.1	N	1	5	9	17	7.0	63
LANDER	1696	838.1	1014.5	29.4	12.8	21.0	0.6	33.9	15	7.8	23	5	0	7.2	46	14	2	6	9	9	0	0	3.2	WSW	15.2	NW	17	9	11	11	5.5	60
SHERIDAN	1202	886.1	1015.0	30.6	12.8	21.6	0.7	35.6	7	8.3	30+	12	0	7.8	45	11	- 12	5	3	5	0	0	2.8	WNW	16.6	SW	20	10	12	9	5.3	67

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.)

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	0	0	0
Huntsville	0	0	0
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	242	434	536
Annette	108	282	480
Barrow	877	1741	1643
Barter Island	771	1536	1510
Bethel	472	802	713
Cold Bay	436	875	899
Cordova	330	675	757
Fairbanks	312	481	503
Juneau	244	532	639
King Salmon	333	643	635
Kotzebue	511	975	827
McGrath	393	612	546
Nome	577	1097	977
St. Paul Is.	573	1173	1144
Shemya	543	1112	1052
Yakutat	308	624	685
ARIZONA			
Flagstaff	49	49	96
Phoenix (U)	0	0	
Phoenix	0	0	0
Prescott	0	0	0
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	0	0	0
Little Rock	0	0	0
Texarkana	0	0	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	1	1	0
Blue Canyon	57	141	65
Burbank	0	0	0
Eureka (U)	239	473	527
Fresno	0	0	0
Long Beach	0	0	0
Los Angeles (U)	0	0	0
Los Angeles	0	0	50
Mt. Shasta (R)	43	120	59
Oakland	53	111	103
Point Arguello (R)	154	352	388
Red Bluff	0	0	0
Sacramento (U)	0	0	0
Sacramento	0	0	0
Sandberg (R)	18	25	0
San Diego	0	0	0
San Francisco (U)	160	326	366
San Francisco	55	151	159
San Jose (U)	5	20	
Santa Catalina	6	16	
Santa Maria	70	205	192
Stockton	0	0	
COLORADO			
Alamosa	53	64	164
Colorado Springs	4	4	47
Denver	7	13	9
Grand Junction	2	2	0
Pueblo	0	0	0
CONNECTICUT			
Bridgeport	7	11	0
Hartford	11	22	12
Middletown	42	64	
New Haven	6	8	12
DELAWARE			
Wilmington	3	3	0
DIST. OF COLUMBIA			
Washington (U)	0	0	
Washington	0	0	0
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	0	0	0
Atlanta	0	0	0
Augusta	0	0	0
Columbus	0	0	0
Macon	0	0	0
Rome	0	0	0
Savannah	0	0	0
Thomasville (U)	0	0	0
IDAHO			
Boise	2	4	0
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	34	59	50
Idaho Falls 42NW (R)	32	46	56
Lewiston	2	3	0
Pocatello	3	8	6
ILLINOIS			
Cairo (U)	0	0	0
Chicago (Midway)	6	8	0
Chicago (O'Hare)	24	40	
Moline	16	16	9
Peoria	22	24	6
Rockford	17	19	15
Springfield	18	20	0
INDIANA			
Evansville	0	0	0
Ft. Wayne	22	22	9
Indianapolis	20	20	0
South Bend	38	47	6
IOWA			
Burlington	17	21	0
Des Moines	18	18	6
Dubuque	23	27	43
Sioux City	13	13	12
Waterloo	25	32	31
KANSAS			
Concordia	4	4	0
Dodge City	0	0	0
Goodland	0	0	6
Topeka	2	2	0
Wichita	0	0	0
KENTUCKY			
Lexington	1	1	0
Louisville	1	1	0
LOUISIANA			
Alexandria	0	0	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (Audubon Park)	0	0	
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	189	231	193
Greenville (U)	189	246	
Portland	94	125	65
MARYLAND			
Baltimore (U)	0	0	0
Baltimore	2	2	0
Frederick	6	10	0
MASSACHUSETTS			
Blue Hill Obs. (R)	18	30	22
Boston	3	4	9
Nantucket	6	16	44
Pittsfield	100	153	84
Worcester	46	74	40
MICHIGAN			
Alpena	155	203	143
Detroit (City AP)	9	11	0
Detroit (M. Wayne Co.)	34	45	9
Detroit (Willow Run)	27	33	0
Escanaba (U)	100	136	146
Flint	56	82	31
Grand Rapids	36	44	37
Lansing	51	69	28
Marquette (U)	112	163	140
Muskegon	40	58	62
S. Ste. Marie	132	211	227
MINNESOTA			
Duluth	107	157	164
Internat. Falls	95	128	183
Minneapolis	32	33	47
Rochester	54	60	59
St. Cloud	33	36	75
MISSISSIPPI			
Jackson	0	0	0
Meridian	0	0	0
Vicksburg (U)	0	0	0
MISSOURI			
Columbia	7	7	0
Kansas City	1	1	0
St. Joseph	5	5	6
St. Louis (RFC)	11	11	0
St. Louis	9	9	0
Springfield	0	0	0
MONTANA			
Billings	9	19	37
Butte	103	212	
Glasgow	13	17	78
Great Falls	23	46	69
Havre	19	35	81
Helena	32	64	90
Kalispell	73	179	149
Miles City	5	5	12
Missoula	51	127	108
NEBRASKA			
Grand Island	12	12	0
Lincoln (U)	6	6	6
Norfolk	10	10	9
North Platte	1	1	6
Omaha	5	5	6
Omaha N. Omaha AP	11	11	25
Scottsbluff	0	0	0
Valentine	2	2	21
NEVADA			
Elko	57	83	43
Ely	35	55	71
Las Vegas	0	0	0
Reno	62	100	114
Tonopah	14	16	
Winnemucca	23	29	34
NEW HAMPSHIRE			
Concord	57	77	68
Mt. Washington Obs. (R)	659	1137	
NEW JERSEY			
Atlantic City	1	1	0
Atlantic City (U)	7	8	
Newark	0	0	0
Trenton (U)	1	1	0
NEW MEXICO			
Albuquerque	0	0	0
Clayton	1	1	0
Raton	10	10	37
Roswell	0	0	0
Silver City	0	0	
NEW YORK			
Albany	29	47	19
Binghamton	94	147	65
Buffalo	72	92	56
New York (U)	0	0	0
New York (LaGuardia)	0	0	0
Rochester	52	76	40
Schenectady	24	38	
Syracuse	43	57	34
NORTH CAROLINA			
Asheville (U)	0	4	0
Cape Hatteras (R)	0	0	0
Charlotte	0	0	0
Greensboro	2	2	0
Raleigh	0	0	0
Wilmington	0	0	0
Winston-Salem	2	2	0
NORTH DAKOTA			
Bismarck	26	29	50
Devils Lake (U)	33	42	93
Fargo	14	19	65
Grand Forks FAA	27	37	
Pembina	28	39	
Williston	24	24	
OHIO			
Akron	30	52	22
Cincinnati (U)	0	0	
Cincinnati	6	7	0
Cincinnati Obs.	1	1	0
Cleveland	32	62	34
Columbus	14	20	6
Columbus (U)	5	6	
Dayton	23	24	6
Mansfield	39	56	31
Sandusky (U)	8	11	6
Toledo	33	42	16
Youngstown	55	84	19
OKLAHOMA			
Oklahoma City	0	0	0
Tulsa	0	0	0
OREGON			
Astoria	116	256	304
Burns (U)	49	115	49
Eugene	25	96	68
Meacham	124	320	208
Medford	7	27	0
Pendleton	9	17	0
Portland (U)	13	41	28
Portland	24	96	53
Roseburg	17	65	38
Salem	35	137	56
Sexton Summit (R)	112	366	168
PENNSYLVANIA			
Allentown	9	12	0
Erie	28	48	25
Harrisburg	7	8	0
Philadelphia (U)	0	0	
Philadelphia	7	7	0
Pittsburgh (U)	4	11	0
Pittsburgh	22	43	9
Reading (U)	1	1	0
Scranton	20	31	28
Williamsport	19	27	9
RHODE ISLAND			
Block Island	9	16	16
Providence	8	14	16
SOUTH CAROLINA			
Charleston (U)	0	0	0
Charleston	0	0	0
Columbia	0	0	0
Florence	0	0	0
Greenville-Spartanburg	0	0	
SOUTH DAKOTA			
Huron	17	17	21
Pierre	4	4	
Rapid City	4	8	34
Sioux Falls	24	24	44
TENNESSEE			
Bristol	0	5	0
Chattanooga	0	0	0
Knoxville	0	0	0
Memphis (U)	0	0	0
Memphis	0	0	0
Nashville	0	0	0
Oak Ridge	0	1	0
TEXAS			
Abilene	0	0	0
Amarillo	0	0	0
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	0	0	0
Del Rio (U)	0	0	
El Paso	0	0	0
Fort Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	0	0	0
Midland	0	0	0
Port Arthur	0	0	0
San Angelo	0	0	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	0	0	0
UTAH			
Milford	4	4	0
Salt Lake City	1	1	0
Wendover	0	0	0
VERMONT			
Burlington	118	148	59
VIRGINIA			
Lynchburg	2	2	0
Norfolk	0	0	0
Richmond	0	0	0
Roanoke	1	1	0
WASHINGTON			
Olympia	55	147	139
Seattle (U)	19	68	97
Seattle	5	41	74
Seattle-Tacoma	37	115	155
Spokane	28	63	53
Stampede Pass (R)	265	695	564
Tatoosh Island (R)	257	498	574
Walla Walla	0	0	
Walla Walla (U)	0	0	0
Yakima	34	61	12
WEST VIRGINIA			
Charleston	6	16	0
Huntington	9	18	0
Parkersburg (U)	6	11	0
WISCONSIN			
Green Bay	60	72	90
La Crosse	29	30	31
Madison	47	49	44
Milwaukee	38	58	52
WYOMING			
Casper	8	11	37
Cheyenne	10	13	72
Lander	10	14	30
Sheridan	7	15	68

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama														0	2	5	0												
Alaska										1	?	?	1																
Arizona						0	0	0	4	1	0	6	5	2	0	2	0									0	0	6	5
Arkansas						0	0	0	4	1	0	4	5	1	0	3	0												
California														0	0	0	3									0	0	5	5
Colorado	1	1	0	0	0	0	0	0	4	0	0	3	3	0	2	3	0									0	0	F 5	F 4
Connecticut						0	0	0	4																				
Delaware						0	0	1	0	0	0	3	0	1	0	3	0									0	0	5	0
Florida	6	6	0	0	5					0	2	4	0	2	0	?	0												
Georgia										0	0	4	0																
Hawaii	W 2	W 2																											
Idaho									6			4			2	4												4	
Illinois						0	0	2	4	0	0	5	2	0	0	3	0												
Indiana						0	0	0	4	0	0	4	0	0	1	4	0												
Iowa										0	0	4	4	0	0	5	0									0	1	5	4
Kansas	2	2																											
Kentucky													4	1	2	4													
Louisiana														0	3	2	0												
Maine						0	0	0	3	0	0	4	0	0	0	4	0												
Maryland						0	0	?	0	2	0	4	0	1	1	4	0									5	0	5	0
Massachusetts						0	0	0	5	1	3	4	0	0	1	5	0												
Michigan						0	0	4	C	0	0	5	C	0	2	5	0												
Minnesota	1	1	0	1	4	0	0	4	6	0	1	5	0	1	0	0	0									0	0	4	0
Mississippi										0	0	4	0	1	1	3	0									0	0	4	0
Missouri	1	1	0	0	4									0	0	4	0												
Montana						0	0	5	6	0	1	4	0	0	3	5	4												
Nebraska	1	1	0	0	4	0	0	0	6					0	2	5	0												
Nevada *																													
New Hampshire	1	1	0	0	5					0	0	3	0	0	0	3	0												
New Jersey *																													
New Mexico	2	2	0	0	3									4	4	0	0									0	20	6	0
New York										1	2	5		1		4												7	
North Carolina	W 1	W 1	0	0	0	0	0	4	5	0	0	5	3	0	5	5	0												
North Dakota						0	0	4	6	0	5	4	0																
Ohio *																													
Oklahoma	1	1	0	0	4					0	3	5	0	1	2	4	3									0	0	3	0
Oregon						0	0	3	4	0	0	3	3	0	0	3	3									0	0	R 4	R 3
Pacific Area *																													
Pennsylvania	1	1	2	70	7	0	0	0	4	0	0	5	0	2	0	5	0												
Puerto Rico																										0	0	6	C
Rhode Island *																													
South Carolina	3	2	0	0	4					0	0	4	0	1	2	4	0												
South Dakota	1	1	0	0	4	0	0	5	5	0	0	4	2																
Tennessee						0	0	0	3	0	0	5	3	0	0	5	0									0	0	4	2
Texas	4	3	0	0	4									0	3	0	0									1	0	4	0
Utah						0	0	5	4					1	1	4	4									0	0	4	4
Vermont *																													
U.S. Virgin Is. *																													
Virginia																										1	0	6	0
Washington									4						3	4	4												
West Virginia																										0	0	H 5	?
Wisconsin	1	1	0	13	5	0	0	5	5	0	0	4	4	0	0	4	0												
Wyoming														1	1	2	0												

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
W Waterspout.
H Heavy showers and wind.
R Rain
F Flooding

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

AUGUST 1963

Heavy floods occurred on coastal streams in southern Puerto Rico from heavy rains on the 27th and 28th. Preliminary estimates placed the damages between $4 and $7 million. More than 500 families were evacuated. The Tallaboa River cut a new bed near Penuelas and destroyed 150 houses and several bridges. At Santa Isabel, the Inabon River rose 3 feet over the bridge. The Tibes bridge at Ponce broke in two and was carried away; many residential sections of the city were inundated; and the Playa de Ponce was under 2 feet of water. At Juana Diaz, a bridge over the Parcelas was destroyed and the city water mains broken. Canefields and pastures between Guayanilla and Aguirre were inundated.

Flash floods were reported over widely scattered areas of continental United States during August. The most damaging one was reported in the Buffalo, N. Y., area.

SAINT LAWRENCE DRAINAGE

Lake Erie. --This was the wettest August of record at Buffalo, N. Y., with a total of 8.04 inches. Of this total, 3.88 inches occurred on the 7th and 2.23 inches on the 13th. The 24-hour rainfall reported on the 7th was the second heaviest 24-hour rainfall recorded in Metropolitan Buffalo. New heavy rain records on the 7th included 1.75 inches in 1 hour and 2.25 inches in 2 hours. The rains of the 7th caused the worst flood disaster in the city of Buffalo and its suburbs. The overall damage estimate for all interests was $35 million. Public and private auto transportation was halted for several hours by flooded underpasses, flooded street intersections, flooded low points in streets, and in several locations blocked streets because of overflows from small creeks and open sewers. A number of cars were trapped and damaged by rising waters. Water damage to contents of cellars and buildings was heavy. The heavy rains on the 13th caused local street and cellar floods, mostly in South Buffalo with damage on a much smaller scale.

ATLANTIC SLOPE DRAINAGE

Flash flooding occurred in the lower Potomac Basin along Four Mile Run Creek in the Alexandria-Arlington, Va., area during the night of the 20th. Rainfall amounts in the Metropolitan Washington, D. C., area ranged up to 5 to 6 inches. Elsewhere in the Potomac Basin, storm totals on the 20th and 21st averaged generally less than 2 inches. Damages from the flooding were estimated at around $1 million. There was one loss of life due to drowning. A number of persons were treated for minor injuries incurred during rescue operations. Water levels reached 4 to 5 feet above street level just south of Four Mile Run on Mount Vernon Avenue in Alexandria, Va. Some local flooding was reported along the Anacostia River in Washington, D. C., but damage was minor. In the Rock Creek Basin water levels reached a crest of 6.38 feet (flood stage 7 ft.,) at Sherrill Drive in Washington, D. C.

MISSISSIPPI SYSTEM

Missouri Basin. --Light to moderate flooding occurred in the upper Republican Basin on Sappa Creek in Nebraska and on Prairie Dog Creek at Woodruff, Kans., on the 12th and 13th. Light to moderate flooding occurred also on the North Fork of the Solomon River at Downs, Kans., on the 13th and 14th. The overflows were due to rainfall ranging from 4 to 6 inches on the watersheds immediately upstream during the night of the 11th and 12th. There was some flooding on Deer Creek in Phillips County, Kans. Damages were not heavy.

Ohio Basin. --Heavy thundershowers during the early morning hours of the 29th resulted in near bankful stages on the Duck River at Shelbyville, Tenn. The rainfall ranged from 5 to 6 inches in the immediate vicinity of Shelbyville to less than one-half inch upstream.

Red Basin. --The flooding on the Sulphur River at Haganssport, Tex., from the 16th to the 18th was due to locally heavy rains over the upper basin. Little or no damage resulted.

Lower Mississippi. --River stages were generally low during August. The Mississippi River at Vicksburg, Miss., reached its lowest stage for August since 1954. Average stage was also the lowest since August 1954. Rainfall in Vicksburg exceeded normal by 92 percent, due to the locally heavy rain on the 14th., but the area generally was dry. The rainfall on the 14th totaled 4.07 inches in 2 hours which was within 0.10 inch of the record 2 hour rainfall of 4.17 inches at Vicksburg.

WEST GULF OF MEXICO DRAINAGE

Flash flooding occurred in the Albuquerque, New Mex., area on August 10 due to heavy rains of up to 3.5 inches. Much of the water from this runoff was diverted into irrigation canals and drainage systems along the river rather than into the main river channel. Damage from the flash flooding cost public and semipublic agencies in excess of $600,000.

The Rio Grande at Albuquerque, N. Mex., had a long period of no flow which may turn out to be a record when all available records have been surveyed. It is also likely that the extended period from late July through September may show record low flow.

GREAT BASIN

Heavy thundershowers caused some flash flooding in the Great Basin during August. A heavy storm hit Dry Canyon and the First Canyon outside of Parowan, Utah, on the 2d, causing about $40,000 damage to bridges, roads, and camp grounds.

The worst flash flood in the history of Woodruff, Utah, occurred on the 9th. Extensive damage resulted to West Woodruff, Highway No. 39, and farmlands in the area.

A flash flood occurred near Kanosh, Utah, on the 19th, closing U. S. Highway No. 91 for several hours. It was the third flash flood in the area in the last few weeks.

FLOOD STAGE DATA

(All dates in August unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
	Ft.			*Ft.*	
MISSISSIPPI SYSTEM					
Missouri Basin					
Sappa Creek: Beaver City, Nebr.	16	12	12	17.0	12
Stamford, Nebr.	14	13	13	15.75	13
Prairie Dog Creek: Woodruff, Kans.	18	12	13	20.7	13
North Fork Solomon: Downs, Kans.	18	13	14	21.7	14
Red Basin					
Sulphur: Hagansport, Tex.	38	16	18	40.7	17

* Provisional

RAWINSONDE DATA

Average monthly values

AUGUST 1963

ALBANY, N. Y. 1004 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	14.7	91	245	2.7
1000	31	118			242	2.9
950	31	554	15.0	79	286	10.1
900	31	1,012	12.8	76	298	12.4
850	31	1,490	9.9	75	296	14.8
800	31	1,993	7.3	69	292	15.3
750	31	2,519	4.6	58	291	16.9
700	31	3,082	2.2	48	287	19.4
650	31	3,674	-.6	43	284	22.3
600	31	4,314	-4.3	42	284	25.8
550	31	4,988	-8.3	36	284	27.6
500	31	5,729	-12.9		283	30.7
450	31	6,518	-18.5		281	33.8
400	31	7,393	-25.1		280	37.3
350	31	8,350	-32.1		281	41.8
300	31	9,421	-40.0		281	46.2
250	31	10,644	-47.8		280	53.2
200	31	12,096	-52.6		281	55.8
175	31	12,957	-53.2		279	49.9
150	31	13,948	-54.4		275	43.3
125	31	15,112	-56.1		275	35.9
100	31	16,529	-56.2		276	24.7
80	30	17,948	-54.9		276	14.6
70	30	18,803	-53.5		265	8.5
60	30	19,798	-52.3		244	3.7
50	30	20,979	-51.4		150	3.1
40	30	22,433	-49.9		104	6.0
30	27	24,320	-48.0		96	9.3
25	26	25,524	-46.5		90	11.3
20	22	27,007	-44.7		92	12.4
15	15	28,928	-41.5			
10	5	31,683	-38.2			
7						
5						
4						

ALBUQUERQUE, N. MEX. 842 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	19.0	69	92	3.1
1000	30	109				
950	30	558				
900	30	1,030				
850	30	1,533				
800	30	2,056	17.4	63	132	3.7
750	30	2,601	14.2	63	171	1.6
700	30	3,185	10.4	66	201	3.5
650	30	3,794	6.3	67	207	3.5
600	30	4,451	1.6	70	177	3.5
550	30	5,136	-3.0	71	178	4.3
500	30	5,897	-7.6	68	192	6.0
450	30	6,703	-12.3	55	196	5.8
400	30	7,602	-17.8	45	208	6.0
350	30	8,587	-24.8	45	208	7.6
300	30	9,690	-33.1	39	212	9.7
250	30	10,946	-43.0		205	9.1
200	30	12,412	-54.5		214	11.8
175	30	13,256	-60.1		215	11.8
150	30	14,206	-65.0		221	9.1
125	30	15,306	-68.9		248	3.7
100	30	16,637	-68.8		36	.6
80	30	17,985	-64.6		90	5.6
70	30	18,810	-61.8		80	9.1
60	29	19,767	-59.1		80	12.0
50	28	20,915	-56.2		87	15.2
40	28	22,343	-53.4		91	18.3
30	25	24,203	-51.0		90	22.7
25	25	25,395	-48.8		90	22.9
20	23	26,864	-46.5		90	28.2
15	20	28,782	-43.1		91	31.7
10	9	31,496	-39.9			
7						
5						
4						

AMARILLO, TEXAS 894 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	19.4	76	219	4.1
1000	31	116				
950	31	566				
900	31	1,041				
850	31	1,534	21.4	56	226	13.0
800	31	2,057	18.3	54	234	11.7
750	31	2,604	14.4	56	246	7.4
700	31	3,187	10.3	59	249	3.5
650	31	3,794	5.8	61	231	2.1
600	31	4,450	1.3	57	186	4.1
550	31	5,140	-2.6	54	181	5.6
500	31	5,897	-6.6	47	186	5.2
450	31	6,707	-11.7	43	209	4.5
400	31	7,607	-17.5	37	231	4.1
350	31	8,593	-24.5		261	2.3
300	31	9,697	-32.9		300	5.6
250	31	10,953	-42.9		303	8.2
200	31	12,421	-54.3		319	8.9
175	30	13,265	-60.6		311	8.0
150	30	14,213	-65.6		296	6.0
125	30	15,312	-69.0		311	7.6
100	30	16,645	-68.3		356	4.7
80	30	17,999	-63.8		65	7.8
70	30	18,833	-61.4		80	9.5
60	29	19,786	-58.5		81	10.9
50	29	20,939	-56.0		85	14.0
40	29	22,367	-53.4		93	17.5
30	29	24,232	-50.4		90	21.2
25	28	25,420	-48.6		90	23.1
20	26	26,893	-46.4		86	24.5
15	16	28,816	-42.8		87	26.0
10						
7						
5						
4						

ANCHORAGE, ALASKA 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	11.7	82	161	3.3
1000	31	137	12.9	76	170	6.6
950	31	568	11.2	66	184	11.3
900	31	1,018	8.6	66	184	11.7
850	31	1,489	5.9	70	189	12.8
800	31	1,983	3.3	67	198	12.8
750	31	2,504	.8	61	207	14.6
700	31	3,057	-1.7	59	216	15.3
650	31	3,642	-4.6	53	222	16.1
600	31	4,270	-8.3	49	225	20.0
550	31	4,937	-12.1	49	228	20.8
500	31	5,665	-16.5	51	231	22.7
450	31	6,443	-21.8	48	230	25.1
400	31	7,308	-27.4	46	234	26.0
350	31	8,255	-34.4	46	237	28.6
300	31	9,315	-42.5		239	26.2
250	31	10,524	-50.3		241	30.1
200	30	11,958	-55.0		241	30.5
175	29	12,820	-53.3		237	23.9
150	28	13,816	-52.9		244	20.2
125	28	14,992	-52.5		246	17.3
100	27	16,436	-51.6		242	12.8
80	27	17,887	-50.5		236	10.5
70	26	18,754	-50.2		236	8.2
60	26	19,765	-49.8		237	5.4
50	26	20,959	-49.4		213	3.3
40	25	22,421	-49.0		204	1.0
30	22	24,321	-47.7		105	1.7
25	22	25,528	-46.6		93	2.9
20	22	27,013	-45.2		99	3.1
15	19	28,947	-42.8		97	4.1
10	10	31,723	-38.5			
7						
5						
4						

ANNETTE, ALASKA * 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	13.4	88	204	.8
1000	31	158	13.8	82	313	.4
950	31	591	13.3	76	25	1.4
900	31	1,045	11.4	71	170	.8
850	31	1,521	9.0	65	193	1.6
800	31	2,023	7.0	60	238	2.9
750	31	2,553	4.1	53	268	2.9
700	31	3,110	1.1	50	260	3.1
650	31	3,699	-2.2	44	292	2.5
600	31	4,336	-5.5	38	315	3.1
550	31	5,005	-9.8	38	320	2.5
500	31	5,744	-14.6	33	2	3.1
450	31	6,528	-20.1	30	29	5.1
400	30	7,398	-26.3	32	31	7.6
350	30	8,349	-33.7	31	37	8.7
300	30	9,410	-42.3		44	10.1
250	30	10,617	-51.6		52	10.3
200	30	12,044	-56.2		29	5.8
175	29	12,895	-54.5		12	5.2
150	29	13,885	-53.5		257	3.1
125	29	15,057	-53.3		251	4.5
100	29	16,492	-53.7		244	5.2
80	29	17,929	-53.0		232	3.5
70	29	18,790	-52.6		245	4.3
60	29	19,787	-52.1		233	1.4
50	29	20,969	-51.6		92	2.1
40	28	22,419	-50.9		81	3.3
30	27	24,299	-49.2		77	5.1
25	27	25,499	-47.7		72	5.4
20	27	26,978	-46.0		66	7.4
15	25	28,907	-43.1		80	9.7
10	22	31,677	-38.0		84	10.3
7	20	34,175	-34.0		84	13.4
5	13	36,527	-29.9		90	15.2
4	7	38,079	-27.9			

ATHENS, GA. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	20.5	93	339	2.5
1000	31	140				
950	31	588	22.6	72	318	1.7
900	31	1,056	20.0	70	267	4.7
850	31	1,548	16.8	70	270	6.6
800	31	2,063	13.7	64	277	6.8
750	31	2,603	10.9	54	286	7.4
700	31	3,178	8.2	43	284	7.0
650	31	3,785	4.9	37	287	7.8
600	31	4,436	1.2	34	285	8.9
550	31	5,121	-2.6		281	10.1
500	31	5,882	-6.7		286	11.3
450	31	6,692	-11.9		294	11.8
400	31	7,589	-18.0		302	12.2
350	31	8,573	-25.2		298	14.8
300	31	9,673	-33.5		303	16.9
250	31	10,926	-43.6		303	17.3
200	31	12,387	-54.8		301	22.0
175	31	13,230	-60.3		305	21.8
150	31	14,180	-65.0		310	19.2
125	31	15,283	-67.4		313	11.5
100	31	16,627	-66.9		322	6.0
80	30	17,985	-62.3		41	5.6
70	30	18,824	-60.1		62	8.0
60	30	19,781	-57.5		81	13.2
50	30	20,938	-55.3		91	16.9
40	30	22,371	-52.8		91	19.6
30	29	24,235	-50.4		90	22.1
25	29	25,429	-48.2		92	25.1
20	26	26,899	-46.3		88	28.4
15	20	28,825	-42.9		86	31.7
10						
7						
5						
4						

BARROW, ALASKA * 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	1.7	94	134	2.5
1000	31	75			140	3.9
950	31	489	1.9	88	218	6.2
900	31	925	.2	81	242	9.7
850	31	1,383	-1.3	75	253	11.5
800	31	1,865	-3.6	76	251	14.6
750	31	2,375	-5.9	70	246	16.5
700	31	2,912	-8.1	66	244	17.3
650	31	3,485	-11.0	61	246	18.8
600	31	4,098	-14.4	56	248	21.4
550	31	4,752	-18.3	56	250	22.7
500	31	5,460	-22.8	54	253	25.4
450	31	6,222	-28.1	53	255	29.1
400	31	7,061	-34.4	53	255	33.4
350	31	7,981	-41.2		258	37.3
300	31	9,013	-47.3		257	37.9
250	31	10,213	-48.4		250	42.5
200	31	11,690	-46.1		249	30.9
175	31	12,580	-45.3		244	27.2
150	31	13,608	-45.6		245	25.1
125	31	14,823	-45.6		245	19.2
100	31	16,310	-45.6		245	14.8
80	30	17,797	-45.8		246	8.4
70	30	18,694	-45.9		246	4.5
60	30	19,712	-45.8		236	3.9
50	30	20,926	-45.7		233	2.9
40	30	22,412	-45.5		114	1.4
30	29	24,329	-45.2		93	3.7
25	28	25,538	-44.6		78	4.3
20	27	27,040	-43.6		85	4.9
15	26	28,993	-41.2		78	4.5
10	25	31,762	-37.4		73	3.1
7	20	34,311	-31.9		83	6.4
5	16	36,724	-27.4		69	8.0
4	9	38,331	-24.7			

BARTER IS., ALASKA 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	3.8	89	149	2.3
1000	31	89			142	1.6
950	31	508	5.1	74	258	5.1
900	31	949	4.3	74	258	10.9
850	31	1,413	2.0	72	261	15.9
800	31	1,900	-.8	72	256	18.1
750	31	2,409	-3.5	69	258	21.0
700	31	2,957	-6.2	63	259	22.7
650	31	3,528	-9.2	59	258	24.1
600	31	4,149	-12.7	57	258	26.2
550	31	4,803	-16.7	54	258	28.0
500	31	5,517	-21.5	53	257	30.9
450	31	6,277	-26.6	51	259	33.4
400	31	7,126	-32.6	48	259	37.5
350	31	8,053	-39.3		258	43.7
300	31	9,094	-45.8		258	49.0
250	31	10,294	-49.6		260	49.3
200	31	11,755	-48.5		262	41.0
175	31	12,636	-47.6		262	32.2
150	31	13,655	-47.3		260	28.2
125	31	14,862	-46.9		261	20.4
100	31	16,340	-46.5		264	18.1
80	31	17,821	-46.7		262	14.4
70	31	18,712	-46.6		264	10.9
60	31	19,729	-46.6		257	6.2
50	31	20,938	-46.5		273	4.3
40	30	22,419	-46.0		263	1.0
30	29	24,332	-45.2		93	2.1
25	28	25,553	-44.6		79	2.3
20	26	27,056	-43.1		54	1.4
15	21	29,027	-39.9		84	3.3
10	11	31,763	-37.1			
7						
5						
4						

BETHEL, ALASKA 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	8.5	95	205	8.5
1000	31	101			217	9.3
950	31	523	7.1	86	203	17.5
900	31	969	5.1	87	208	19.4
850	31	1,435	3.6	76	217	18.5
800	31	1,926	2.0	69	224	18.8
750	31	2,445	-.3	63	228	19.8
700	31	2,995	-2.9	60	230	20.8
650	31	3,576	-5.7	55	227	23.7
600	31	4,204	-9.1	55	226	26.8
550	31	4,867	-12.9	52	225	28.4
500	31	5,594	-17.3	51	225	29.9
450	31	6,371	-22.4	49	222	29.5
400	31	7,232	-28.5	46	224	32.4
350	31	8,175	-35.5	46	224	35.2
300	31	9,231	-43.1		228	37.5
250	31	10,439	-49.9		229	37.5
200	31	11,885	-52.1		236	32.2
175	30	12,752	-50.3		234	29.3
150	30	13,759	-50.3		235	22.5
125	30	14,948	-50.4		234	19.4
100	30	16,405	-49.9		232	15.0
80	30	17,864	-49.6		227	10.5
70	30	18,743	-49.3		224	7.6
60	29	19,747	-49.1		218	5.6
50	29	20,944	-48.8		193	4.3
40	29	22,412	-48.1		187	2.7
30	27	24,318	-46.8		127	3.7
25	27	25,529	-45.9		103	4.5
20	23	27,030	-44.4		106	4.9
15	16	28,977	-42.0		90	6.8
10						
7						
5						
4						

BISMARCK, N. DAK. 957 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	14.2	85	115	1.0
1000	31	128				
950	31	568	16.5	75	138	1.4
900	31	1,027	18.2	58	211	5.8
850	31	1,515	16.2	52	262	6.0
800	31	2,029	13.5	49	294	8.5
750	31	2,567	10.0	47	296	12.8
700	31	3,140	6.3	43	292	17.9
650	31	3,741	2.5	39	293	20.6
600	31	4,386	-1.9	43	292	23.9
550	31	5,066	-6.3	43	293	27.4
500	31	5,812	-11.0	38	287	28.9
450	31	6,606	-16.6	36	285	33.4
400	31	7,489	-22.8		282	37.9
350	31	8,454	-30.0		278	43.5
300	31	9,533	-38.0		277	52.1
250	31	10,765	-46.8		277	61.0
200	31	12,215	-54.8		276	66.8
175	31	13,064	-56.6		276	62.2
150	31	14,040	-57.8		280	50.3
125	31	15,186	-58.7		285	34.2
100	31	16,586	-59.1		292	23.1
80	31	17,990	-57.5		312	11.1
70	31	18,836	-56.1		338	7.0
60	31	19,820	-54.8		17	6.2
50	31	20,989	-53.1		42	6.2
40	31	22,434	-50.7		62	7.0
30	30	24,323	-48.3		75	7.6
25	28	25,524	-46.6		73	8.2
20	27	27,011	-44.3		69	8.4
15	23	28,950	-41.5		66	11.5
10						
7						
5						
4						

BOISE, IDAHO 916 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	16.2	51	165	2.7
1000	31	106				
950	31	549				
900	31	1,015	18.5	42	175	.8
850	31	1,507	19.5	32	333	2.7
800	31	2,026	16.6	31	346	.8
750	31	2,571	12.7	34	213	2.1
700	31	3,147	8.4	38	216	8.7
650	31	3,748	3.6	42	220	14.2
600	31	4,398	-1.5	45	226	20.2
550	31	5,080	-6.6	38	229	24.7
500	31	5,824	-11.8	34	227	26.4
450	31	6,618	-17.4		229	28.7
400	31	7,497	-23.5		231	31.7
350	31	8,459	-30.6		232	38.7
300	31	9,536	-38.8		233	46.8
250	31	10,764	-47.8		231	55.2
200	31	12,212	-54.5		232	59.8
175	31	13,065	-55.7		234	53.8
150	31	14,045	-56.7		237	42.0
125	30	15,196	-58.0		237	27.4
100	30	16,597	-59.4		232	14.4
80	29	18,000	-58.3		219	5.8
70	29	18,849	-57.1		197	1.0
60	28	19,818	-56.2		94	3.7
50	28	20,982	-54.9		82	7.4
40	26	22,414	-52.3		80	9.3
30	26	24,286	-49.6		74	9.7
25	25	25,485	-47.4		82	12.0
20	23	26,957	-45.1		80	11.5
15	10	28,896	-43.3			
10						
7						
5						
4						

BROWNSVILLE, TEXAS * 1/ 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	24.9	91	132	4.5
1000	31	129	26.0	84	150	8.5
950	31	578	23.3	82	169	14.2
900	31	1,052	20.9	69	167	15.7
850	31	1,545	18.4	60	163	13.6
800	31	2,063	15.7	53	144	9.7
750	31	2,602	12.6	49	124	7.4
700	31	3,184	9.1	47	119	6.2
650	31	3,785	5.4	47	117	7.0
600	31	4,445	1.5	44	106	6.6
550	31	5,134	-2.6	37	85	6.8
500	31	5,891	-7.2	35	68	6.4
450	31	6,696	-12.5	30	66	7.4
400	31	7,596	-18.4	28	58	9.5
350	31	8,577	-25.5	26	58	9.5
300	31	9,676	-33.8	27	57	7.4
250	31	10,927	-43.6		46	6.4
200	31	12,393	-54.0		26	7.4
175	30	13,236	-59.5		54	7.6
150	30	14,188	-64.6		59	8.4
125	29	15,285	-69.1		63	13.0
100	29	16,614	-68.9		77	17.5
80	27	17,958	-65.7		85	18.5
70	27	18,774	-63.1		84	20.0
60	26	19,728	-60.6		80	24.3
50	26	20,870	-58.4		88	29.9
40	26	22,283	-55.8		88	35.9
30	23	24,131	-52.5		91	39.2
25	22	25,317	-49.6		91	39.2
20	22	26,790	-46.0		86	41.6
15	21	28,715	-43.2		85	40.6
10	20	31,471	-38.8		89	42.7
7	17	33,959	-35.0		91	45.5
5	8	36,334	-29.8			
4						

BUFFALO, N. Y. 990 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	218	13.8	87	238	2.3
1000	31	134				
950	31	572	15.2	77	274	8.9
900	31	1,028	12.7	74	283	12.6
850	31	1,506	9.8	75	286	13.6
800	31	2,008	7.5	67	287	13.6
750	31	2,537	5.2	53	288	16.5
700	31	3,099	3.1	40	296	19.6
650	30	3,693	.0		293	22.7
600	30	4,333	-3.6		292	26.6
550	30	5,009	-7.8		292	28.6
500	30	5,751	-12.6		290	32.2
450	30	6,541	-18.2		288	33.8
400	30	7,417	-24.3		289	38.3
350	30	8,377	-31.4		289	42.7
300	30	9,450	-39.4		289	48.4
250	30	10,675	-47.7		287	51.7
200	30	12,127	-53.2		290	52.1
175	30	12,985	-53.9		289	48.8
150	30	13,972	-55.2		288	42.9
125	29	15,130	-57.0		287	33.8
100	29	16,541	-57.3		290	23.7
80	29	17,959	-55.7		291	10.1
70	29	18,817	-54.5		304	7.0
60	29	19,803	-52.8		322	2.5
50	29	20,985	-51.3		107	3.1
40	28	22,441	-49.9		104	6.0
30	26	24,339	-47.4		90	6.2
25	23	25,552	-46.1		94	11.1
20	19	27,039	-44.2		97	10.7
15	10	28,985	-41.8			
10						
7						
5						
4						

BURRWOOD, LA. 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	27.4	80	292	2.5
1000	31	141	26.5	80	282	3.7
950	31	595	23.2	80	260	5.8
900	31	1,064	20.3	74	236	4.7
850	31	1,557	17.6	69	229	3.9
800	31	2,073	14.6	63	220	4.1
750	31	2,610	11.5	58	211	3.5
700	31	3,191	8.4	54	211	2.9
650	31	3,797	5.0	54	207	1.6
600	31	4,449	1.4	46	29	.8
550	31	5,140	-2.6	45	50	2.1
500	31	5,896	-7.1	40	63	4.1
450	31	6,707	-12.0	36	66	6.0
400	31	7,603	-17.8	31	68	6.4
350	31	8,588	-24.6	31	72	7.6
300	31	9,691	-32.9		67	6.2
250	31	10,947	-42.7		64	8.5
200	31	12,415	-53.9		71	9.3
175	31	13,261	-59.5		66	9.1
150	31	14,213	-65.0		58	11.5
125	31	15,311	-69.1		57	10.7
100	31	16,644	-68.3		69	11.5
80	31	17,995	-64.0		82	11.7
70	31	18,825	-61.3		79	14.2
60	31	19,781	-58.3		80	20.6
50	30	20,935	-56.3		86	24.3
40	29	22,357	-53.8		91	28.2
30	29	24,218	-50.5		91	31.9
25	29	25,412	-48.4		90	34.2
20	27	26,879	-45.8		88	35.7
15	27	28,808	-42.5		83	39.8
10	24	31,577	-36.8		88	43.1
7	21	34,080	-32.1		93	47.6
5	11	36,483	-27.6			
4						

CANTON IS., PACIFIC AREA * 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	27.5	80	90	9.1
1000	31	81	26.9	78	90	9.7
950	31	530	23.3	81	91	15.0
900	31	1,005	20.4	71	92	16.9
850	31	1,498	17.6	67	90	17.1
800	31	2,015	15.2	59	91	16.3
750	31	2,558	13.0	46	89	15.3
700	31	3,138	10.1	34	92	15.2
650	31	3,749	6.7	31	91	14.2
600	31	4,404	2.8	32	85	15.0
550	31	5,100	-1.1	28	81	12.8
500	31	5,858	-5.4	24	86	12.6
450	31	6,676	-10.1	19	86	16.3
400	31	7,578	-15.4	15	98	13.2
350	31	8,573	-22.3	14	102	11.8
300	31	9,686	-30.9	16	105	10.3
250	31	10,954	-40.8		113	12.2
200	31	12,432	-53.5		106	8.5
175	31	13,277	-60.5		85	7.0
150	31	14,220	-68.3		75	4.3
125	31	15,292	-76.2		84	4.7
100	29	16,560	-80.0		90	13.0
80	28	17,849	-72.9		92	24.1
70	28	18,641	-67.2		90	33.0
60	28	19,581	-62.4		89	41.4
50	25	20,719	-57.0		88	37.7
40	25	22,152	-52.1		78	11.1
30	25	24,020	-51.2		271	8.4
25	25	25,207	-49.9		263	11.8
20	23	26,682	-47.0		270	22.5
15	21	28,594	-45.5		269	32.8
10	20	31,300	-44.7		266	26.0
7	18	33,717	-41.5		283	11.7
5	15	36,000	-37.9		273	13.8
4	7	37,566	-34.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1963

CAPE HATTERAS, N. C. — 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	23.0	87	344	1.0
1000	31	129	23.6	79	309	1.6
950	31	575	21.1	74	276	3.5
900	31	1,044	18.3	72	271	6.0
850	31	1,532	15.4	71	264	8.0
800	31	2,045	12.6	67	259	10.7
750	31	2,584	9.9	62	267	13.6
700	31	3,156	6.7	59	275	15.0
650	31	3,758	3.7	50	275	16.9
600	31	4,408	.4	38	273	20.0
550	30	5,094	- 3.2	36	270	20.0
500	30	5,851	- 7.5	38	273	21.0
450	30	6,660	-12.3		272	20.8
400	30	7,556	-18.4		277	23.1
350	30	8,540	-25.2		273	26.8
300	30	9,641	-33.5		270	28.7
250	30	10,895	-43.4		273	31.3
200	30	12,360	-54.7		280	37.3
175	30	13,203	-60.3		282	37.3
150	30	14,156	-63.6		281	30.5
125	30	15,269	-65.5		281	19.8
100	30	16,629	-64.1		291	11.5
80	30	18,007	-60.7		321	2.9
70	30	18,849	-58.5		62	4.5
60	30	19,816	-56.2		84	8.7
50	30	20,981	-53.8		92	16.1
40	30	22,421	-51.6		91	28.2
30	30	24,300	-48.7		92	23.5
25	29	25,502	-47.0		90	24.1
20	29	26,987	-44.9		87	27.2
15	28	28,926	-41.3		86	31.3
10	26	31,701	-36.8		89	33.2
7	25	34,200	-32.5		87	34.2
5	15	36,581	-27.5			
4						

CARIBOU, ME. — 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	191	11.7	95	245	1.4
1000	31	100				
950	31	532	12.3	79	278	3.7
900	31	984	10.1	76	284	6.2
850	31	1,457	7.2	77	278	8.7
800	31	1,954	4.4	72	272	10.1
750	31	2,477	2.0	65	272	12.4
700	31	3,032	- .5	60	268	14.8
650	31	3,619	- 3.3	56	271	17.3
600	31	4,251	- 7.0	50	271	17.3
550	31	4,921	-11.0	43	271	17.7
500	31	5,651	-15.8	39	265	24.1
450	31	6,435	-21.0	37	261	24.3
400	31	7,298	-27.1	36	263	25.8
350	31	8,246	-34.3		262	29.3
300	31	9,306	-42.5		262	33.4
250	31	10,515	-49.8		260	36.1
200	31	11,967	-50.7		259	39.2
175	30	12,840	-50.0		256	36.7
150	30	13,845	-51.0		256	33.8
125	30	15,029	-52.0		256	25.8
100	30	16,473	-52.0		255	17.7
80	30	17,920	-51.1		250	12.4
70	30	18,791	-50.4		243	9.7
60	30	19,796	-49.9		218	6.2
50	29	20,986	-49.1		180	4.5
40	29	22,453	-48.3		131	4.7
30	27	24,352	-46.6		107	6.6
25	27	25,565	-45.2		96	11.5
20	26	27,066	-43.3		83	11.3
15	25	29,017	-40.1		91	16.1
10	23	31,821	-34.9		92	14.0
7	22	34,342	-29.6		94	17.7
5	12	36,759	-24.8			

CHARLESTON, S. C. — 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	13	22.7	92	295	1.6
1000	31	137	23.5	85	280	2.3
950	31	587	22.8	72	279	4.1
900	31	1,057	20.1	69	292	4.3
850	31	1,548	17.0	67	292	3.5
800	31	2,063	13.7	54	279	4.9
750	31	2,603	10.7	57	276	7.2
700	31	3,178	7.8	52	275	8.5
650	31	3,785	4.7	46	281	8.9
600	31	4,436	1.5	40	285	9.5
550	31	5,128	- 2.6	37	276	9.1
500	31	5,883	- 6.8		272	9.7
450	31	6,693	-11.8		288	10.1
400	31	7,592	-18.2		286	12.6
350	31	8,575	-25.2		287	13.2
300	31	9,676	-33.5		282	14.4
250	31	10,930	-43.5		279	13.6
200	31	12,393	-54.9		295	18.6
175	31	13,235	-60.6		295	16.7
150	31	14,184	-65.1		298	15.2
125	31	15,284	-68.2		308	10.5
100	30	16,629	-66.2		316	6.0
80	29	17,997	-62.2		42	7.0
70	29	18,838	-60.0		80	9.7
60	29	19,795	-57.5		89	14.2
50	29	20,953	-55.3		93	21.2
40	28	22,384	-52.4		99	24.3
30	28	24,258	-49.2		92	27.4
25	27	25,457	-47.2		94	28.2
20	25	26,935	-45.4		88	32.8
15	24	28,869	-41.9		86	35.2
10	22	31,651	-36.5		91	39.2
7	7	34,146	-33.2			

COLD BAY, ALASKA* — 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	9.3	89	176	3.7
1000	31	135	8.6	87	192	5.1
950	31	556	7.3	88	208	4.5
900	31	1,004	6.3	78	229	4.9
850	31	1,473	5.8	68	231	5.4
800	31	1,968	4.4	59	232	8.2
750	31	2,491	2.2	54	229	8.9
700	31	3,047	- .9	53	227	14.0
650	31	3,631	- 3.8	50	231	17.1
600	31	4,264	- 7.2	43	240	18.3
550	31	4,933	-11.0	41	245	20.6
500	31	5,664	-15.6	42	247	22.1
450	31	6,441	-21.2	36	248	24.1
400	31	7,311	-27.1	31	248	24.5
350	30	8,255	-34.2	32	253	24.9
300	30	9,316	-42.2		253	27.2
250	30	10,526	-50.4		254	28.6
200	30	11,962	-54.5		252	27.0
175	30	12,820	-53.1		251	23.9
150	30	13,813	-53.4		250	19.4
125	30	14,986	-53.6		244	15.9
100	30	16,424	-52.8		240	13.4
80	30	17,866	-52.1		240	8.9
70	29	18,726	-51.6		234	7.4
60	29	19,725	-51.2		228	5.6
50	29	20,911	-50.7		194	2.7
40	29	22,367	-50.0		138	2.5
30	28	24,251	-48.6		110	3.1
25	27	25,451	-47.6		100	4.3
20	27	26,929	-46.1		102	5.1
15	27	28,851	-43.9		88	7.0
10	23	31,599	-39.1		75	7.2
7	21	34,085	-35.2		86	11.1
5	13	36,415	-32.3		77	11.1
4	6	38,006	-30.8			

COLUMBIA, MO. — 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	238	19.3	89	129	3.3
1000	31	131				
950	31	579	21.6	72	201	4.1
900	31	1,044	19.7	65	267	5.6
850	31	1,535	17.1	64	276	9.9
800	31	2,051	14.3	58	286	11.7
750	31	2,590	11.6	48	294	11.8
700	31	3,168	8.2	48	300	13.2
650	31	3,770	4.7	42	299	13.6
600	31	4,425	.9	37	301	16.3
550	30	5,112	- 3.4	33	301	16.7
500	30	5,867	- 7.9		297	17.3
450	30	6,673	-12.9		294	19.6
400	30	7,568	-19.0		296	22.7
350	30	8,549	-25.7		301	26.8
300	30	9,648	-33.9		301	32.1
250	30	10,899	-43.9		302	37.3
200	30	12,360	-54.7		303	43.7
175	30	13,205	-59.3		302	43.7
150	30	14,160	-63.3		303	35.5
125	30	15,272	-65.9		307	25.3
100	30	16,628	-64.7		316	14.2
80	29	18,003	-61.6		346	8.0
70	29	18,839	-59.4		21	6.4
60	28	19,805	-57.1		55	7.2
50	28	20,966	-54.6		78	9.3
40	28	22,403	-52.2		87	12.0
30	26	24,266	-49.6		89	15.5
25	23	25,464	-47.8		88	16.1
20	18	26,937	-45.7		79	15.3
15	12	28,873	-42.7			

DAYTON, OHIO — 982 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	15.0	93	337	1.4
1000	30	141				
950	30	580	18.0	73	277	3.1
900	30	1,041	15.8	68	300	6.6
850	30	1,525	13.1	65	300	10.7
800	30	2,033	11.4	50	294	13.6
750	30	2,570	9.0	42	293	16.7
700	30	3,140	6.3	35	292	18.1
650	30	3,741	3.0	35	290	21.4
600	30	4,388	- .6		292	23.7
550	30	5,069	- 4.7		291	24.9
500	30	5,822	- 9.2		291	27.2
450	30	6,621	-14.7		295	30.7
400	30	7,511	-20.6		297	35.5
350	30	8,485	-27.7		301	39.6
300	30	9,575	-36.0		300	43.3
250	30	10,816	-45.5		301	47.8
200	30	12,270	-55.0		299	54.8
175	30	13,117	-58.3		297	50.7
150	30	14,082	-60.5		298	41.8
125	30	15,212	-62.2		298	30.9
100	30	16,589	-62.1		297	20.6
80	29	17,978	-59.4		313	10.1
70	29	18,821	-57.6		330	6.2
60	29	19,796	-55.2		31	4.3
50	29	20,967	-52.8		68	7.6
40	29	22,413	-51.0		84	9.5
30	28	24,295	-49.0		88	11.3
25	28	25,497	-47.2		82	14.4
20	28	26,982	-44.8		81	17.1
15	25	28,918	-42.1		81	19.4
10	9	31,660	-38.3			
7						

DEL RIO, TEXAS — 978 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	314	25.8	69	108	7.8
1000	31	117				
950	31	577	24.4	70	129	15.9
900	31	1,044	21.6	70	168	19.0
850	31	1,540	19.9	66	158	16.7
800	31	2,061	16.4	69	150	11.7
750	31	2,601	12.9	64	138	8.5
700	31	3,185	9.5	54	118	6.0
650	31	3,794	5.8	47	104	5.4
600	31	4,447	1.6	46	117	4.1
550	31	5,136	- 2.5	39	117	3.3
500	31	5,893	- 7.0	35	114	4.7
450	31	6,702	-12.1	30	109	7.4
400	31	7,599	-18.0	31	90	9.3
350	31	8,584	-24.9		87	10.3
300	31	9,687	-33.3		76	13.8
250	31	10,944	-42.9		63	16.7
200	31	12,413	-53.8		56	15.9
175	31	13,261	-59.1		57	15.0
150	31	14,215	-64.7		60	15.3
125	30	15,316	-68.9		76	11.7
100	30	16,649	-68.9		60	10.3
80	29	17,991	-65.7		78	14.8
70	29	18,819	-62.6		85	16.1
60	29	19,764	-60.3		84	19.0
50	29	20,906	-58.0		87	23.1
40	29	22,322	-55.1		90	29.3
30	28	24,173	-51.7		92	34.6
25	27	25,361	-49.8		90	36.1
20	25	26,835	-46.9		89	36.5
15	24	28,751	-43.8		86	36.3
10	16	31,496	-40.2			
7	5	33,955	-35.3			

DENVER, COLO. — 842 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,611	14.6	82	211	3.3
1000	31	121				
950	31	565				
900	31	1,033				
850	31	1,526				
800	31	2,045	17.7	59	262	4.3
750	31	2,598	15.4	53	276	4.1
700	31	3,178	11.6	54	283	4.1
650	31	3,791	6.9	59	283	4.7
600	31	4,446	2.1	63	281	6.6
550	31	5,137	- 2.7	64	271	7.4
500	31	5,892	- 7.7	60	259	9.7
450	31	6,702	-12.9	55	258	11.7
400	31	7,594	-18.6	46	261	13.8
350	31	8,577	-25.6	40	259	16.9
300	31	9,676	-34.0	41	257	22.5
250	31	10,927	-43.9		249	29.7
200	31	12,391	-54.4		255	34.8
175	31	13,236	-59.4		257	34.0
150	31	14,191	-63.5		265	29.3
125	31	15,300	-66.7		272	21.8
100	31	16,651	-65.3		266	8.7
80	31	18,022	-61.6		1	2.5
70	31	18,861	-59.5		58	5.8
60	31	19,824	-57.0		74	8.5
50	31	20,984	-54.8		78	9.1
40	30	22,418	-51.9		84	11.8
30	29	24,291	-48.9		90	13.2
25	28	25,490	-47.5		85	14.4
20	27	26,973	-45.4		83	16.3
15	21	28,903	-42.1		83	20.8
10	[illegible]	31,659	-38.7			

DODGE CITY, KANS. — 926 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	19.7	73	179	3.3
1000	30	121				
950	30	570				
900	30	1,039	22.4	58	193	11.7
850	30	1,536	21.0	52	222	13.6
800	30	2,059	18.1	51	232	12.2
750	30	2,604	14.3	49	244	9.3
700	30	3,188	10.4	51	242	6.4
650	30	3,797	6.1	53	236	4.1
600	30	4,453	1.6	53	231	4.7
550	30	5,146	- 2.5	52	252	5.2
500	30	5,901	- 6.9	47	270	6.4
450	30	6,712	-11.9	38	275	7.8
400	30	7,608	-18.1	35	275	9.9
350	30	8,592	-25.2	36	284	12.2
300	30	9,693	-33.5		285	15.2
250	30	10,948	-43.3		289	18.5
200	28	12,414	-54.6		290	20.4
175	28	13,257	-60.5		286	21.8
150	28	14,206	-64.8		290	22.9
125	28	15,310	-67.9		295	15.9
100	28	16,650	-66.6		301	7.4
80	27	18,012	-62.8		16	5.2
70	27	18,851	-60.7		55	6.8
60	27	19,803	-58.1		70	8.5
50	27	20,959	-55.0		81	10.3
40	26	22,394	-52.9		89	13.2
30	25	24,262	-49.6		90	16.5
25	22	25,455	-47.5		87	17.3
20	18	26,925	-45.5		87	17.3
15	8	28,862	-42.9			

EL PASO, TEXAS — 884 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,193	21.4	68	4	.6
1000	31	109				
950	31	561				
900	31	1,040				
850	31	1,535	20.8	59	7	.6
800	31	2,058	17.7	59	139	1.7
750	31	2,601	14.0	62	156	3.7
700	31	3,186	9.9	67	169	4.5
650	31	3,790	5.5	71	167	4.9
600	31	4,449	.9	72	147	4.7
550	31	5,133	- 3.1	67	146	5.2
500	31	5,893	- 7.4	62	149	5.2
450	31	6,700	-12.3	54	151	5.4
400	31	7,600	-17.8	48	153	6.0
350	31	8,586	-24.8	47	141	4.3
300	31	9,689	-33.1	41	121	2.7
250	31	10,945	-43.0		107	1.0
200	31	12,412	-54.4		352	2.7
175	31	13,256	-60.3		19	3.7
150	31	14,205	-65.5		35	2.7
125	31	15,302	-69.4		75	2.1
100	31	16,630	-69.8		62	7.2
80	31	17,972	-65.6		84	12.2
70	31	18,793	-62.7		91	13.6
60	29	19,745	-59.8		87	16.1
50	29	20,890	-57.7		89	20.6
40	29	22,307	-54.8		87	24.7
30	27	24,162	-51.1		91	27.2
25	24	25,352	-49.2		91	28.9
20	22	26,825	-46.7		84	32.1
15	16	28,734	-43.4		88	32.4

ELY, NEV. — 812 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,908	10.9	50	180	7.8
1000	31	122				
950	31	568				
900	31	1,033				
850	31	1,518				
800	31	2,029	16.1	39	178	9.1
750	31	2,582	15.1	34	184	10.5
700	31	3,158	10.8	37	211	11.8
650	31	3,769	6.0	41	214	13.8
600	31	4,420	.8	45	204	14.2
550	31	5,104	- 4.5	45	196	14.2
500	31	5,855	- 9.3		216	15.3
450	31	6,660	-14.3		232	18.3
400	31	7,544	-20.7		233	23.1
350	31	8,518	-27.8		231	29.3
300	31	9,607	-36.1		228	34.0
250	31	10,847	-45.4		228	42.5
200	31	12,304	-54.2		226	50.3
175	31	13,153	-58.3		230	47.4
150	31	14,114	-61.7		233	38.9
125	31	15,237	-63.3		237	24.1
100	31	16,607	-63.6		211	8.9
80	31	17,983	-61.3		128	4.1
70	30	18,824	-59.3		90	5.2
60	30	19,783	-57.6		85	7.8
50	30	20,940	-55.3		82	10.5
40	30	22,371	-53.0		85	11.3
30	27	24,239	-50.0		84	14.4
25	27	25,435	-48.2		90	16.3
20	22	26,907	-46.1		92	17.7
15	19	28,828	-43.1		83	17.7
10	7	31,572	-39.2			
7						
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4						

FAIRBANKS, ALASKA* — 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	9.8	89	246	1.4
1000	30	117			263	1.2
950	30	539	10.3	69	240	8.5
900	30	992	8.0	70	239	13.0
850	30	1,462	5.1	74	235	16.7
800	30	1,954	2.3	75	234	17.9
750	30	2,470	- .4	71	232	21.2
700	30	3,024	- 3.2	67	233	20.8
650	30	3,600	- 6.6	65	236	21.2
600	30	4,228	-10.4	61	238	24.3
550	30	4,890	-14.4	57	238	25.1
500	30	5,611	-18.7	54	242	28.4
450	30	6,383	-23.7	49	244	29.7
400	30	7,241	-29.5	46	246	30.3
350	30	8,180	-36.3	41	249	33.8
300	30	9,232	-44.2		253	36.1
250	30	10,431	-51.3		254	37.3
200	30	11,871	-53.5		252	30.7
175	30	12,731	-52.3		249	29.3
150	30	13,731	-51.3		249	23.9
125	30	14,915	-51.2		248	19.8
100	30	16,368	-50.5		245	15.2
80	29	17,824	-49.9		248	10.3
70	29	18,694	-49.3		246	8.5
60	29	19,708	-49.2		244	6.8
50	29	20,904	-49.1		247	3.7
40	28	22,378	-48.6		245	2.3
30	27	24,273	-47.6		76	1.6
25	25	25,477	-46.8		117	3.1
20	25	26,960	-45.4		105	2.3
15	22	28,877	-43.2		69	6.4
10	19	31,642	-38.4		85	4.7
7	16	34,140	-33.7		78	7.4
5	12	36,494	-30.1			
4	5	38,158	-25.8			

FLINT, MICH. — 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	234	14.2	94	250	2.9
1000	31	143				
950	31	581	16.4	71	285	7.4
900	31	1,039	13.8	69	288	10.1
850	31	1,519	10.8	71	296	11.8
800	31	2,023	8.7	59	300	14.2
750	31	2,554	6.7	44	296	16.7
700	31	3,119	3.8	39	299	18.3
650	31	3,716	.7	33	297	21.0
600	31	4,356	- 2.6	33	298	25.1
550	31	5,032	- 6.8		297	26.4
500	31	5,779	-11.6		294	30.1
450	31	6,573	-17.0		297	33.0
400	31	7,451	-23.3		295	37.3
350	31	8,415	-30.3		297	42.9
300	31	9,493	-38.3		296	51.9
250	31	10,724	-46.6		298	63.7
200	31	12,178	-53.6		299	64.9
175	31	13,033	-55.0		299	54.0
150	31	14,014	-56.7		299	47.0
125	31	15,164	-57.9		300	33.8
100	31	16,569	-58.3		298	23.7
80	31	17,978	-56.7		306	12.6
70	31	18,831	-55.2		325	8.5
60	31	19,815	-53.4		351	4.5
50	31	20,994	-51.3		62	4.5
40	31	22,450	-49.6		86	4.9
30	28	24,345	-47.4		81	7.8
25	25	25,555	-45.8		85	11.7
20	17	27,046	-43.7		79	12.2
15	12	28,988	-41.4			

FORT WORTH, TEXAS — 994 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	180	25.0	70	195	2.1
1000	31	129				
950	31	587	25.6	60	211	14.4
900	31	1,057	23.5	56	217	11.1
850	31	1,553	20.1	58	211	6.4
800	31	2,074	16.1	65	217	2.5
750	31	2,613	12.4	58	102	1.0
700	31	3,195	8.9	53	113	2.9
650	31	3,800	5.2	49	102	3.1
600	31	4,454	1.4	46	119	2.7
550	31	5,143	- 2.3	39	130	3.3
500	31	5,902	- 6.7	37	106	3.5
450	31	6,711	-11.8	31	102	4.3
400	31	7,609	-17.7		75	5.2
350	31	8,596	-24.5		65	5.6
300	31	9,699	-33.1		47	7.6
250	31	10,955	-43.1		44	9.7
200	30	12,422	-54.1		44	10.3
175	30	13,268	-60.0		32	8.7
150	30	14,217	-65.6		31	10.1
125	29	15,315	-68.4		63	7.4
100	29	16,651	-68.1		33	7.0
80	29	18,002	-64.3		70	10.3
70	29	18,835	-61.4		79	11.8
60	29	19,787	-58.6		80	13.6
50	29	20,938	-56.2		88	18.1
40	29	22,364	-53.9		90	23.3
30	29	24,226	-50.4		90	27.8
25	29	25,420	-48.7		91	29.1
20	26	26,898	-45.5		88	32.1
15	18	28,813	-43.6		85	33.0
10	7	31,542	-39.5			

GLASGOW, MONT. — 935 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	696	15.2	70	67	5.4
1000	31	120				
950	31	561				
900	31	1,024	18.8	51	88	3.9
850	31	1,513	16.7	45	300	1.0
800	31	2,027	13.4	43	306	6.6
750	31	2,562	9.8	44	296	9.7
700	31	3,136	5.8	46	288	14.4
650	31	3,732	1.7	47	281	17.3
600	31	4,378	- 2.6	43	271	21.6
550	31	5,056	- 7.4	41	270	24.7
500	31	5,798	-12.4	33	269	23.7
450	31	6,586	-18.3		265	26.6
400	31	7,464	-24.5		267	30.3
350	31	8,422	-31.7		267	34.4
300	31	9,494	-39.8		269	44.1
250	31	10,716	-48.5		268	53.8
200	31	12,162	-54.2		266	57.5
175	31	13,017	-54.6		266	54.2
150	31	14,002	-55.5		270	38.9
125	31	15,160	-57.1		275	26.8
100	31	16,569	-57.8		279	18.1
80	31	17,972	-56.6		299	8.7
70	31	18,828	-55.8		317	5.8
60	30	19,812	-54.5		359	3.7
50	29	20,985	-52.8		42	5.2
40	29	22,430	-51.0		57	4.9
30	29	24,314	-48.1		85	5.1
25	29	25,519	-46.6		75	5.1
20	23	26,989	-44.5		78	5.8
15	16	28,911	-41.6		236	2.7

See reference note at end of table

RAWINSONDE DATA

Average monthly values

GRAND JUNCTION, COLO. 855 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	19.0	60	134	3.9
1000	31	99				
950	31	548				
900	31	1,025				
850	31	1,523	19.5	58	132	4.9
800	31	2,045	18.2	55	135	8.5
750	31	2,595	15.0	57	162	4.9
700	31	3,177	11.0	61	232	4.9
650	31	3,787	6.3	66	248	5.6
600	31	4,443	1.2	72	246	6.6
550	31	5,135	- 3.7	73	242	7.2
500	31	5,885	- 8.0	64	236	10.1
450	31	6,693	-13.0	57	244	11.1
400	31	7,585	-18.7	51	249	15.5
350	31	8,565	-26.0	46	249	20.4
300	31	9,661	-34.6	43	244	26.0
250	31	10,908	-44.5		243	33.2
200	30	12,366	-54.8		246	40.6
175	30	13,210	-59.6		251	39.2
150	30	14,164	-63.9		252	29.7
125	30	15,270	-67.4		252	20.4
100	30	16,616	-66.1		243	8.5
80	30	17,981	-62.6		209	1.4
70	30	18,818	-60.7		70	3.9
60	29	19,771	-58.7		78	7.2
50	29	20,922	-56.3		76	9.7
40	29	22,349	-53.3		85	11.8
30	29	24,214	-50.4		93	12.6
25	28	25,411	-48.7		87	14.2
20	28	26,883	-46.9		86	17.7
15	27	28,804	-43.8		85	20.6
10	24	31,557	-39.3		88	24.9
7	20	34,040	-35.1		95	23.3
5	20	36,395	-30.7			

GREAT FALLS, MONT. 890 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	13.3	59	238	4.9
1000	31	123				
950	31	565				
900	31	1,030				
850	31	1,515	16.4	46	232	3.3
800	31	2,028	13.7	45	223	2.1
750	31	2,565	9.9	50	229	4.5
700	31	3,139	6.0	51	241	10.3
650	31	3,737	1.9	52	246	13.2
600	31	4,382	- 3.0	51	247	17.1
550	31	5,059	- 7.9	48	247	23.3
500	31	5,801	-13.0	42	245	26.4
450	31	6,590	-18.5	35	244	29.5
400	31	7,466	-24.6		248	29.9
350	31	8,424	-31.8		246	35.7
300	31	9,496	-39.8		248	45.8
250	31	10,719	-48.5		251	54.0
200	31	12,166	-53.7		249	52.8
175	31	13,024	-53.7		250	46.6
150	30	14,008	-55.0		250	36.5
125	29	15,167	-56.2		251	26.4
100	29	16,582	-57.2		254	15.7
80	29	17,996	-56.4		278	7.8
70	29	18,856	-55.6		294	3.3
60	29	19,830	-54.7		17	2.1
50	29	21,000	-53.4		53	3.1
40	29	22,443	-51.2		59	4.7
30	28	24,329	-48.5		61	7.2
25	28	25,534	-46.7		72	8.9
20	28	27,024	-44.1		81	6.4
15	28	28,968	-41.1		86	10.7
10	26	31,759	-36.7		94	10.9
7	24	34,257	-33.0		90	12.6
5	21	36,622	-29.5			

GREEN BAY, WIS. 991 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	13.2	94	285	2.1
1000	31	132				
950	31	573	16.0	72	307	6.8
900	31	1,027	13.6	70	308	7.0
850	31	1,507	10.9	68	304	9.3
800	31	2,011	8.5	60	308	12.4
750	31	2,540	6.1	52	306	15.5
700	31	3,106	3.6	45	307	19.2
650	31	3,702	.5	39	305	22.0
600	31	4,343	- 3.4	39	301	25.4
550	31	5,019	- 7.4		302	28.6
500	31	5,762	-12.0		301	32.2
450	31	6,554	-17.4		300	34.8
400	31	7,432	-23.6		301	39.4
350	31	8,394	-30.6		300	45.8
300	31	9,471	-38.6		302	53.2
250	31	10,701	-46.9		302	63.9
200	31	12,154	-53.9		299	68.0
175	31	13,009	-55.3		300	61.8
150	31	13,989	-56.9		303	48.6
125	31	15,138	-58.5		302	35.9
100	31	16,540	-58.3		309	24.1
80	31	17,948	-56.9		321	12.0
70	31	18,794	-55.4		334	9.3
60	30	19,786	-53.9		356	6.6
50	30	20,963	-51.9		38	7.2
40	30	22,415	-50.0		85	7.0
30	29	24,308	-47.4		88	8.4
25	28	25,518	-45.6		81	9.9
20	25	27,012	-43.2		78	11.8
15	10	28,958	-40.6			

GREENSBORO, N. C. 985 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	19.0	88	326	1.0
1000	31	143				
950	31	587	20.6	68	331	3.3
900	31	1,052	18.4	68	307	5.6
850	31	1,541	15.4	70	279	9.1
800	31	2,054	12.4	70	278	12.2
750	31	2,598	9.7	62	285	14.2
700	31	3,165	6.9	50	288	15.0
650	31	3,769	3.7	46	287	15.5
600	31	4,418	.3	37	284	17.1
550	31	5,108	- 3.5	38	284	19.2
500	31	5,860	- 7.7	34	283	22.0
450	31	6,671	-12.8		280	22.9
400	31	7,563	-18.9	31	283	25.3
350	31	8,543	-26.1		280	26.8
300	31	9,640	-34.7		283	30.1
250	31	10,888	-44.4		285	34.6
200	31	12,347	-55.2		287	37.5
175	31	13,190	-60.2		288	35.5
150	31	14,141	-64.3		289	30.1
125	31	15,253	-65.4		287	20.6
100	31	16,608	-65.3		286	13.8
80	31	17,980	-61.4		336	4.5
70	31	18,824	-59.2		48	3.9
60	31	19,785	-56.8		81	7.4
50	31	20,948	-54.0		87	12.2
40	31	22,387	-52.2		92	17.1
30	29	24,256	-49.6		90	19.4
25	28	25,450	-48.0		89	21.2
20	24	26,924	-45.8		89	23.7
15	17	28,844	-43.4		85	25.8
10	5	31,565	-40.1			

GUAM, MARIANA IS. 997 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	111	25.3	95	96	3.5
1000	31	83				
950	31	537	24.0	87	100	11.1
900	31	1,008	21.5	84	99	11.7
850	31	1,504	18.8	84	96	10.9
800	31	2,024	16.0	83	96	11.1
750	31	2,571	13.3	78	96	12.0
700	31	3,150	10.2	71	95	11.1
650	31	3,764	6.7	67	93	10.9
600	31	4,418	2.8	64	91	10.7
550	31	5,114	- 1.3	61	90	10.3
500	31	5,872	- 5.8	58	96	9.1
450	31	6,690	-10.7	58	100	8.7
400	31	7,589	-16.1	52	96	6.6
350	31	8,582	-22.7	51	107	4.1
300	31	9,694	-30.9	46	117	2.1
250	31	10,961	-41.0		274	.6
200	31	12,436	-53.8		102	1.7
175	30	13,281	-60.9		14	3.1
150	30	14,221	-68.6		25	6.0
125	30	15,290	-76.6		67	10.1
100	29	16,562	-77.1		81	21.0
80	28	17,870	-70.3		90	31.9
70	28	18,668	-67.1		89	39.8
60	28	19,608	-63.5		89	44.1
50	28	20,737	-60.2		89	39.8
40	26	22,142	-57.1		87	39.0
30	26	23,983	-52.5		90	25.3
25	26	25,169	-50.1		87	19.4
20	25	26,635	-48.2		85	17.9
15	22	28,541	-45.6		79	16.7
10	19	31,260	-42.8		80	32.1
7	12	33,684	-41.0		89	40.6
5	10	35,946	-38.9			

HILO, HAWAII 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	11	21.5	88	240	4.9
1000	31	137	22.8	82	220	3.1
950	31	584	19.8	84	93	5.1
900	31	1,048	16.7	86	88	7.6
850	31	1,534	13.9	87	85	7.2
800	31	2,045	11.9	76	89	6.4
750	31	2,585	9.5	57	94	6.4
700	31	3,157	8.1	35	92	4.7
650	31	3,763	5.7		89	5.8
600	31	4,418	2.3		86	3.5
550	31	5,113	- 1.6		72	3.3
500	31	5,870	- 5.7		346	.6
450	31	6,685	-10.9		284	2.5
400	31	7,583	-17.3		261	7.4
350	31	8,569	-24.8		256	12.0
300	31	9,671	-33.3		261	17.7
250	30	10,925	-43.3		263	25.8
200	29	12,387	-55.5		261	30.7
175	29	13,225	-62.1		261	33.2
150	29	14,163	-68.2		259	29.5
125	28	15,250	-71.3		246	20.4
100	28	16,568	-70.4		156	4.7
80	28	17,904	-66.7		93	20.6
70	28	18,715	-64.4		91	26.8
60	28	19,661	-62.2		88	30.9
50	28	20,793	-60.0		87	35.0
40	27	22,194	-57.5		90	36.5
30	27	24,024	-53.8		90	37.7
25	26	25,201	-51.3		88	34.4
20	26	26,661	-48.1		90	33.0
15	24	28,568	-46.3		90	28.7
10	18	31,283	-42.0		91	34.8
7	12	33,719	-39.2			
5	6	35,982	-38.2			

HUNTINGTON, W. VA. 988 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	16.6	95	235	.6
1000	31	144				
950	31	585	19.0	78	274	4.5
900	31	1,049	16.5	73	284	8.7
850	31	1,535	13.7	69	287	13.0
800	31	2,044	11.6	55	287	16.3
750	31	2,579	9.7	42	289	17.3
700	31	3,154	6.8	38	295	18.5
650	31	3,754	3.4	37	293	19.8
600	31	4,405	- .2	36	297	21.4
550	31	5,088	- 4.3		293	22.1
500	31	5,842	- 8.7		290	24.5
450	31	6,643	-13.9		294	27.4
400	31	7,536	-19.9		294	32.2
350	31	8,513	-26.9		297	35.5
300	31	9,606	-35.2		297	37.7
250	31	10,852	-44.7		299	42.5
200	31	12,310	-55.2		297	44.9
175	31	13,154	-58.8		296	43.7
150	31	14,115	-61.6		296	35.7
125	31	15,239	-63.3		296	28.7
100	31	16,609	-62.6		296	18.3
80	31	17,995	-60.2		314	8.4
70	31	18,835	-57.8		350	4.5
60	31	19,811	-55.3		64	5.4
50	31	20,980	-52.8		92	7.8
40	31	22,426	-51.1		88	10.7
30	31	24,308	-48.4		88	13.6
25	31	25,514	-46.5		89	15.5
20	28	27,008	-44.5		89	18.6
15	17	28,925	-42.0		87	22.5

INTERNAT. FALLS, MINN.* 974 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	12.0	90	182	1.2
1000	31	134				
950	31	563	15.4	76	234	4.1
900	31	1,025	13.8	68	283	5.8
850	31	1,507	11.3	58	302	7.4
800	31	2,009	8.4	54	303	10.3
750	31	2,539	5.7	47	304	13.4
700	31	3,102	2.7	46	307	15.5
650	31	3,692	- .7	41	305	17.7
600	31	4,333	- 4.3	36	305	19.8
550	31	5,005	- 8.7	30	306	22.7
500	31	5,745	-13.4	26	302	24.9
450	31	6,530	-19.1	26	303	27.0
400	31	7,405	-25.4	27	301	30.3
350	31	8,359	-32.6	26	299	35.2
300	31	9,427	-40.6	25	299	41.4
250	31	10,648	-48.2		298	51.9
200	31	12,096	-54.1		292	60.4
175	30	12,947	-54.4		295	58.1
150	30	13,933	-54.6		297	46.2
125	29	15,092	-55.6		300	34.0
100	29	16,511	-56.4		306	22.7
80	29	17,930	-55.4		310	16.9
70	29	18,785	-54.4		317	12.4
60	28	19,773	-53.2		328	8.0
50	28	20,950	-51.9		359	4.5
40	26	22,406	-50.2		51	3.3
30	25	24,295	-47.9		98	4.3
25	25	25,501	-46.7		90	4.9
20	21	26,976	-44.7		81	4.7
15	20	28,919	-41.4		88	7.0
10	16	31,674	-37.4		84	4.5
7	11	34,133	-34.0			

JACKSON, MISS. 1005 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	94	22.7	92	250	1.9
1000	31	136	23.2	90	253	2.5
950	31	587	23.7	75	269	5.4
900	31	1,059	20.8	73	269	4.7
850	31	1,552	17.4	74	273	4.3
800	31	2,069	14.4	67	291	2.7
750	31	2,607	11.5	57	307	3.5
700	31	3,187	8.5	51	331	4.5
650	31	3,790	5.2	43	338	4.5
600	31	4,446	1.4	42	321	3.5
550	31	5,133	- 2.1	36	339	2.9
500	31	5,895	- 6.7		4	3.1
450	31	6,703	-11.9		19	4.1
400	31	7,604	-17.7		30	6.0
350	31	8,589	-24.8		24	7.4
300	31	9,691	-33.2		15	9.7
250	31	10,946	-42.9		13	10.5
200	31	12,413	-53.8		8	12.2
175	31	13,259	-59.4		8	11.7
150	31	14,211	-65.1		8	11.8
125	31	15,309	-69.0		32	10.1
100	31	16,643	-67.6		44	7.2
80	31	18,001	-63.6		63	8.5
70	31	18,827	-61.0		73	9.9
60	31	19,788	-58.7		83	13.4
50	31	20,940	-56.0		88	19.0
40	31	22,367	-53.8		89	22.3
30	31	24,227	-50.7		91	27.0
25	30	25,417	-49.1		94	31.3
20	29	26,890	-47.1		89	32.6
15	29	28,806	-44.2		87	37.5
10	24	31,544	-39.5		85	41.0
7	8	33,984	-37.1			

JACKSONVILLE, FLA. 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	23.5	95	291	3.1
1000	31	147	23.9	87	258	4.5
950	31	595	23.1	75	265	7.0
900	31	1,068	20.4	73	267	6.0
850	31	1,561	17.3	72	278	4.5
800	31	2,077	14.1	69	275	4.1
750	31	2,617	11.2	65	276	4.9
700	31	3,194	7.9	65	278	7.2
650	31	3,798	4.5	61	278	6.4
600	31	4,452	1.3	51	278	6.2
550	31	5,140	- 2.4	41	290	4.3
500	31	5,900	- 6.9	36	292	3.9
450	31	6,708	-12.0	35	332	2.9
400	31	7,608	-17.7		300	2.1
350	31	8,593	-24.8		304	2.9
300	31	9,694	-33.3		310	3.5
250	31	10,949	-43.1		295	4.1
200	31	12,416	-54.2		327	6.8
175	30	13,262	-60.2		349	5.2
150	30	14,210	-65.7		344	7.2
125	30	15,306	-69.0		6	5.6
100	30	16,641	-67.6		65	5.2
80	30	17,997	-63.1		67	8.4
70	30	18,830	-60.8		78	14.8
60	30	19,787	-57.8		83	20.4
50	30	20,944	-55.3		90	25.4
40	29	22,378	-52.6		99	28.6
30	29	24,246	-49.8		93	30.3
25	29	25,443	-48.1		88	31.3
20	27	26,918	-45.4		86	36.9
15	26	28,849	-41.3		88	40.0
10	24	31,634	-35.5		93	42.0
7	19	34,134	-31.2		90	44.7
5	7	36,537	-26.4			

JOHNSTON IS., PACIFIC AREA 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	3	26.8	82	93	13.0
1000	27	117	25.8	82	91	14.8
950	27	569	22.2	82	92	17.9
900	27	1,037	19.0	78	92	18.3
850	27	1,527	16.4	71	92	15.3
800	27	2,042	14.0	62	92	13.4
750	27	2,584	11.8	46	89	11.8
700	27	3,160	9.4	36	84	9.9
650	26	3,766	6.1	33	88	8.2
600	26	4,423	2.3	34	84	6.2
550	26	5,112	- 2.0	37	85	5.1
500	26	5,872	- 6.4		66	2.5
450	26	6,681	-11.7		35	1.2
400	26	7,581	-17.3		262	3.3
350	26	8,566	-24.7		253	7.8
300	26	9,668	-33.1		267	14.0
250	26	10,923	-43.2		266	22.1
200	26	12,385	-55.3		255	25.3
175	26	13,224	-61.8		256	27.4
150	26	14,162	-68.4		260	29.1
125	26	15,239	-74.0		267	19.2
100	26	16,537	-72.9		91	3.9
80	26	17,864	-67.8		86	25.8
70	26	18,671	-65.8		86	31.3
60	26	19,612	-63.1		88	34.8
50	26	20,742	-59.9		85	35.2
40	25	22,143	-57.6		87	37.1
30	24	23,974	-53.5		88	30.3
25	24	25,154	-51.2		88	23.9
20	22	26,613	-48.5		85	23.3
15	21	28,523	-45.6		87	27.0
10	16	31,257	-42.7		87	28.9
7						

KING SALMON, ALASKA 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	10.1	90	174	5.8
1000	31	128	10.6	86	191	6.4
950	31	554	9.4	80	202	9.9
900	31	1,003	7.6	80	216	11.1
850	31	1,473	5.7	77	217	12.8
800	31	1,967	3.5	71	216	13.4
750	31	2,490	1.2	67	218	14.4
700	31	3,042	- 1.5	60	220	15.2
650	31	3,627	- 4.7	57	223	16.9
600	31	4,256	- 7.8	47	226	17.3
550	31	4,925	-11.8	44	224	18.8
500	31	5,651	-16.5	45	223	18.6
450	31	6,430	-21.6	43	224	18.1
400	31	7,294	-27.6	41	226	19.4
350	31	8,240	-34.6	42	228	20.2
300	31	9,299	-42.6		228	21.8
250	31	10,509	-50.2		225	22.3
200	30	11,948	-53.5		236	24.1
175	29	12,806	-52.2		242	21.6
150	28	13,795	-52.1		242	18.1
125	27	14,968	-51.8		240	15.3
100	27	16,416	-51.4		237	12.6
80	27	17,868	-50.4		236	10.3
70	27	18,742	-50.1		229	8.2
60	27	19,747	-49.9		220	6.2
50	27	20,940	-49.4		208	4.3
40	26	22,408	-49.0		152	1.6
30	25	24,308	-47.2		117	2.5
25	25	25,516	-46.3		105	2.5
20	21	26,996	-45.4		122	2.7
15	17	28,937	-42.6		81	5.1
10	6	31,729	-38.6			

KOROR, CAROLINE IS. 1006 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	26.2	89	259	5.8
1000	31	80	26.0	87	263	7.2
950	31	530	23.4	84	260	13.0
900	31	1,004	20.6	84	262	15.2
850	31	1,498	18.0	83	270	12.4
800	31	2,017	15.4	82	270	7.2
750	31	2,560	12.8	79	279	5.2
700	31	3,141	9.9	76	305	1.7
650	31	3,752	6.3	77	162	.6
600	31	4,408	2.6	75	126	2.1
550	31	5,103	- 1.2	73	115	5.1
500	31	5,863	- 5.4	74	116	7.2
450	30	6,683	-10.1	68	98	6.8
400	30	7,584	-15.6	64	89	10.1
350	30	8,578	-22.3	61	90	11.8
300	30	9,693	-30.6	53	79	12.2
250	30	10,960	-41.1		80	13.0
200	30	12,434	-54.0		74	20.0
175	29	13,276	-61.4		69	24.5
150	29	14,214	-69.2		76	32.1
125	27	15,281	-77.1		81	34.2
100	22	16,551	-77.5		90	24.9
80	19	17,841	-72.7		88	32.2
70	18	18,632	-69.8		89	40.6
60	17	19,557	-64.9		87	52.1
50	17	20,690	-57.8		91	45.3
40	17	22,115	-54.3		106	11.3
30	17	23,968	-52.1		281	11.3
25	17	25,156	-50.0		285	13.6
20	17	26,624	-47.5		285	14.8
15	15	28,533	-46.6		290	9.7
10	12	31,241	-44.1		87	3.1
7	9	33,656	-41.7			

KOTZEBUE, ALASKA 1008 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	8.3	89	164	3.3
1000	31	69			164	4.1
950	31	491	6.0	83	191	7.0
900	31	933	3.4	85	202	7.4
850	31	1,395	1.1	83	203	11.1
800	31	1,881	- .8	80	202	11.8
750	31	2,395	- 3.2	79	202	14.0
700	31	2,939	- 5.8	75	208	15.2
650	31	3,514	- 8.9	72	211	18.5
600	31	4,134	-12.4	69	217	19.4
550	31	4,790	-16.6	66	219	22.3
500	31	5,504	-21.1	60	221	25.3
450	31	6,267	-26.4	55	222	27.0
400	31	7,114	-32.6	50	224	29.9
350	31	8,043	-39.2		222	38.7
300	31	9,084	-45.6		223	41.8
250	31	10,287	-49.3		221	42.3
200	31	11,752	-48.0		229	34.6
175	31	12,635	-47.4		232	27.0
150	31	13,654	-47.5		231	22.3
125	31	14,859	-47.4		233	19.4
100	29	16,338	-47.5		232	14.8
80	29	17,813	-47.1		232	9.7
70	29	18,705	-47.3		233	8.2
60	29	19,716	-47.4		219	5.4
50	29	20,922	-47.3		212	3.1
40	29	22,398	-47.1		154	1.9
30	28	24,312	-46.0		100	3.1
25	27	25,524	-45.3		94	4.5
20	27	27,016	-44.5		92	3.9
15	24	28,948	-42.7		90	5.1
10	16	31,688	-39.2			
7	6	34,067	-37.2			

LAKE CHARLES, LA. 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	24.0	93	28	1.7
1000	31	141	25.6	81	240	2.7
950	31	595	23.0	77	222	7.0
900	31	1,063	20.5	70	201	6.0
850	31	1,556	17.7	64	190	4.5
800	31	2,073	14.9	61	173	2.9
750	31	2,613	11.6	59	149	1.4
700	31	3,192	8.2	56	110	1.7
650	31	3,800	4.8	49	104	3.3
600	31	4,450	1.3	43	92	4.3
550	31	5,145	- 2.4	38	92	5.4
500	31	5,898	- 6.8	34	82	5.4
450	31	6,710	-11.8	31	74	8.4
400	31	7,607	-17.8		70	11.1
350	31	8,593	-24.7		64	12.0
300	31	9,696	-33.0		69	13.0
250	31	10,952	-43.0		67	15.5
200	31	12,420	-54.0		71	14.6
175	31	13,266	-59.4		65	13.0
150	31	14,218	-64.8		63	13.8
125	31	15,319	-68.8		71	11.7
100	31	16,654	-67.4		66	9.5
80	31	18,012	-63.4		78	12.0
70	31	18,845	-61.3		78	14.4
60	31	19,799	-58.9		81	17.5
50	31	20,950	-56.2		89	21.2
40	30	22,377	-53.9		88	27.8
30	30	24,237	-50.9		94	32.6
25	30	25,429	-48.4		91	33.8
20	29	26,909	-45.3		90	37.7
15	26	28,845	-41.6		85	42.0
10	13	31,611	-37.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	LANDER, WYO. 832 MB						LAS VEGAS, NEV. 937 MB						LIHUE, HAWAII* 1013 MB						LITTLE ROCK, ARK. 1007 MB						MCGRATH, ALASKA 1001 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,696	14.7	57	235	2.5	31	660	25.8	39	208	5.2	31	36	25.0	75	62	9.7	31	79	21.8	90	344	.4	31	103	9.6	88	198	5.4
1000	31	110					31	78					31	146	24.1	76	66	12.0	31	138	23.0	85	226	1.2	31	110			200	3.5
950	31	550					31	530					31	596	20.2	64	74	15.0	31	590	23.9	66	231	6.4	31	534	9.1	78	191	10.3
900	31	1,024					31	1,015	26.6	34	202	7.4	31	1,059	16.9	81	77	17.7	31	1,061	21.2	65	252	6.4	31	984	6.7	76	198	12.0
850	31	1,518					31	1,516	23.2	37	203	8.2	31	1,545	13.7	82	76	11.8	31	1,555	18.0	63	277	5.2	31	1,452	4.3	78	209	10.9
800	31	2,034	16.9	43	269	1.2	31	2,041	19.2	42	200	9.9	31	2,054	11.7	63	88	11.7	31	2,072	15.2	56	294	5.4	31	1,944	2.1	73	209	13.0
750	31	2,577	14.0	44	232	2.1	31	2,589	14.7	49	193	11.5	31	2,594	10.8	33	99	7.8	31	2,612	12.0	53	312	5.4	31	2,462	- .2	70	208	14.2
700	31	3,161	10.5	42	229	6.2	31	3,172	10.1	52	178	12.2	31	3,166	8.2	29	89	5.6	31	3,192	8.7	48	325	5.1	31	3,014	- 3.1	70	209	16.5
650	31	3,766	5.9	45	247	10.5	31	3,781	5.5	56	190	13.6	31	3,773	5.2	26	103	3.5	31	3,797	5.4	45	348	5.1	31	3,595	- 6.2	65	214	15.5
600	31	4,423	.6	50	253	14.0	31	4,434	.8	50	182	12.4	31	4,424	1.7	23	169	1.2	31	4,452	1.6	41	328	4.5	31	4,222	- 9.5	56	214	14.0
550	31	5,109	- 4.9	53	258	15.7	31	5,116	- 3.4	38	190	10.7	31	5,116	- 2.4	23	244	2.9	31	5,143	- 2.1		337	3.9	31	4,881	-13.2	57	218	13.4
500	31	5,859	-10.0	46	254	18.6	31	5,875	- 7.8		214	11.7	31	5,870	- 7.2	23	243	5.8	31	5,900	- 6.3		326	3.3	31	5,611	-17.8	56	222	15.0
450	31	6,660	-15.3	39	250	21.0	31	6,681	-13.1		225	14.6	31	6,677	-12.9	27	243	9.9	31	6,711	-11.8		322	4.5	31	6,378	-23.0	53	228	18.3
400	31	7,545	-21.4		248	26.2	31	7,575	-19.2		231	16.7	31	7,572	-19.0	29	249	11.7	31	7,609	-18.0		318	7.6	31	7,245	-28.9	49	234	16.7
350	31	8,516	-28.3		248	34.6	31	8,555	-26.2		229	20.2	31	8,552	-26.0	27	251	18.8	31	8,593	-24.9		328	10.1	31	8,187	-35.4	51	236	20.0
300	31	9,603	-36.4		249	42.9	31	9,653	-34.5		221	26.0	31	9,649	-34.4	25	256	24.5	31	9,695	-33.1		338	11.5	31	9,244	-42.8		247	22.9
250	31	10,844	-45.5		247	52.6	31	10,904	-43.8		217	31.3	31	10,897	-44.4		259	32.2	31	10,952	-42.7		333	14.4	31	10,453	-50.3		232	22.1
200	31	12,298	-55.3		248	60.8	31	12,370	-53.8		220	38.3	31	12,353	-56.1		258	40.8	31	12,422	-53.8		333	16.3	31	11,895	-52.7		249	16.9
175	31	13,142	-58.9		253	56.3	31	13,218	-58.8		224	36.9	31	13,189	-62.4		260	41.6	31	13,269	-59.5		327	15.3	31	12,760	-50.9		241	15.7
150	31	14,104	-61.2		253	44.1	31	14,175	-63.1		229	29.9	31	14,129	-67.3		254	37.1	31	14,222	-64.7		327	15.2	31	13,764	-50.4		241	15.9
125	31	15,230	-63.2		255	27.4	31	15,288	-65.8		232	19.2	31	15,222	-68.8		247	22.7	31	15,325	-68.1		340	11.8	31	14,953	-50.6		238	13.4
100	31	16,602	-62.1		256	13.2	31	16,644	-65.5		204	8.0	31	16,562	-67.7		170	4.3	31	16,665	-67.4		348	6.8	31	16,410	-49.9		244	9.9
80	31	17,990	-59.8		330	2.1	31	18,009	-62.4		135	4.1	31	17,912	-65.3		91	16.3	31	18,024	-62.9		49	8.7	31	17,870	-49.6		238	8.2
70	31	18,835	-58.9		54	4.3	31	18,844	-60.3		105	6.0	31	18,727	-63.2		89	22.7	31	18,857	-60.7		62	7.8	31	18,763	-49.3		236	5.4
60	31	19,798	-57.0		64	7.0	30	19,805	-57.7		88	9.1	31	19,677	-61.6		88	27.8	31	19,816	-58.0		73	9.9	31	19,755	-49.0		238	4.1
50	30	20,958	-55.0		71	10.1	30	20,961	-55.6		83	13.0	31	20,811	-59.8		88	30.9	31	20,971	-55.7		84	12.2	31	20,952	-48.8		231	2.9
40	29	22,396	-52.4		77	12.6	28	22,393	-53.3		90	15.5	30	22,215	-57.6		89	34.8	30	22,399	-53.0		91	17.1	30	22,419	-48.4		172	1.7
30	27	24,272	-49.4		82	12.4	26	24,255	-50.5		91	18.3	30	24,263	-50.5		90	37.7	29	24,263	-50.5		88	21.2	30	24,317	-47.4		96	3.1
25	25	25,473	-47.4		83	12.4	26	25,448	-48.7		91	20.8	30	25,223	-52.0		89	36.9	29	25,457	-48.6		90	23.9	27	25,521	-46.3		101	3.9
20	23	26,946	-45.2		86	13.0	18	26,926	-46.4		91	22.1	29	26,678	-49.4		90	35.4	29	26,934	-46.0		90	26.0	24	27,013	-45.4		104	4.1
15	16	28,860	-42.5		94	14.2	8	28,865	-43.0				27	28,585	-46.0		87	34.2	23	28,857	-43.8		89	30.3	11	28,918	-42.8			
10	5	31,663	-39.8										23	31,311	-41.4		91	38.3	10	31,621	-38.8									
7													21	33,755	-37.9		90	42.3												
5													17	36,091	-34.1		92	49.0												
4													9	37,661	-31.4															

Standard pressure surface (mb.)	MAJURO, MARSHALL IS. 1009 MB						MARCUS IS., N. PACIFIC 1012 MB						MEDFORD, OREG. 970 MB						MERIDA, MEXICO 1015 MB						MIAMI, FLA. * 2/ 1015 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	3	27.4	84	87	5.2	29	9	27.3	80	86	6.6	31	401	13.8	76	183	.8	31	11	22.9	97	83	5.4	31	4	25.2	89	355	2.5
1000	31	86	26.8	84	84	6.2	29	111	26.6	81	104	7.0	31	142					31	138	24.3	91	91	8.0	31	137	26.4	79	51	2.9
950	31	536	23.8	84	89	8.5	29	566	23.2	84	102	8.4	31	582	16.5	63	269	2.3	31	590	23.0	83	111	11.3	31	589	23.3	77	119	5.8
900	31	1,012	20.9	84	95	9.7	29	1,036	20.3	81	99	7.0	31	1,039	15.0	62	284	2.1	31	1,061	20.7	75	107	11.1	31	1,061	20.4	70	121	5.8
850	31	1,506	17.9	82	95	10.7	29	1,529	17.5	78	93	6.6	31	1,521	13.0	64	54	1.6	31	1,554	18.1	68	107	10.7	31	1,554	17.5	65	122	5.6
800	31	2,025	15.4	81	95	10.7	29	2,046	15.0	67	90	6.0	31	2,030	11.3	55	152	1.9	31	2,072	15.2	65	100	8.7	31	2,071	14.6	60	127	4.3
750	31	2,571	12.8	75	94	12.9	29	2,581	12.3	60	86	6.6	31	2,565	8.2	50	208	6.6	31	2,605	12.3	59	102	8.9	31	2,608	11.7	53	108	3.1
700	31	3,150	9.9	71	94	12.0	29	3,167	9.3	55	81	5.6	31	3,133	4.7	45	209	8.9	31	3,193	8.9	57	95	8.5	31	3,190	8.6	47	114	2.9
650	31	3,764	6.5	72	96	12.6	29	3,776	5.4	52	80	6.0	31	3,727	1.0	36	214	11.5	31	3,795	5.6	53	95	8.7	31	3,794	5.5	44	107	2.9
600	31	4,418	2.8	71	94	14.0	29	4,428	1.4	48	82	6.0	31	4,373	- 2.8		221	15.0	31	4,455	1.9	48	94	9.3	31	4,452	1.8	39	74	1.9
550	31	5,112	- 1.0	70	94	15.0	29	5,119	- 2.5	41	87	2.7	31	5,050	- 7.2		222	19.2	31	5,139	- 2.3	47	89	9.5	31	5,141	- 2.4	37	74	.4
500	31	5,875	- 5.0	65	90	14.8	29	5,875	- 6.9	37	83	1.9	31	5,794	-12.3		225	22.0	31	5,904	- 7.0	51	88	9.1	31	5,900	- 7.1	36	113	.2
450	31	6,694	-10.0	59	91	15.7	29	6,689	-11.8	37	81	1.4	31	6,583	-18.1		228	25.3	31	6,712	-12.0	47	74	8.0	31	6,709	-12.3	33	16	1.2
400	31	7,598	-15.4	53	93	14.0	29	7,583	-17.9	38	11	1.2	31	7,460	-24.8		229	29.1	31	7,613	-17.8	40	72	5.8	31	7,607	-18.1	28	32	1.2
350	31	8,593	-22.3	47	90	14.2	29	8,568	-24.7		329	3.1	31	8,417	-32.2		229	33.6	31	8,597	-24.8	34	37	5.1	31	8,591	-25.2	26	51	2.7
300	31	9,707	-30.6	44	90	11.1	29	9,672	-33.2		319	5.2	31	9,486	-40.4		229	39.6	31	9,699	-33.1		7	2.1	31	9,693	-33.4	24	73	4.1
250	31	10,975	-41.0		99	11.7	29	10,927	-43.1		319	7.6	31	10,706	-48.8		227	45.5	31	10,953	-43.0		283	6.4	31	10,947	-43.3		90	2.9
200	31	12,451	-53.6		85	12.8	29	12,392	-54.8		306	8.7	31	12,153	-53.2		228	47.0	30	12,415	-54.9		283	8.5	31	12,412	-54.9		57	5.1
175	31	13,296	-60.8		79	11.8	29	13,233	-60.9		307	9.9	31	13,013	-53.2		229	41.8	30	13,255	-61.0		311	8.2	31	13,254	-60.7		64	4.7
150	31	14,236	-68.7		81	12.4	29	14,179	-66.2		334	8.7	31	14,004	-54.3		231	35.0	30	14,200	-66.5		12	5.4	31	14,201	-65.9		56	4.7
125	31	15,306	-76.5		93	12.0	28	15,272	-70.1		37	11.1	31	15,166	-56.3		231	24.9	30	15,291	-69.9		52	10.5	31	15,298	-69.4		59	9.1
100	30	16,577	-79.1		91	18.1	28	16,597	-69.3		63	11.7	31	16,577	-57.6		223	16.5	30	16,615	-70.7		74	20.4	31	16,626	-69.0		78	12.4
80	29	17,868	-71.6		90	31.7	27	17,945	-64.6		79	17.5	31	17,985	-57.3		209	5.4	29	17,952	-66.4		82	25.6	30	17,972	-65.3		88	17.3
70	29	18,663	-67.3		91	39.8	27	18,761	-63.2		83	21.6	31	18,831	-56.7		170	4.3	28	18,767	-63.3		80	28.4	30	18,791	-62.8		83	21.8
60	29	19,602	-63.1		89	44.1	27	19,714	-61.3		87	25.4	30	19,806	-56.0		118	4.9	28	19,718	-61.3		79	30.7	29	19,744	-60.9		88	27.2
50	29	20,737	-57.5		89	42.2	26	20,852	-58.8		89	30.9	30	20,968	-54.8		94	6.0	28	20,854	-58.9		82	34.8	29	20,884	-58.4		93	32.4
40	28	22,161	-53.6		94	15.9	26	22,258	-57.0		88	32.6	30	22,401	-52.7		85	7.2	27	22,261	-56.1		88	38.9	29	22,298	-55.2		96	36.3
30	27	24,021	-51.4		288	6.6	26	24,092	-53.5		88	40.2	30	24,269	-49.9		81	9.9	26	24,105	-51.9		85	36.3	29	24,150	-51.6		92	36.9
25	26	25,210	-50.0		262	9.5	23	25,268	-51.2		88	39.4	30	25,465	-48.3		82	10.9	26	25,295	-48.7		82	33.6	29	25,338	-49.7		91	37.3
20	25	26,676	-48.2		263	7.2	23	26,726	-48.7		86	42.7	30	26,942	-45.9		86	13.2	23	26,766	-46.5		79	32.1	28	26,807	-46.8		88	38.1
15	23	28,584	-46.1		278	3.7	23	28,631	-45.2		88	42.2	29	28,864	-43.7		90	13.4	12	28,691	-42.1		80	26.6	26	28,730	-43.6		87	38.3
10	20	31,303	-43.4		103	9.9	23	31,355	-42.0		89	43.9	25	31,607	-40.2		93	16.5	6	31,488	-38.2				23	31,474	-40.1		87	44.7
7	5	33,720	-43.2				21	33,783	-39.8		87	50.1	22	34,054	-36.7		100	20.8							21	33,953	-34.0		93	46.2
5							17	36,082	-36.6				18	36,424	-32.5										9	36,333	-29.6			

Standard pressure surface (mb.)	MIDLAND, TEXAS * 917 MB						MONTGOMERY, ALA. 1009 MB						NANTUCKET, MASS. 1013 MB						NASHVILLE, TENN. 995 MB						N. Y. INT. AP., IDLEWILD 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	874	21.3	70	152	3.5	31	61	22.7	94	345	.8	31	14	18.5	90	222	3.7	31	177	19.4	95	113	1.0	31	5	19.4	77	284	4.9
1000	31	112					31	141	23.3	89	303	1.7	31	121	18.4	83	292	6.2	31	132					31	127	19.3	71	289	6.4
950	31	563					31	592	23.7	72	299	3.9	31	557	17.3	70	265	11.3	31	580	21.5	73	260	3.7	31	571	17.4	67	294	9.7
900	31	1,035	23.6	53	166	9.3	31	1,063	20.9	71	276	6.0	31	1,022	14.4	67	270	12.6	31	1,045	18.8	70	285	5.8	31	1,028	14.3	68	286	10.7
850	31	1,533	21.2	51	189	17.5	31	1,556	17.7	71	261	7.2	31	1,503	11.3	67	269	14.6	31	1,534	15.9	65	287	7.6	31	1,510	11.6	65	285	12.8
800	31	2,056	17.7	54	186	9.7	31	2,073	14.3	71	264	6.6	31	2,008	8.6	61	269	18.3	31	2,047	13.6	49	297	7.6	31	2,015	8.8	60	283	15.3
750	31	2,604	13.7	60	166	5.2	31	2,610	11.3	63	265	7.0	31	2,533	5.6	55	271	19.6	31	2,589	10.9	44	303	7.6	31	2,553	6.1	55	281	18.5
700	31	3,183	9.7	61	112	4.7	31	3,190	8.2	58	276	6.2	31	3,102	3.0	48	270	20.8	31	3,161	7.8	39	309	9.1	31	3,111	3.4	46	280	20.2
650	31	3,791	5.4	66	99	5.6	31	3,795	5.3	46	291	5.1	31	3,692	.0	38	266	23.9	31	3,769	4.5	37	308	10.7	31	3,713	.7	37	281	22.7
600	31	4,444	1.2	62	121	5.8	31	4,449	1.8	39	293	4.9	31	4,336	- 3.5	32	267	27.8	31	4,416	.8	35	302	11.3	31	4,348	- 2.7	32	280	26.2
550	31	5,134	- 2.6	52	142	5.4	31	5,142	- 2.0	31	297	3.9	31	5,010	- 7.5		267	29.9	31	5,106	- 3.0		301	13.4	31	5,033	- 6.8		279	29.1
500	31	5,890	- 7.0	45	145	6.0	31	5,897	- 6.2		331	2.5	31	5,756	-12.2		266	34.0	31	5,858	- 7.4		304	15.7	31	5,771	-11.6	34	279	33.2
450	31	6,700	-11.7	37	133	6.8	30	6,712	-11.3		350	3.9	31	6,544	-17.4		268	37.3	31	6,669	-12.5		308	17.1	31	6,574	-17.1		277	35.9
400	31	7,599	-17.3	34	117	5.8	30	7,609	-17.7		352	6.2	31	7,428	-23.5		267	41.8	31	7,559	-18.7		309	18.8	31	7,445	-23.1		277	39.4
350	31	8,585	-24.3	31	91	6.8	29	8,593	-24.7		335	8.2	31	8,391	-30.7		267	45.1	31	8,540	-25.7		311	20.6	31	8,409	-30.3		277	44.3
300	31	9,690	-32.9	33	78	7.6	29	9,696	-33.0		340	9.5	31	9,466	-39.1		266	48.6	31	9,639	-34.1		316	22.9	31	9,487	-38.3		278	48.0
250	31	10,946	-42.9		54	7.8	29	10,952	-42.9		332	10.7	31	10,693	-47.4		269	55.4	31	10,888	-44.2		313	28.7	31	10,717	-47.5		281	57.1
200	31	12,414	-54.2		56	10.1	29	12,421	-54.2		329	12.4	31	12,146	-52.9		270	57.9	31	12,349	-54.8		321	28.6	31	12,167	-54.1		281	56.3
175	31	13,259	-60.0		51	10.5	29	13,266	-60.0		331	12.8	31	13,004	-54.7		268	52.1	31	13,193	-59.9		312	26.0	30	13,019	-55.4		277	53.2
150	31	14,209	-65.4		62	9.5	29	14,218	-65.0		347	12.2	31	13,987	-56.3		264	42.3	31	14,145	-64.3		313	25.6	30	13,997	-57.2		279	45.3
125	31	15,308	-69.3		71	8.2	28	15,317	-68.7		358	7.8	31	15,139	-58.0		267	32.2	31	15,253	-66.5		319	18.6	30	15,146	-58.5		277	33.6
100	31	16,639	-69.0		45	7.6	28	16,654	-67.7		33	5.4	31	16,545	-57.9		267	22.5	31	16,604	-65.9		321	9.1	29	16,547	-58.5		280	22.1
80	31	17,987	-65.3		76	11.8	28	18,015	-62.4		62	8.0	31	17,956	-55.8		253	10.5	31	17,968	-62.7		18	7.2	28	17,954	-56.4		274	10.7
70	31	18,815	-63.1		82	12.8	26	18,850	-60.1		72	10.7	31	18,806	-54.1		237	5.6	31	18,809	-59.6		43	5.8	28	18,820	-54.8		272	4.5
60	31	19,758	-60.4		84	15.0	26	19,811	-57.9		78	14.4	31	19,800	-53.1		183	3.7	30	19,769	-56.7		79	8.9	28	19,794	-53.6		107	3.1
50	30	20,904	-57.7		87	18.5	26	20,966	-55.6		88	20.2	31	20,977	-51.9		114	6.2	30	20,931	-54.4		90	11.5	28	20,971	-52.0		102	5.8
40	30	22,320	-55.3		89	24.7	26	22,396	-53.1		91	23.5	31	22,427	-50.5		102	8.9	28	22,372	-52.0		91	15.5	27	22,419	-50.3		102	8.5
30	30	24,168	-52.0		91	29.9	25	24,261	-50.3		93	29.1	31	24,312	-48.0		93	13.6	28	24,241	-50.0		89	18.5	24	24,311	-48.0		99	11.1
25	29	25,356	-49.4		90	29.1	25	25,457	-47.8		93	31.5	30	25,519	-46.1		87	15.5	26	25,439	-48.2		86	21.6	22	25,517	-46.4		95	12.8
20	28	26,825	-46.9		88	29.9	24	26,937	-45.6		89	31.1	29	27,012	-43.7		85	18.6	26	26,915	-46.0		88	25.3	18	26,999	-44.4		89	15.7
15	28	28,743	-44.0		84	34.6	19	28,857	-42.8		90	33.2	29	28,958	-40.4		88	22.5	23	28,840	-43.1		90	28.0	10	28,937	-41.7			
10	25	31,490	-39.4		85	40.4	9	31,629	-37.7				26	31,743	-35.6		96	20.6	16	31,601	-38.9		85	33.0						
7	20	33,960	-35.1		91	43.9							24	34,253	-30.9		88	20.6	12	34,108	-34.3		87	36.5						
5	16	36,301	-31.9		92	39.8							19	36,645	-26.7				10	36,460	-30.3									
4	10	37,868	-28.7																											

See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1963

Standard pressure surface (mb)	NOME, ALASKA 1007 MB						NORFOLK, VA. 1015 MB						NORTH PLATTE, NEBR. 919 MB						OAKLAND, CALIF.* 1014 MB						OKLAHOMA CITY, OKLA. 970 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	7	7.4	90	147	.8	31	9	21.1	85	228	2.5	31	848	17.3	87	102	2.9	31	6	13.8	84	276	3.1	31	392	22.0	81	146	4.9
1000	30	67			186	2.1	31	136	21.8	76	244	3.7	31	115					31	120	13.3	84	251	4.3	31	124					
950	30	489	5.2	86	211	3.9	31	581	20.4	68	270	6.6	31	558					31	566	17.5	50	267	6.0	31	575	24.5	65	183	11.3
900	30	928	3.1	85	211	6.8	31	1,048	17.1	67	276	7.4	31	1,025	19.0	76	139	4.9	31	1,018	20.0	25	299	7.4	31	1,048	23.6	53	208	15.9
850	30	1,391	1.9	81	215	9.3	31	1,534	14.3	66	274	9.3	31	1,517	19.4	59	209	4.1	31	1,509	18.5	21	284	6.2	31	1,545	20.5	52	228	11.3
800	30	1,879	.2	75	223	9.7	31	2,045	11.4	64	276	12.6	31	2,037	17.2	51	249	5.2	31	2,025	15.4	22	265	4.9	31	2,066	16.8	54	251	6.4
750	30	2,389	- 2.1	75	228	12.2	31	2,580	8.8	52	274	15.5	31	2,582	13.7	52	273	6.0	31	2,565	12.1	20	258	5.1	31	2,607	13.1	54	278	9.3
700	30	2,941	- 4.9	72	219	14.0	31	3,150	6.0	41	279	16.3	31	3,163	9.7	48	286	4.7	31	3,143	8.5	22	234	6.6	31	3,191	9.1	55	241	1.2
650	30	3,517	- 7.9	67	221	15.2	31	3,751	3.0	38	283	18.5	31	3,772	5.6	48	264	6.2	31	3,747	4.6	24	226	9.1	31	3,797	5.4	49	182	.2
600	30	4,140	-11.4	62	216	17.7	31	4,399	- .4	36	279	21.0	31	4,424	1.1	48	258	9.8	31	4,398	.2	25	221	10.5	31	4,451	1.6	42	166	.6
550	30	4,797	-15.5	57	225	18.3	31	5,083	- 4.3	33	274	22.1	31	5,111	- 3.6	51	266	11.8	31	5,080	- 4.5	25	223	12.4	31	5,140	- 2.5	40	208	1.7
500	30	5,515	-20.1	52	213	21.2	31	5,835	- 8.5		276	26.0	31	5,864	- 8.4	53	269	13.8	31	5,835	- 9.6	23	231	15.5	31	5,899	- 6.9	37	272	1.9
450	30	6,281	-25.4	52	228	24.1	31	6,641	-13.6		279	28.4	31	6,674	-13.3	49	279	16.5	31	6,634	-15.3	22	235	20.8	31	6,705	-11.9		283	1.4
400	30	7,134	-31.4	48	228	26.0	31	7,531	-19.9		277	32.2	31	7,561	-19.2	43	279	18.3	31	7,521	-21.8	23	236	24.7	31	7,605	-18.1		308	2.5
350	30	8,065	-38.3		231	31.3	31	8,508	-26.8		276	34.4	31	8,541	-26.3	37	277	23.7	31	8,490	-29.1	24	234	29.1	31	8,589	-25.1		327	5.1
300	30	9,109	-45.3		227	31.1	31	9,601	-35.2		275	37.3	31	9,636	-34.6	33	277	28.2	31	9,573	-37.7	24	232	35.4	31	9,692	-33.1		322	8.2
250	30	10,310	-50.0		225	32.6	31	10,844	-44.8		275	43.1	31	10,883	-44.5		277	34.2	31	10,805	-46.8		232	42.0	31	10,948	-43.0		323	11.3
200	30	11,772	-48.1		231	27.6	31	12,300	-55.0		279	49.7	31	12,341	-55.1		277	39.6	31	12,257	-54.1		229	47.2	31	12,414	-54.6		326	14.2
175	30	12,653	-47.6		236	23.9	31	13,143	-59.7		279	47.4	31	13,184	-59.7		280	40.6	31	13,110	-56.0		229	44.5	31	13,258	-60.2		326	12.8
150	30	13,671	-48.0		233	21.8	31	14,098	-62.4		285	37.1	31	14,139	-63.2		280	35.9	31	14,083	-58.9		231	39.0	31	14,208	-65.5		333	9.7
125	30	14,872	-47.9		235	17.5	31	15,219	-63.3		281	24.9	31	15,252	-65.5		283	24.1	31	15,222	-60.7		231	28.6	31	15,306	-68.6		340	8.2
100	30	16,344	-47.7		226	10.7	31	16,590	-62.9		284	14.6	30	16,610	-64.1		290	12.0	31	16,606	-61.8		223	13.4	31	16,644	-67.7		356	4.3
80	30	17,816	-47.8		223	10.3	31	17,978	-59.3		296	4.5	30	17,987	-61.0		344	6.2	31	17,992	-60.6		171	4.7	30	17,994	-63.9		58	8.0
70	30	18,699	-47.7		223	7.2	31	18,822	-56.9		68	1.9	30	18,824	-59.4		41	4.5	31	18,834	-59.3		121	5.8	30	18,824	-61.3		70	9.5
60	27	19,721	-47.7		220	4.9	31	19,801	-54.9		90	8.9	30	19,793	-56.8		68	7.4	31	19,795	-57.6		94	9.1	30	19,780	-58.3		74	11.1
50	27	20,925	-47.6		205	2.5	31	20,970	-53.2		86	13.6	30	20,956	-54.6		77	7.8	31	20,951	-55.9		90	10.7	29	20,933	-55.8		84	13.0
40	26	22,401	-47.3		161	1.9	30	22,416	-51.0		91	17.9	29	22,392	-52.0		82	9.5	31	22,379	-53.5		88	12.4	28	22,363	-53.8		89	18.3
30	26	24,306	-46.4		99	2.1	28	24,302	-48.1		91	21.2	29	24,269	-49.1		87	12.0	31	24,238	-51.3		91	16.1	26	24,226	-50.1		87	24.1
25	26	25,518	-45.6		95	3.5	23	25,510	-46.4		92	21.0	29	25,471	-47.4		85	14.8	31	25,428	-49.4		91	18.5	25	25,423	-48.3		88	25.1
20	24	27,001	-44.7		81	3.7	22	26,997	-44.0		87	22.9	29	26,953	-45.4		85	15.9	30	26,897	-47.3		91	21.0	25	26,899	-46.1		88	26.8
15	21	28,927	-42.7		86	4.7	9	28,935	-41.0				27	28,883	-43.0		86	20.0	30	28,809	-45.0		88	23.3	20	28,826	-43.1		92	28.0
10	10	31,756	-38.4										27	31,642	-39.2		85	20.8	29	31,541	-40.7		91	25.8	10	31,585	-39.8			
7													26	34,118	-35.0		84	22.3	25	34,016	-36.5		94	27.4						
5													21	36,477	-31.4				18	36,369	-31.9		90	33.6						
4																			9	37,987	-28.1									

Standard pressure surface (mb)	OLYMPIA, WASH. 1011 MB						OMAHA, NEBR. 969 MB						PEORIA, ILL. 994 MB						PITTSBURGH, PA. 975 MB						PONAPE, CAROLINE IS. 1004 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	58	11.7	93	206	2.1	31	403	18.7	87	98	1.7	31	200	16.4	90	147	.8	31	353	14.7	86	272	1.6	31	39	24.6	95	144	2.5
1000	31	152	13.2	81	202	1.9	31	131					31	146					31	138					31	73	25.2	91	149	2.3
950	31	584	13.0	73	163	.6	31	573	19.7	77	139	1.0	31	588	19.2	72	249	2.7	31	577	16.6	78	270	4.9	31	520	24.2	80	131	1.7
900	31	1,040	12.4	62	7	.8	31	1,040	19.0	64	250	4.9	31	1,052	17.2	65	279	6.2	31	1,034	14.3	75	282	8.4	31	1,000	21.3	82	108	2.5
850	31	1,518	10.8	53	230	.8	31	1,530	17.3	55	270	8.2	31	1,539	15.0	54	293	10.1	31	1,515	11.4	74	289	11.1	31	1,495	18.6	82	98	4.9
800	31	2,021	8.6	44	226	2.3	31	2,046	14.9	50	285	9.5	31	2,051	12.6	50	304	13.6	31	2,021	9.2	60	288	14.0	31	2,015	15.8	81	98	5.6
750	31	2,550	5.6	40	222	5.4	31	2,586	11.7	49	299	12.0	31	2,589	9.9	49	302	16.9	31	2,555	7.3	46	290	17.1	31	2,558	13.1	78	96	7.4
700	31	3,113	2.2	38	219	7.0	31	3,164	8.1	51	302	14.0	31	3,161	6.8	45	300	19.4	31	3,120	5.0	38	290	20.0	31	3,141	10.1	73	93	9.5
650	31	3,702	- 1.5	37	214	8.5	31	3,767	4.5	48	293	15.5	31	3,762	3.5	37	299	21.2	31	3,718	1.9	35	290	24.3	31	3,754	6.7	73	93	9.9
600	31	4,341	- 5.6	33	214	10.9	31	4,421	.7	45	292	17.1	31	4,363	- 2.0		292	26.8	31	4,363	- 2.0		292	26.8	31	4,410	2.9	73	91	13.4
550	31	5,007	-10.2		215	12.6	31	5,104	- 3.7	42	290	17.1	31	5,095	- 4.0	37	299	23.6	31	5,042	- 5.9		291	29.3	31	5,106	- 1.0	68	91	14.0
500	31	5,746	-15.1		216	14.8	31	5,862	- 8.2	43	287	22.1	31	5,848	- 8.8	34	298	27.8	31	5,791	-10.7		290	32.6	31	5,867	- 5.1	62	88	16.1
450	31	6,526	-21.0		221	16.5	31	6,664	-13.5	41	290	22.7	31	6,651	-14.0	34	298	29.5	31	6,587	-16.1		289	34.2	31	6,685	-10.0	61	90	15.0
400	31	7,393	-27.7		220	18.6	31	7,559	-19.6	43	297	27.6	31	7,542	-19.9		298	32.6	31	7,471	-22.5		289	37.9	31	7,590	-15.4	49	94	14.6
350	31	8,338	-35.1		221	21.8	31	8,538	-26.5	40	298	33.2	31	8,519	-26.9		303	35.4	31	8,439	-29.3		292	42.9	31	8,585	-22.3	46	96	13.0
300	31	9,395	-42.8		226	25.1	31	9,633	-34.9		297	35.4	31	9,612	-35.2		301	41.6	31	9,522	-37.1		292	47.8	31	9,699	-30.6	43	97	10.5
250	31	10,606	-49.0		225	30.5	31	10,880	-44.7		295	42.9	31	10,856	-44.8		303	48.4	31	10,760	-45.8		293	58.7	31	10,968	-40.8		95	11.1
200	31	12,062	-50.7		226	29.5	31	12,337	-55.5		294	49.5	31	12,314	-54.8		302	53.6	31	12,216	-54.1		293	63.1	31	12,445	-53.6		90	11.7
175	31	12,932	-50.5		226	26.2	31	13,180	-59.8		294	50.3	31	13,159	-58.8		299	50.7	31	13,068	-56.4		293	58.3	31	13,289	-60.9		91	13.2
150	31	13,935	-51.3		228	23.1	31	14,136	-62.6		296	41.2	31	14,120	-61.6		302	45.1	31	14,041	-58.9		295	47.2	31	14,230	-68.8		89	13.8
125	31	15,114	-53.4		222	17.9	31	15,256	-64.1		298	29.9	31	15,245	-62.8		302	32.2	30	15,182	-60.4		294	34.8	31	15,298	-76.8		86	16.1
100	31	16,546	-54.7		223	10.9	31	16,622	-63.4		305	18.5	31	16,618	-62.3		308	18.1	30	16,573	-60.6		291	23.3	30	16,566	-79.4		87	20.0
80	31	17,973	-54.7		214	4.7	31	18,000	-61.0		331	8.5	31	18,003	-59.9		329	10.5	30	17,969	-58.2		299	9.7	29	17,859	-71.5		91	29.5
70	31	18,830	-54.4		179	2.5	31	18,841	-58.8		11	7.4	31	18,854	-57.6		359	6.4	30	18,818	-56.6		309	4.3	29	18,652	-68.4		88	39.0
60	31	19,816	-53.8		129	2.9	31	19,806	-56.6		54	7.2	30	19,816	-55.4		40	7.6	30	19,795	-54.6		33	1.9	29	19,588	-63.3		86	46.8
50	31	20,989	-53.0		96	2.5	31	20,969	-54.2		74	6.6	30	20,985	-53.0		70	6.8	30	20,967	-52.6		104	7.0	28	20,728	-56.6		89	40.4
40	30	22,426	-51.7		77	5.4	31	22,409	-51.4		81	8.7	30	22,431	-50.9		85	7.4	30	22,415	-50.8		95	9.5	27	22,154	-53.5		81	14.2
30	29	24,302	-48.9		61	6.2	30	24,288	-49.1		82	9.3	30	24,313	-48.2		84	11.3	30	24,297	-48.5		90	12.0	26	24,010	-51.4		269	8.5
25	26	25,500	-47.1		74	8.2	30	25,489	-47.2		86	12.2	30	25,518	-47.0		87	13.0	30	25,501	-47.0		92	14.0	24	25,197	-49.8		276	11.7
20	20	26,985	-44.8		73	7.6	28	26,968	-45.0		89	13.8	30	27,002	-44.9		83	16.1	27	26,982	-45.3		92	15.2	22	26,668	-48.0		282	10.9
15	9	28,903	-42.0				23	28,892	-42.8		87	11.5	30	28,935	-42.2		85	20.2	27	28,913	-42.7		89	17.3	19	28,575	-45.9		291	7.8
10							9	31,682	-38.9				28	31,711	-38.2		85	21.6	26	31,671	-38.8		92	19.8	14	31,283	-44.0			
7													26	34,192	-34.1		79	23.9	25	34,133	-36.6		86	22.0						
5													24	36,553	-30.2		88	24.7	24	36,477	-33.2									

Standard pressure surface (mb)	PORTLAND, ME. 1011 MB						RAPID CITY, S. DAK. 906 MB						ST. CLOUD, MINN. 978 MB						ST. PAUL IS., ALASKA 1012 MB						SALEM, OREG. 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	20	15.4	89	272	1.7	31	966	17.2	67	298	.6	31	316	15.1	92	184	1.0	31	10	7.2	93	231	6.2	31	61	12.1	94	218	1.0
1000	31	110	15.9	80	271	3.5	31	115					31	126					31	110	7.2	91	231	7.8	31	152	13.8	83	311	.8
950	31	546	14.9	72	286	6.6	31	557					31	566	17.6	81	214	4.9	31	535	6.3	88	237	13.2	31	585	13.6	78	1	4.1
900	31	1,003	12.4	71	280	8.4	31	1,026	18.2	63	253	.6	31	1,025	16.3	73	248	5.1	31	974	5.0	81	241	13.0	31	1,041	12.8	71	341	3.1
850	31	1,481	9.7	69	278	10.7	31	1,518	18.9	52	232	5.6	31	1,510	13.8	66	296	7.2	31	1,440	3.8	74	245	13.2	31	1,521	11.5	60	281	2.9
800	31	1,982	6.8	67	276	13.0	31	2,037	16.7	47	237	5.2	31	2,020	11.4	58	306	10.1	31	1,932	2.1	69	245	12.8	31	2,025	9.6	48	238	2.7
750	31	2,508	4.1	58	274	16.1	31	2,576	13.3	47	262	6.6	31	2,555	8.5	55	306	13.0	31	2,453	- .2	63	248	15.7	31	2,556	6.4	46	233	5.2
700	31	3,069	1.2	52	273	18.6	31	3,160	9.2	50	271	8.5	31	3,124	5.2	49	307	17.3	31	3,001	- 2.7	56	246	16.1	31	3,122	3.1	44	226	8.0
650	31	3,656	- 1.9	45	269	22.1	31	3,763	4.6	52	274	10.5	31	3,720	1.9	44	307	21.8	31	3,585	- 5.5	54	244	18.6	31	3,713	- .9	44	220	10.9
600	31	4,295	- 5.4	40	271	25.1	31	4,415	- .3	50	277	13.4	31	4,338	- 2.1	41	305	23.3	31	4,211	- 8.7	49	242	20.8	31	4,353	- 5.0	41	218	13.8
550	31	4,965	- 9.5	39	270	25.3	31	5,095	- 5.2	50	275	17.1	31	5,045	- 6.6	37	303	24.9	31	4,876	-12.6	47	242	22.5	31	5,023	- 9.5	37	218	15.3
500	31	5,705	-14.2	37	268	29.1	31	5,846	-10.2	44	282	21.4	31	5,792	-11.4	36	301	28.6	31	5,603	-17.0	47	245	25.1	31	5,761	-14.4	32	222	17.9
450	31	6,485	-19.7	35	267	30.9	31	6,647	-15.2	34	276	24.3	31	6,588	-16.6		300	32.4	31	6,380	-22.2	44	247	27.0	31	6,545	-20.1		225	20.8
400	31	7,361	-26.3		266	34.6	31	7,531	-21.0	33	273	28.2	31	7,468	-22.7		298	37.3	31	7,242	-28.2	45	246	25.6	31	7,414	-26.6		226	25.3
350	31	8,313	-33.4		265	38.5	31	8,503	-28.2		271	33.8	31	8,435	-29.4		298	45.1	31	8,185	-35.3	43	246	27.8	31	8,364	-33.7		227	31.5
300	31	9,378	-41.0		262	42.3	31	9,590	-36.6		270	42.2	31	9,518	-37.4		297	53.0	31	9,242	-43.0		245	29.5	31	9,427	-41.6		229	35.7
250	31	10,597	-48.0		264	48.8	31	10,828	-46.2		268	50.5	31	10,754	-46.5		295	62.2	31	10,449	-50.7		241	34.6	31	10,641	-49.2		229	40.8
200	30	12,053	-51.4		265	45.6	31	12,278	-55.7		270	57.7	31	12,206	-54.6		293	65.9	31	11,890	-52.4		250	33.0	31	12,092	-51.4		227	38.7
175	30	12,919	-52.2		265	42.7	31	13,122	-59.0		270	54.2	31	13,057	-56.8		292	60.0	31	12,756	-51.2		251	30.5	31	12,961	-50.9		229	34.2
150	29	13,918	-53.4		262	41.0	31	14,082	-61.3		273	45.3	31	14,030	-58.1		296	50.9	30	13,757	-51.5		252	26.8	31	13,961	-52.3		231	26.4
125	29	15,087	-54.8		263	31.7	31	15,211	-62.1		275	29.5	31	15,174	-59.3		301	35.7	30	14,941	-51.4		251	20.0	31	15,134	-54.5		226	20.8
100	28	16,516	-54.5		263	19.2	31	16,591	-61.8		279	15.7	31	16,571	-59.4		306	23.7	30	16,389	-51.0		250	15.5	31	16,557	-55.8		226	14.0
80	28	17,947	-53.4		262	9.3	30	17,977	-59.4		307	7.2	31	17,974	-57.6		312	13.2	29	17,838	-50.3		239	11.1	31	17,978	-55.5		206	5.8
70	28	18,810	-52.4		240	5.8	30	18,821	-57.7		357	5.2	30	18,822	-56.1		329	10.5	28	18,725	-50.1		239	8.7	31	18,832	-55.1		185	3.5
60	28	19,808	-51.4		181	2.9	30	19,792	-56.4		39	5.2	30	19,800	-54.9		348	7.4	28	19,723	-49.8		233	6.2	31	19,816	-54.6		114	4.1
50	28	20,995	-50.4		121	4.5	30	20,954	-54.5		62	7.0	30	20,969	-53.3		16	5.8	28	20,917	-49.4		221	3.9	31	20,985	-53.8		115	4.7
40	27	22,450	-49.2		107	6.2	30	22,392	-51.5		72	7.2	30	22,414	-50.7		62	6.2	28	22,381	-48.7		206	1.9	29	22,421	-52.1		85	5.6
30	26	24,345	-47.2		97	8.9	30	24,272	-48.7		79	8.2	29	24,303	-48.3		75	6.6	27	24,280	-47.4		152	2.1	29	24,296	-49.3		81	6.6
25	23	25,558	-45.2		93	9.7	29	25,471	-47.1		78	8.7	28	25,503	-46.7		78	7.2	27	25,488	-46.3		110	2.7	26	25,492	-47.4		87	8.4
20	15	27,045	-42.9		85	11.7	28	26,953	-44.9		83	8.9	26	26,996	-44.4		76	8.0	23	26,981	-44.9		127	4.3	24	26,973	-45.1		86	8.9
15	7	29,009	-39.7				24	28,884	-42.1		85	10.9	15	28,922	-42.0		77	10.7	14	28,904	-42.6		127	4.9	22	28,908	-42.2		87	8.7
10							5	31,612	-39.5				5	31,693	-39.5				5	31,690	-38.8				8	31,684	-37.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	SALT LAKE CITY, UTAH 872 MB					SAN ANTONIO, TEXAS 988 MB					SAN DIEGO, CALIF. 999 MB					SAN JUAN, P. R. 1014 MB					SANTA MONICA, CALIF. 1009 MB				
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind
					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed
SURFACE	31	1,288	20.2	52	160 / 8.2	31	243	24.1	85	170 / 2.1	31	124	18.6	88	316 / 1.6	31	6	25.9	85	110 / 4.5	31	38	18.1	86	34 / .6
1000	31	89				31	134				31	113			306 / 1.7	31	130	25.5	83	103 / 9.1	31	116	17.8	87	128 / .6
950	31	538				31	585	21.9	83	190 / 10.5	31	554	18.8	65	9 / .6	31	580	22.9	82	104 / 12.8	31	560	18.6	68	105 / 3.9
900	31	1,015				31	1,054	20.3	69	188 / 13.8	31	1,021	22.1	32	303 / 1.6	31	1,052	20.2	78	103 / 14.0	31	1,022	21.1	30	118 / 2.3
850	31	1,512	22.3	42	161 / 12.6	31	1,547	18.5	60	156 / 10.3	31	1,517	21.0	29	250 / 2.9	31	1,544	17.4	75	101 / 14.0	31	1,516	20.3	24	230 / 2.9
800	31	2,037	20.0	39	176 / 13.2	31	2,065	15.4	60	131 / 6.6	31	2,039	18.1	35	223 / 4.7	31	2,061	14.9	67	99 / 11.8	31	2,036	17.5	26	228 / 6.4
750	31	2,592	16.2	39	201 / 11.3	31	2,605	12.7	57	118 / 5.2	31	2,582	14.3	39	194 / 5.6	31	2,600	12.2	57	101 / 11.5	31	2,580	14.2	29	215 / 9.3
700	31	3,172	11.8	43	221 / 9.9	31	3,185	8.7	52	107 / 3.9	31	3,168	10.2	44	186 / 7.0	31	3,182	8.9	51	98 / 9.1	31	3,162	10.4		205 / 8.9
650	31	3,787	6.6	51	225 / 6.9	31	3,793	5.2	46	96 / 4.5	31	3,771	6.0	43	183 / 6.8	31	3,785	5.3	45	104 / 8.0	31	3,770	6.3		198 / 8.5
600	31	4,438	1.0	59	215 / 11.3	31	4,445	1.5	39	104 / 4.7	31	4,431	1.8	40	191 / 7.8	31	4,442	1.6	43	94 / 6.8	31	4,427	2.0		199 / 9.1
550	31	5,127	- 4.6	55	220 / 12.0	31	5,133	- 2.5	36	99 / 6.6	31	5,120	- 2.2	35	197 / 7.0	31	5,131	- 2.2	39	105 / 6.4	31	5,115	- 2.5		217 / 8.2
500	31	5,875	- 9.8	55	229 / 14.0	31	5,892	- 7.0	33	103 / 7.8	31	5,881	- 6.6		218 / 7.2	31	5,890	- 6.3	36	87 / 4.9	31	5,874	- 7.3		222 / 10.3
450	31	6,680	-14.9	41	227 / 18.3	30	6,702	-12.1		92 / 8.5	31	6,691	-12.1		223 / 10.1	31	6,700	-11.2		76 / 4.7	31	6,680	-12.7		228 / 13.2
400	31	7,564	-20.4		236 / 22.7	30	7,598	-18.1		86 / 10.5	31	7,590	-18.5		226 / 12.0	31	7,602	-17.3		71 / 3.9	31	7,576	-19.1		229 / 16.1
350	31	8,539	-27.4		237 / 28.0	30	8,581	-25.4		75 / 12.8	31	8,571	-25.8		226 / 15.0	31	8,588	-24.6		87 / 3.9	31	8,555	-26.6		227 / 19.0
300	31	9,631	-35.7		235 / 34.4	30	9,681	-33.9		68 / 15.7	31	9,670	-34.1		219 / 19.0	31	9,691	-33.1		89 / 2.5	31	9,649	-35.2		225 / 23.5
250	31	10,873	-45.3		233 / 43.5	30	10,933	-43.7		65 / 18.5	31	10,921	-43.6		217 / 24.9	31	10,946	-43.4		124 / 3.5	31	10,895	-44.3		220 / 29.7
200	31	12,330	-54.6		233 / 48.4	30	12,397	-54.4		63 / 19.8	31	12,388	-53.9		213 / 28.0	31	12,408	-55.2		125 / 4.1	31	12,360	-54.1		218 / 35.7
175	31	13,176	-58.9		237 / 47.6	30	13,242	-59.9		60 / 17.5	31	13,234	-59.1		213 / 28.7	31	13,248	-61.1		96 / 4.5	31	13,206	-59.0		217 / 35.5
150	31	14,136	-61.6		242 / 39.2	30	14,192	-65.3		69 / 15.7	31	14,189	-64.0		216 / 22.5	31	14,193	-66.8		95 / 5.2	31	14,163	-63.4		222 / 29.1
125	31	15,260	-63.6		242 / 23.5	30	15,289	-69.3		71 / 13.6	31	15,296	-67.4		219 / 15.0	31	15,282	-71.1		84 / 8.0	31	15,273	-66.3		223 / 22.3
100	31	16,628	-63.3		230 / 10.1	30	16,621	-68.2		61 / 9.9	31	16,639	-66.7		190 / 3.7	30	16,596	-71.7		82 / 17.5	31	16,624	-65.9		218 / 8.5
80	29	18,006	-60.9		230 / 4.5	30	17,969	-65.3		74 / 13.0	30	17,991	-64.0		102 / 8.7	30	17,929	-66.6		84 / 29.5	31	17,985	-63.6		103 / 7.0
70	27	18,844	-59.7		96 / 1.4	30	18,792	-62.9		84 / 14.8	30	18,817	-61.6		96 / 12.2	30	18,738	-64.1		87 / 35.0	31	18,815	-61.4		97 / 9.3
60	27	19,808	-57.6		76 / 6.2	30	19,741	-60.4		83 / 17.7	30	19,774	-59.1		91 / 13.6	30	19,689	-62.0		90 / 36.9	31	19,771	-58.8		90 / 12.4
50	25	20,963	-55.8		78 / 8.0	30	20,883	-58.2		85 / 23.7	30	20,923	-56.6		90 / 17.1	30	20,823	-59.3		92 / 38.5	31	20,922	-56.3		91 / 15.9
40	24	22,391	-53.1		80 / 8.2	29	22,296	-55.5		87 / 28.9	30	22,346	-54.2		89 / 21.8	29	22,231	-56.1		91 / 37.5	30	22,347	-54.0		88 / 19.0
30	23	24,259	-50.1		86 / 10.5	27	24,148	-51.5		90 / 32.6	28	24,202	-51.5		90 / 25.4	28	24,077	-51.3		94 / 31.3	30	24,205	-51.2		90 / 23.7
25	21	25,450	-48.5		88 / 10.9	27	25,336	-49.7		90 / 34.0	27	25,389	-49.6		90 / 26.4	28	25,269	-48.5		93 / 28.0	30	25,394	-50.1		90 / 25.8
20	19	26,926	-46.4		91 / 14.6	25	26,801	-47.3		86 / 36.5	23	26,858	-47.6		90 / 29.7	27	26,747	-45.7		90 / 25.4	28	26,864	-47.7		90 / 24.3
15	12	28,859	-43.5			11	28,705	-43.0			16	28,771	-44.9		91 / 28.6	25	28,673	-42.9		87 / 26.6	23	28,778	-44.8		90 / 31.7
10																23	31,430	-38.3		88 / 34.4	13	31,503	-41.0		
7																17	33,876	-36.6		88 / 39.8					
5																6	36,193	-35.6							

Standard pressure surface (mb.)	SAULT STE. MARIE, MICH. 989 MB					SHEMYA, ALASKA 1010 MB					SHREVEPORT, LA.* 1007 MB					SPOKANE, WASH. 933 MB					SWAN ISLAND, W. I. 1012 MB				
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind
					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed
SURFACE	31	221	12.0	93	10 / 3.3	31	38	8.0	94	251 / 5.2	31	79	24.2	86	194 / 4.3	31	722	14.5	59	151 / 2.7	31	10	26.9	85	91 / 7.2
1000	31	126				31	118			250 / 6.2	31	144	24.5	82	203 / 6.0	31	125				31	113	26.5	83	89 / 8.2
950	31	557	13.5	74	323 / 4.3	31	545	7.6	84	264 / 12.0	31	598	24.4	64	229 / 11.1	31	565				31	566	23.7	81	93 / 12.0
900	31	1,014	11.6	64	321 / 6.2	31	988	6.9	76	276 / 11.7	31	1,069	21.6	65	224 / 7.0	31	1,025	17.8	49	183 / 3.1	31	1,037	20.9	74	99 / 13.6
850	31	1,490	9.1	62	314 / 9.9	31	1,457	5.1	73	282 / 10.7	31	1,563	18.6	62	230 / 3.1	31	1,513	15.6	46	203 / 4.5	31	1,531	18.2	68	101 / 14.8
800	31	1,990	6.5	56	310 / 14.6	31	1,951	3.6	68	281 / 12.4	31	2,081	15.2	59	278 / 1.4	31	2,023	11.9	48	227 / 5.2	31	2,048	15.4	59	100 / 15.2
750	31	2,517	4.3	46	307 / 16.1	31	2,474	1.4	66	284 / 13.6	31	2,622	12.0	52	285 / .6	31	2,554	7.8	51	222 / 5.4	31	2,591	12.6	55	97 / 14.6
700	31	3,077	1.8	38	308 / 18.5	31	3,027	- 1.0	58	281 / 14.6	31	3,200	8.3	49	99 / .2	31	3,125	3.9	51	219 / 7.2	31	3,171	9.7	47	100 / 14.0
650	31	3,667	- 1.4		309 / 21.6	31	3,608	- 3.8	55	277 / 15.7	31	3,808	4.8	46	48 / 1.6	31	3,715	- .2	48	233 / 11.3	31	3,777	6.2	41	101 / 13.4
600	31	4,305	- 4.9		308 / 24.5	31	4,244	- 7.1	51	276 / 17.9	31	4,457	1.1	41	62 / 2.9	31	4,359	- 4.3	43	234 / 15.3	31	4,434	2.9	38	103 / 14.4
550	31	4,980	- 9.0		308 / 26.4	31	4,913	-10.7	49	275 / 20.0	31	5,149	- 2.4	29	73 / 2.5	31	5,030	- 8.9	39	235 / 18.5	31	5,124	- 1.4	35	105 / 12.4
500	31	5,716	-14.1		305 / 29.1	31	5,646	-15.2	45	273 / 22.1	31	5,904	- 6.7	27	67 / 3.5	31	5,770	-14.2	34	233 / 20.8	31	5,886	- 6.0	33	101 / 9.9
450	31	6,502	-19.6		303 / 31.9	31	6,427	-20.8	40	270 / 23.9	31	6,715	-11.8	23	68 / 5.4	31	6,550	-19.8		233 / 22.7	31	6,695	-11.4	31	100 / 9.7
400	31	7,372	-25.9		302 / 36.1	31	7,295	-27.1	40	269 / 25.3	31	7,611	-17.8	22	63 / 5.8	31	7,424	-26.4	34	234 / 25.8	31	7,597	-17.1	30	106 / 7.4
350	31	8,324	-33.2		300 / 38.7	31	8,243	-34.4	40	273 / 27.4	31	8,596	-25.0	21	51 / 7.6	31	8,374	-33.7		236 / 31.5	31	8,584	-24.4		79 / 4.9
300	31	9,389	-41.3		303 / 45.1	31	9,303	-42.3		275 / 32.2	31	9,698	-33.4	20	38 / 8.5	31	9,436	-42.1		236 / 36.1	31	9,688	-32.9		41 / 3.9
250	31	10,604	-49.1		301 / 54.4	31	10,513	-50.1		271 / 36.7	31	10,951	-43.3		32 / 11.3	31	10,649	-49.6		236 / 42.9	31	10,944	-43.0		357 / 7.2
200	31	12,054	-52.1		300 / 59.4	31	11,955	-52.6		272 / 35.2	30	12,419	-54.2		39 / 10.7	31	12,099	-51.9		235 / 39.2	31	12,408	-55.0		332 / 8.0
175	31	12,918	-52.3		300 / 52.3	31	12,819	-51.5		267 / 32.8	30	13,264	-60.1		49 / 9.7	31	12,966	-51.2		235 / 35.4	31	13,248	-61.6		346 / 7.4
150	31	13,912	-53.7		301 / 45.5	31	13,818	-52.2		270 / 28.0	29	14,212	-65.4		29 / 10.9	31	13,966	-52.6		238 / 25.6	31	14,188	-67.8		7 / 5.6
125	31	15,080	-54.8		302 / 35.9	30	14,991	-52.7		267 / 23.7	29	15,310	-69.1		58 / 9.3	31	15,137	-54.7		235 / 20.0	31	15,273	-71.5		70 / 9.9
100	31	16,505	-55.0		303 / 25.6	30	16,431	-52.8		268 / 16.5	28	16,642	-67.9		50 / 5.4	31	16,561	-55.7		234 / 12.6	31	16,585	-72.0		88 / 19.8
80	31	17,932	-54.3		308 / 14.8	28	17,869	-52.2		273 / 11.5	27	17,991	-64.0		73 / 9.3	31	17,984	-55.3		229 / 6.2	31	17,908	-68.2		88 / 28.4
70	31	18,795	-53.5		310 / 9.5	28	18,736	-51.7		273 / 7.8	27	18,822	-61.5		81 / 11.5	31	18,837	-55.1		203 / 1.4	31	18,720	-65.1		88 / 33.0
60	31	19,784	-52.2		323 / 5.6	27	19,733	-51.3		268 / 4.7	27	19,774	-59.0		87 / 13.0	31	19,822	-54.3		90 / 1.9	31	19,662	-62.5		89 / 38.3
50	31	20,968	-50.9		354 / 2.9	26	20,919	-50.5		260 / 2.5	27	20,924	-56.5		88 / 18.1	31	20,994	-53.2		91 / 3.7	31	20,794	-59.9		92 / 41.8
40	30	22,425	-49.2		39 / 3.1	26	22,377	-49.7		216 / 2.1	27	22,347	-54.2		90 / 24.1	30	22,437	-51.4		66 / 4.9	31	22,199	-56.5		97 / 40.0
30	28	24,326	-47.1		78 / 6.0	26	24,267	-47.8		103 / 2.1	26	24,202	-51.3		91 / 27.4	28	24,321	-48.3		74 / 8.4	30	24,045	-51.7		98 / 31.1
25	28	25,538	-45.6		83 / 8.0	26	25,475	-46.3		85 / 3.5	26	25,392	-49.1		91 / 29.1	28	25,526	-46.6		80 / 8.4	29	25,234	-48.6		96 / 26.0
20	27	27,033	-43.5		70 / 8.0	25	26,959	-44.7		95 / 6.4	25	26,864	-46.3		88 / 32.2	20	27,004	-43.9		80 / 7.8	27	26,709	-46.4		93 / 23.9
15	26	28,988	-40.9		68 / 11.1	18	28,893	-42.3			23	28,788	-43.5		85 / 35.5	6	28,957	-40.8			20	28,625	-43.2		85 / 25.1
10	26	31,774	-36.7		85 / 14.0						21	31,544	-38.4		88 / 41.6						6	31,370	-40.7		
7	23	34,258	-33.4		84 / 15.7						15	34,029	-34.5		88 / 42.7										
5	18	36,609	-30.4								9	36,405	-30.5												

Standard pressure surface (mb.)	TAMPA, FLA. 1016 MB					TATOOSH IS., WASH.* 1014 MB					TOPEKA, KANS. 984 MB					TRUK, CAROLINE IS. 1002 MB					TUCSON, ARIZ. 924 MB				
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	Number of observations	Dynamic height	Temperature	Relative humidity	Wind
					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed					Direction / Speed
SURFACE	31	[illegible]	24.5	90	67 / 2.7	31	31	12.6	96	190 / 7.4	31	269	20.9	82	86 / 1.0	31	2	26.3	89	233 / 1.7	31	789	23.4	73	150 / 5.1
1000	31	145	25.0	82	102 / 2.3	31	151	12.3	94	202 / 7.4	31	128				31	78	26.4	87	227 / 1.7	31	93			
950	31	594	23.1	75	213 / 2.1	31	581	12.2	77	245 / 6.8	31	577	22.7	67	196 / 6.6	31	525	24.2	83	229 / 1.7	31	543			
900	31	1,068	20.4	71	249 / .8	31	1,035	11.5	60	245 / 4.7	31	1,047	21.4	60	228 / 11.7	31	1,004	21.6	82	217 / 1.4	31	1,022	24.2	63	149 / 5.8
850	31	1,560	17.4	68	53 / .4	31	1,513	9.9	56	226 / 1.6	31	1,541	18.6	60	251 / 12.0	31	1,500	18.9	81	165 / 1.0	31	1,522	21.7	61	140 / 2.5
800	31	2,077	14.4	63	125 / .8	31	2,015	7.5	52	225 / 1.4	31	2,059	15.7	49	264 / 10.9	31	2,019	16.2	79	108 / 1.7	31	2,046	18.1	64	123 / 2.1
750	31	2,614	11.3	60	178 / .8	31	2,539	4.4	46	201 / 2.9	31	2,600	12.5	47	279 / 9.9	31	2,565	13.3	77	89 / 4.7	31	2,591	14.3	67	153 / 3.1
700	31	3,195	8.2	54	206 / 1.4	31	3,102	1.2	41	211 / 4.7	31	3,180	8.8	46	287 / 8.5	31	3,146	10.2	75	85 / 6.2	31	3,176	10.4	68	151 / 5.1
650	31	3,800	4.7	51	251 / 1.7	31	3,687	- 2.4	36	208 / 5.6	31	3,786	5.0	47	282 / 9.9	31	3,761	6.7	71	98 / 8.4	31	3,784	6.2	68	150 / 6.0
600	31	4,453	1.2	46	278 / 1.2	31	4,325	- 6.2	35	214 / 6.6	31	4,439	1.0	47	287 / 11.5	31	4,415	3.2	73	104 / 9.9	31	4,443	1.9	66	154 / 5.4
550	31	5,142	- 2.6	40	320 / 1.0	31	4,989	-10.8	35	219 / 6.8	31	5,126	- 3.1	43	283 / 11.8	31	5,112	- .8	70	108 / 12.0	31	5,133	- 2.4	62	156 / 5.1
500	31	5,900	- 7.0	36	66 / 1.4	31	5,727	-15.7	32	218 / 7.4	31	5,883	- 7.4	39	283 / 13.6	31	5,873	- 5.0	64	105 / 12.0	31	5,893	- 6.6	51	171 / 3.3
450	31	6,709	-12.1	34	46 / 1.9	31	6,500	-21.5	31	216 / 8.9	31	6,689	-12.7	34	283 / 15.3	31	6,693	- 9.6	59	104 / 12.0	31	6,702	-11.4	45	204 / 3.7
400	31	7,608	-17.9	34	55 / 2.5	31	7,371	-28.1	28	223 / 10.9	31	7,585	-18.8		290 / 18.8	31	7,598	-15.1	54	102 / 11.5	31	7,605	-17.2	40	203 / 6.2
350	31	8,592	-25.1	31	63 / 2.9	31	8,314	-35.7	25	223 / 11.7	31	8,567	-25.7		297 / 21.4	31	8,595	-21.7	48	101 / 10.3	31	8,592	-24.1	38	197 / 7.4
300	31	9,692	-33.5		83 / 3.3	31	9,368	-43.6		227 / 11.8	31	9,666	-33.8		299 / 24.7	30	9,712	-29.9	43	99 / 11.8	31	9,698	-32.5	38	201 / 11.3
250	31	10,945	-43.3		96 / 3.5	31	10,574	-50.2		223 / 12.8	31	10,918	-43.7		303 / 28.9	30	10,983	-40.4		93 / 11.3	31	10,957	-42.4		197 / 12.8
200	31	12,409	-54.6		41 / 2.5	31	12,025	-51.3		220 / 16.3	31	12,379	-54.9		298 / 33.4	30	12,464	-53.2		86 / 13.8	31	12,426	-54.1		207 / 13.4
175	31	13,252	-60.5		42 / 5.4	31	12,894	-50.5		223 / 17.5	31	13,222	-60.0		296 / 34.0	30	13,310	-60.6		79 / 12.8	31	13,271	-59.9		207 / 14.4
150	31	14,199	-66.0		45 / 8.4	31	13,897	-51.3		227 / 16.7	31	14,174	-64.2		300 / 29.3	30	14,252	-68.3		86 / 15.0	31	14,221	-65.1		210 / 11.8
125	31	15,294	-69.5		58 / 8.5	31	15,077	-52.8		221 / 14.8	31	15,282	-66.4		300 / 21.6	30	15,323	-76.5		90 / 18.6	31	15,321	-68.7		196 / 6.4
100	31	16,626	-68.2		77 / 8.0	31	16,511	-54.4		218 / 10.9	31	16,634	-65.1		308 / 12.2	29	16,594	-77.7		95 / 21.2	31	16,654	-68.2		116 / 3.5
80	31	17,977	-64.4		76 / 12.4	31	17,940	-54.3		209 / 5.4	30	18,006	-62.0		357 / 6.4	28	17,894	-71.6		97 / 24.9	31	18,005	-64.3		87 / 10.5
70	31	18,805	-61.7		92 / 20.2	31	18,799	-54.1		183 / 2.3	30	18,844	-59.7		27 / 6.6	27	18,687	-63.7		94 / 34.8	31	18,833	-61.6		88 / 11.8
60	30	19,756	-59.3		89 / 24.5	31	19,785	-53.9		137 / 2.3	30	19,806	-57.3		56 / 7.0	26	19,621	-63.7		92 / 43.3	31	19,787	-59.1		83 / 15.5
50	30	20,904	-56.4		92 / 27.8	31	20,956	-53.5		44 / 3.7	30	20,965	-54.9		77 / 8.2	26	20,755	-57.3		93 / 41.0	31	20,937	-56.6		90 / 21.2
40	29	22,329	-53.7		95 / 30.1	31	22,395	-52.3		88 / 4.7	30	22,401	-52.2		87 / 9.9	26	22,179	-53.7		97 / 16.9	31	22,361	-54.0		90 / 24.5
30	28	24,191	-50.5		93 / 32.2	30	24,266	-50.0		86 / 5.4	30	24,274	-49.6		87 / 11.8	25	24,041	-51.3		13 / 1.6	31	24,220	-51.1		90 / 26.0
25	25	25,384	-48.3		89 / 32.4	30	25,461	-48.3		68 / 7.6	29	25,472	-47.6		88 / 15.2	25	25,229	-49.3		286 / 2.3	31	25,412	-49.0		90 / 28.6
20	20	26,860	-45.4		83 / 34.2	30	26,936	-46.2		69 / 9.5	16	26,942	-46.3		89 / 14.2	24	26,703	-47.3		263 / 3.1	31	26,886	-46.3		87 / 30.9
15	9	28,788	-41.9			29	28,859	-43.3		85 / 11.1	5	28,843	-43.1			22	28,613	-45.5		11 / 1.4	30	28,812	-43.0		86 / 34.8
10						29	31,613	-39.1		92 / 11.3						19	31,323	-43.4		83 / 6.4	28	31,573	-37.0		91 / 36.5
7						27	34,091	-34.8		91 / 14.6						15	33,741	-40.5		91 / 16.7	21	34,070	-32.3		90 / 35.4
5						15	36,449	-30.6		97 / 16.5						8	36,066	-37.4							
4						5	38,025	-27.0																	

See reference note at end of table

RAWINSONDE DATA

Average monthly values

AUGUST 1963

Standard pressure surface (mb.)	WAKE IS., PACIFIC AREA 1012 MB						WASHINGTON, D. C. 1006 MB						WINNEMUCCA, NEV. 870 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	29	5	28.0	80	87	7.8	31	84	16.6	86	286	2.3	31	1,310	11.9	42	89	1.6
1000	29	108	27.2	80	90	10.9	31	135			291	2.9	31	115				
950	29	561	23.8	80	96	14.4	31	583	18.5	64	285	7.2	31	555				
900	29	1,033	20.8	77	99	14.6	31	1,039	15.8	65	287	7.8	31	1,020				
850	29	1,527	17.9	76	97	13.6	31	1,523	12.9	69	287	11.5	31	1,506	18.6	30	358	1.4
800	29	2,044	15.1	71	97	12.8	31	2,030	10.2	62	282	14.8	31	2,025	17.0	28	332	1.7
750	29	2,589	12.5	64	98	12.2	31	2,570	7.8	53	281	17.9	31	2,568	13.5	29	233	2.9
700	29	3,167	9.5	55	98	11.5	31	3,132	5.4	38	283	20.0	31	3,148	9.2	32	202	7.4
650	29	3,777	6.0	51	103	9.7	31	3,729	2.2	38	286	20.2	31	3,753	4.4	35	202	13.4
600	29	4,430	2.0	50	111	8.2	31	4,376	- 1.5		283	23.5	31	4,403	- .6	40	208	19.0
550	29	5,121	- 2.1	50	101	5.1	31	5,058	- 5.2		281	26.2	31	5,086	- 6.0	42	208	22.5
500	29	5,879	- 6.7	50	120	3.5	31	5,807	- 9.8		281	30.1	31	5,832	-11.2	33	218	23.5
450	29	6,688	-11.5	47	94	7.4	31	6,609	-15.0		281	33.6	31	6,627	-16.4		225	24.7
400	29	7,590	-17.2	46	228	2.9	31	7,494	-21.1	34	280	36.1	31	7,510	-22.6		227	27.4
350	29	8,577	-24.2	46	266	6.2	31	8,465	-28.1		280	41.0	31	8,476	-29.8		230	34.2
300	29	9,682	-32.4	40	253	10.1	31	9,553	-36.3		282	46.2	31	9,556	-38.3		228	39.8
250	29	10,940	-42.4		263	16.7	31	10,792	-46.0		285	49.9	31	10,786	-47.3		228	46.8
200	29	12,407	-54.7		266	22.5	31	12,245	-55.0		287	57.7	31	12,234	-54.7		226	53.4
175	28	13,248	-61.4		264	26.8	31	13,091	-57.6		285	50.9	31	13,084	-57.0		229	51.3
150	28	14,188	-68.4		264	25.6	31	14,059	-59.5		285	39.8	31	14,055	-58.9		233	39.6
125	28	15,262	-73.8		267	17.7	31	15,192	-61.7		282	30.1	31	15,194	-60.7		235	26.2
100	26	16,567	-71.1		72	4.1	30	16,574	-61.3		283	20.8	31	16,579	-61.1		221	10.9
80	25	17,902	-67.0		84	21.6	30	17,965	-58.9		296	7.8	31	17,968	-60.0		191	4.5
70	25	18,712	-65.0		84	28.7	30	18,815	-56.8		316	2.7	31	18,810	-58.6		113	3.5
60	25	19,655	-62.7		85	34.0	30	19,786	-55.1		37	2.3	31	19,776	-57.2		85	6.2
50	25	20,786	-60.2		85	35.9	30	20,955	-53.3		73	4.9	31	20,933	-55.5		77	8.9
40	24	22,188	-57.3		84	36.9	29	22,397	-51.5		88	8.9	31	22,364	-53.0		78	10.7
30	24	24,022	-53.5		90	38.9	29	24,276	-48.5		91	12.8	31	24,233	-49.7		83	12.6
25	24	25,201	-51.6		90	35.0	27	25,479	-46.6		92	15.0	29	25,443	-47.9		84	16.4
20	23	26,659	-48.6		84	33.4	20	26,959	-44.8		90	17.7	27	26,926	-46.0		90	16.7
15	20	28,568	-45.4		88	33.8	16	28,885	-42.6				20	28,866	-43.1		93	17.9
10	20	31,294	-42.0		86	36.5												
7	18	33,744	-38.4		84	47.2												
5	13	36,059	-34.6		89	51.1												

Standard pressure surface (mb.)	WINSLOW, ARIZ. 854 MB						YAKUTAT, ALASKA 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	1,492	18.4	79	146	3.7	31	12	9.6	95	86	1.2
1000	31	118					31	157	11.1	93	148	.8
950	31	569					31	584	10.7	80	186	1.6
900	31	1,040					31	1,036	8.7	74	220	3.9
850	31	1,538	18.5	76	147	3.5	31	1,508	6.5	70	250	5.8
800	31	2,059	17.8	60	239	3.7	31	2,005	5.5	57	272	7.8
750	31	2,605	14.6	60	198	5.1	31	2,526	3.4	50	270	10.5
700	31	3,189	10.5	65	189	4.9	31	3,088	.4	49	262	10.9
650	31	3,797	6.2	69	180	6.0	31	3,672	- 3.0	45	258	11.5
600	31	4,455	1.7	71	155	9.7	31	4,309	- 6.7	42	255	12.8
550	31	5,144	- 3.0	71	177	5.8	31	4,975	-10.5	38	248	13.2
500	31	5,901	- 7.2	62	204	4.3	31	5,712	-15.2	36	246	15.0
450	31	6,710	-12.0	56	195	4.9	31	6,493	-20.7	38	248	15.2
400	30	7,611	-17.9	53	207	6.4	31	7,363	-26.8	35	248	16.9
350	30	8,596	-24.7	47	217	10.5	31	8,312	-33.9		252	18.3
300	30	9,698	-33.1	42	224	14.6	31	9,374	-42.0		253	18.6
250	30	10,954	-42.9		223	19.0	31	10,584	-51.2		260	17.9
200	30	12,420	-54.4		228	21.6	31	12,013	-56.4		264	17.7
175	30	13,264	-59.8		235	21.2	31	12,862	-55.7		264	16.5
150	30	14,215	-64.6		231	15.2	31	13,847	-54.2		256	15.2
125	30	15,317	-68.7		225	10.9	31	15,018	-53.3		261	14.2
100	30	16,651	-68.2		211	4.9	31	16,456	-52.7		249	11.5
80	30	18,003	-64.3		97	5.8	30	17,904	-51.6		252	8.9
70	30	18,837	-61.7		93	8.7	30	18,772	-51.2		253	5.2
60	29	19,786	-59.2		84	12.6	30	19,773	-50.8		253	3.9
50	29	20,935	-56.9		85	16.1	28	20,961	-50.4		244	.8
40	28	22,358	-54.5		92	18.8	28	22,418	-49.9		29	1.0
30	27	24,210	-51.8		89	22.0	27	24,303	-48.1		62	2.7
25	25	25,399	-50.3		90	23.1	27	25,507	-46.9		68	2.7
20	21	26,866	-47.4		90	26.4	27	26,990	-45.3		70	4.5
15	15	28,782	-44.8		87	28.6	25	28,923	-42.6		77	5.8
							20	31,698	-38.3		65	6.8
							13	34,155	-34.5		76	7.8
							5	36,488	-31.4			

Standard pressure surface (mb.)	YAP, CAROLINE IS. 1006 MB						YUCCA FLAT, NEV. 882 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	17	25.7	93	288	1.6	31	1,196	16.3	41	267	1.2
1000	31	72	25.7	92	282	2.7	31	103				
950	31	516	23.9	88	268	5.4	31	545				
900	31	996	20.7	85	276	4.7	31	1,015				
850	31	1,490	17.8	85	301	2.3	31	1,512	22.5	33	203	5.6
800	31	2,008	15.4	81	349	1.0	31	2,036	19.3	30	204	13.6
750	31	2,548	12.6	79	32	1.9	31	2,580	15.0	35	197	15.9
700	31	3,132	9.5	78	75	4.7	31	3,166	10.2	44	192	15.0
650	31	3,737	6.1	77	75	5.8	31	3,773	5.4	45	183	15.0
600	31	4,397	2.4	76	91	7.6	31	4,426	.7	42	182	15.9
550	31	5,089	- 1.6	75	92	9.1	31	5,110	- 3.7	35	193	15.5
500	31	5,851	- 5.6	67	97	10.3	31	5,867	- 8.6		211	14.2
450	31	6,668	-10.2	59	97	9.9	30	6,667	-13.8		224	15.9
400	31	7,570	-15.6	54	98	9.5	30	7,561	-19.9		228	21.2
350	31	8,564	-22.4	48	101	10.7	29	8,537	-27.1		229	26.4
300	31	9,678	-30.5	45	99	10.1	29	9,628	-35.4		226	30.9
250	31	10,947	-40.8		94	11.1	29	10,873	-44.6		220	36.3
200	31	12,423	-53.7		78	13.0	28	12,336	-54.1		219	41.6
175	31	13,268	-61.0		81	14.6	27	13,180	-58.9		223	40.0
150	31	14,207	-69.1		78	19.4	27	14,138	-62.8		226	33.6
125	31	15,273	-77.4		82	23.7	27	15,254	-64.9		229	22.1
100	23	16,540	-79.1		87	27.2	27	16,613	-65.3		198	6.4
80	22	17,838	-71.3		89	32.1	27	17,979	-62.0		142	5.4
70	21	18,632	-68.0		92	35.9	27	18,812	-60.1		102	6.0
60	21	19,562	-65.0		92	41.2	27	19,775	-57.7		89	10.3
50	20	20,690	-59.4		90	41.6	27	20,928	-56.0		87	13.0
40	20	22,101	-55.6		90	25.8	27	22,354	-53.7		89	16.1
30	20	23,949	-52.1		92	9.1	26	24,214	-50.8		92	18.5
25	19	25,135	-49.7		83	4.5	25	25,409	-49.0		91	18.1
20	18	26,593	-48.2		61	3.9	23	26,880	-47.1		90	20.4
15	17	28,501	-46.2		56	5.2	18	28,799	-44.4		90	22.0
10	16	31,209	-43.8				5	31,546	-40.0			
7	5	33,606	-43.0									

Note: Values shown are adjusted to 1200 G.C.T. Pressures shown under station names are mean monthly station pressures for the month of record, corrected to the height of the instrument shelters used for rawinsonde purposes. Number of observations for height and temperature. Although the number of temperature observations at any pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles. Any elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The height of the mid-point of each layer is based on the observations at the surface and at standard pressure surfaces. Wind data are based on 1 or more observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes; dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning August 15, 1963
2/ beginning August 2, 1963

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun.

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Aug.									
1	0.81	0.89	1.01	1.15	1.31	1.05	0.93	0.84	0.76
2	.67	.77	.89	1.07	1.27	1.08	----	----	----
4	.69	.77	.89	1.05	----	----	----	----	----
5	.58	.70	.83	1.01	----	----	----	----	----
6	.71	.84	.93	1.12	----	----	----	----	----
7	.82	.90	1.00	1.14	1.33	----	----	----	----
8	----	----	.88	1.07	----	----	----	----	----
9	----	----	(1.09)	----	(1.21)	----	----	----	----
11	.75	.88	.97	1.12	1.31	----	----	(.85)	.77
12	.73	.81	.94	1.10	1.25	----	----	----	----
13	----	----	.97	1.08	----	1.09	.99	.89	----
14	.76	.83	----	----	1.20	----	(.79)	(.73)	(.65)
15	.77	.86	.95	1.11	1.32	1.09	----	----	----
19	----	----	----	1.13	1.29	----	----	----	----
20	.69	.80	.91	1.07	1.28	----	----	----	----
21	.74	.83	----	----	----	----	----	----	----
22	----	----	----	----	1.23	----	----	----	----
23	----	----	----	----	1.30	1.06	----	----	----
24	.67	.77	.89	1.06	1.28	----	----	----	----
26	----	----	.93	(.97)	----	----	(.83)	(.79)	----
27	.73	----	----	1.09	1.23	----	----	----	----
28	.74	(.83)	.97	1.11	----	----	----	----	----
29	----	----	----	----	1.29	----	----	----	----
Averages	0.72	0.82	0.93	1.09	1.28	1.07	0.96	0.87	0.77

BLUE HILL OBS., MASS.

	Air mass								
	4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Aug.									
1	0.70	0.82	0.91	1.08	----	----	----	----	----
3	----	----	----	.82	1.21	----	0.70	0.55	0.43
10	.67	.79	.91	1.13	1.40	1.18	1.01	.91	.77
11	.79	.89	1.03	1.16	----	----	----	----	----
12	.60	.70	.79	.99	----	----	----	----	----
15	.79	.90	1.03	1.17	1.36	1.11	.82	.71	.58
16	.61	.72	.84	1.08	1.33	1.11	.87	.79	.67
18	----	----	----	----	----	1.12	.99	.87	.77
19	.87	.96	1.08	1.21	----	----	----	----	----
21	----	----	----	----	----	----	.94	.70	.58
25	.50	.55	1.08	1.22	----	----	----	----	----
26	----	----	----	1.21	1.35	1.12	.94	.79	.65
27	.77	.87	.98	1.14	1.31	1.01	.82	.62	.52
28	.65	.76	.90	1.13	----	----	----	----	----
Averages	0.70	0.80	0.96	1.11	1.33	1.11	0.89	0.74	0.62

MADISON, WIS.

	Air mass								
	4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Aug.									
4	S 0.64	S 0.75	----	----	----	----	----	----	----
7	----	----	----	----	S 1.25	----	----	----	----
19	----	----	----	----	----	S 1.04	S 0.89	S 0.74	S 0.66
Averages	0.64	0.75	----	----	1.25	1.04	0.89	0.74	0.66

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance								
	A. M.				*	P. M.			
	78.7°	75.7°	70.7°	60.0°		60.0°	70.7°	75.7°	78.7°
	Air mass								
	3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Aug.									
1	1.01	1.11	1.23	1.35	1.48	----	----	----	----
2	1.06	1.16	1.25	1.38	1.51	----	----	----	----
3	1.12	1.20	1.30	1.40	----	----	----	----	----
4	1.06	1.15	1.25	1.37	----	----	----	----	----
5	1.02	1.12	1.24	1.36	----	----	----	1.08	----
6	----	----	1.29	1.39	1.53	1.37	1.25	1.13	1.05
7	1.14	1.22	1.30	1.41	----	----	----	1.18	1.10
8	1.11	1.20	1.30	1.40	1.55	----	----	1.17	1.08
9	1.10	----	1.29	1.41	1.57	----	1.31	1.21	1.12
10	1.10	1.20	1.30	1.42	1.57	----	----	----	----
11	1.06	----	----	1.47	----	----	----	----	----
15	----	----	----	----	----	----	----	1.16	1.07
17	1.10	1.18	1.27	1.39	----	----	----	----	----
18	1.04	1.13	1.26	1.37	----	----	----	----	----
19	1.05	1.13	1.23	1.35	1.50	1.32	1.18	1.08	.99
22	1.02	1.11	1.20	1.34	----	----	1.16	1.05	.96
23	1.04	1.12	----	1.35	----	1.39	1.25	1.14	----
24	1.06	1.14	1.23	1.36	----	----	----	----	----
25	1.07	1.15	1.25	1.37	----	----	----	----	----
27	----	----	1.26	1.38	----	----	----	----	----
28	----	1.18	1.27	1.38	----	1.34	1.22	----	----
29	1.10	1.18	1.28	1.39	1.56	1.40	1.28	1.18	1.10
30	1.19	1.26	1.35	1.45	1.54	1.43	1.33	1.24	1.16
31	----	----	----	----	1.55	----	----	----	----
Averages	1.08	1.16	1.27	1.39	1.54	1.38	1.25	1.15	1.07

OMAHA, NEBR.

	Air mass								
	4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Aug.									
2	I 0.19	I 0.32	M 0.49	M 0.69	----	----	----	----	----
7	----	----	----	----	M 1.07	I 0.63	I 0.19	I 0.10	----
13	S .58	----	----	----	----	----	----	----	----
27	Struck by lightning - inoperative								
Averages	0.39	0.32	0.49	0.69	1.07	0.63	0.19	0.10	----

TUCSON, ARIZ.

	Air mass								
	4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
	No observation due to cloudiness								

GUAM, M. I.

	Air mass								
	4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observation due to cloudiness								

( ) Clouds present
S Slight haze - indeterminable
M Moderate haze - indeterminable
I Intense haze - indeterminable
* Values corresponding to true solar noon.

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63 of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

AUGUST 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	732	696	529	508	614	542	677	649	524	569	669	627	642	647	665	628	298	634	642	661	566	530	634	602	383	483	597	586	425	408	552	578
ANNETTE ALASKA	140	357	364	352	219	456	464	413	510	463	287	315	92	206	293	275	334	302	271	169	373	453	438	430	144	192	238	340	384	400	96	315
APALACHICOLA FLORIDA	363	441	441	651	659	634	626	287	609	588	521	253	380	283	333	310	382	459	532	575	570	610	---	---	---	---	---	---	---	---	---	478
ARGONNE NAT. LAB.	681	532	609	608	176	182	673	531	291	479	428	354	252	616	---	464	289	475	382	589	450	485	457	131	430	555	410	278	570	517	412	443
ASTORIA OREGON	431	704	211	319	463	552	596	670	299	322	489	204	580	648	691	625	497	386	511	576	390	571	227	93	255	605	541	484	169	56	200	431
ATLANTA GEORGIA	696	708	694	654	671	505	486	530	547	534	528	494	383	560	446	446	436	465	474	237	532	501	521	501	474	396	124	337	274	489	431	486
BARROW ALASKA	110	245	213	291	208	143	---	498	200	293	224	235	313	94	125	143	76	232	207	207	363	122	318	327	63	62	171	355	314	63	85	210
BETHEL ALASKA	139	113	213	186	319	616	189	89	84	122	493	564	528	151	65	173	181	246	167	159	147	209	438	105	201	323	324	76	88	197	184	229
BISMARCK N.DAK.	489	669	658	631	503	620	542	547	616	580	411	629	621	607	534	599	556	600	596	508	575*	536	224	480	151	399	352	567	459	537	504	526*
BLUE HILL MASS.	518	365	615	507	485	580	537	360	547	697	507	585	196	419	634	639	562	472	581	177	548	538	523	275	457	499	480	501	123	211	466	471
BOISE IDAHO	750	710	612	668	689	538	661	611	420	551	642	642	659	672	647	642	658	648	657	654	623	525	572	618	622	632	618	611	604	140	326	601
BOSTON MASSACHUSETTS	466	358	585	511	425	588	539	288	521	699	629	565	190	405	637	604	562	499	570	180	528	553	533	305	421	524	438	425	120	275	419	463
BROWNSVILLE TEXAS	658	552	595	570	559	540	665	547	548	535	371	578	680	678	681	650	660	662	635	654	668	608	499	646	619	636	647	672	660	390	385	595
BURLINGTON VERMONT	371	325	529	283	283	576	339	790	534	---	275	618	77	116	457	539	220	175	442	524	582	517	318	54	499	586	565	535	96	429	372	401
CANTON ISLAND P.I.	494	569	570	493	---	563	520	595	438*	599	549	568	573	539	316	605	515	612	616	510	613	576	617	525	631	625	536	631	476	515	638	554*
CAPE HATTERAS N.C.	528	660*	622	531	646	600	576	522	---	361	620	---	583	621	452	419	282	600	593	305	183	475	374	569	324	500	608	550	547	319	468	498*
CARIBOU MAINE	628	527	131	85	275	508	467	557	595	381	353	532	493	99	477	404	407	211	598	502	489	301	397	48	92	418	391	519	57	470	81	371
CHARLESTON S.C.	473	559	584	679	563	539	586	547	650	628	630	444	538	495	215	574	618	532	583	270	409	266	508	537	521	298	297	362	627	422	419	496
CLEVELAND OHIO	609	419	227	621	616	392	484	597	287	539	574	282	214	302	495	473	93	507	12	339	518	424	407	164	579	577	537	224	152	463	330	402
COLUMBIA MISSOURI	431	693	630	675	648	407	651	637	377	557	653	162	650	523	679	637	576	139	172	616	646	625	566	483	188	578	526	201	531	587	537	516
DAVIS CALIFORNIA	746	758	685	736	718	724	632	339	464	672	651	682	717	720	728	688	689	693	696	682	684	655	638	676	670	662	650	632	572	587	625	660
DODGE CITY KANSAS	717	709	700	653	676	614	570	694	536	562	581	---	652	670	649	639	555	232	618	594	576	610	609	580	442	498	558	370	456	492	161	566
E. LANSING MICHIGAN	667	287	610	717	648	444	655	625	327	648	554	224	172	492	637	499	148	663	498	632	---	519	416	350	566	631	558	102	296	463	401	482
EL PASO TEXAS	679	593	567	720	671	546	701	692	601	627	700	700	535	390	681	688	663	588	563	570	548	652	712	662	685*	674	639	539	348	401	625	612*
ELY NEVADA	685*	431*	432*	683	---	---	---	---	620	639	724	710	713	689	598	450	599	688	666*	693	623	697	677	701	690	663	680	670	585	324	397	620*
EPPLEY.NEWPORT R.I.	459	501	592	397	462	---	478	528	605	609	448	556	174	449	638	583	541	400	608	361	497	399	540	275	518	485	486	550	176	145	455	464
FAIRBANKS ALASKA	231	284	204	275	358	359	529	285	92	172	350	503	508	540	230	121	148	160	231	410	461	---	196	---	---	---	448	372	208	367	355	311
FORT WORTH TEXAS	718	700	674	650	664	659	656	547	679	458	666	693	579*	491	617	648*	669	669	465	657	632	641	670*	652	649*	570	626*	596	593	510	284	612*
FRESNO CALIFORNIA	689	703	722	726	699	632	340	543	655	660	635	670	679	663	640	638	683	685	664	668	656	642	647	647	656	646	649	632	624	485	607	641
GLASGOW MONTANA	654	696	668	577	647	645	570	509	636	311	515	647	634	590	616	632	603	605	589	570	497	509	450	509	535	583	522	567	358	---	532	566
GRAND JUNCTION COLO.	296	---	332	374	457	651	482	---	---	495	---	747	735	839	715	645	258	640	760	385	602	300	372	569	486	277	622	673	649	272	283	515
GREAT FALLS MONTANA	660	657	648	543	588	516	588	522	490	467	302	542	587	580	599	572	561	462	485	504	543	504	555	442	454	552	564	535	529	511	366	530
GREENSBORO N.C.	632	721	706	515	704	630	566	583	618	216	552	637	420	686	604	517	610	546	466	514	430	532	596	540	271	161	174	440	397	332	619	514
INDIANAPOLIS INDIANA	678	641	545	618	530	275	591	589	488	575	561	342	384	601	666	565	334	464	94	566	543	598	501	279	203	585	542	245	421	560	466	485
ITHACA NEW YORK	371	404	419	372	490	599	372	493	390	610	404	455	171	213	449	609	182	367	325	412	567	533	457	132	581	592	586	369	101	341	344	410
LAKE CHARLES LA.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LANDER WYOMING	658	644	595	385	654	507	452	378	338	555	412	287	651	550	598	594	370	436	468	614	603	330	489	609	593	470	551	521	589	431	161	500
LARAMIE WYOMING	483	309	312	412	316	299	354	364	541	536	236	290	420	614	427	542	201	556	563	433	367	251	411	543	513	496	522	405	585	396	379	422
LAS VEGAS NEVADA	403	567	695	710	580	391	495	551	632	719	688	692	695	668	502	653	642	680	630	667	691	604	682	674	670	593	656	651	426	569	662	617
LITTLE ROCK ARKANSAS	564	564	585	---	568	475	451	---	563	333	317	535	340	524	610	579	522	485	213	334	567	516	328	438	343	417	301	481	226	330	513	449
LOS ANGELES CALIF.WB	597	609*	637	659	611	474	359	493	653	552	546	662	641	623	538	614	621	628	624	620	616	455	592	639	652	636	637	644	608	452	516	587*
LOS ANGELES CALIF.CO	634	652	724	737	696	527	295	499	701	724	687	712	708	658	567	636	698	688	626	661	659	561	622	720	679	652	691	684	669	504	531	639
MANHATTAN KANSAS	636	653	590	606	612	344	562	533	241	482	485	412	500	531	622	523	591	42	358	603	534	559	444	584	216	201	567	449	568	603	378	485
MAUNA LOA OB.HAWAII	598	718	546	483	608	833	839	841	845	837	401	354	---	640	667	742	659	735	797	803	673	796	828	499	698	606	762	804	807	819	656	696
MEDFORD OREGON	699	693	669	679	676	680	684	416	385	614	636	656	662	675	635	644	655	670	649	631	605	465	524	632	637	549	604	586	504	447	516	606
MIAMI FLORIDA	608	627	673	686	555	635	749	617	431	702	544	467	423	437	696	638	371	385	444	447	535	359	452	342	461	371	390	555	624	572	513	526
MIDLAND TEXAS	693	596	589	634	598	632	572	627	477	596	650	648	446	424	655	574	547	570	353	488	468	576	632	635	598	573	578	579	561	460	391	562
NASHVILLE TENNESSEE	601	634	537	464	598	526	415	542	507	118	586	447	258	580	630	607	534	478	305	247	508	479	541	490	451	290	523	379	342	524	563	474
NORTH OMAHA NEBRASKA	648	620	574	586	407	566	674	645	539	527	589	422	341	632	651	465	519	124	273	597	629	612	315	559	163	406	---	---	---	---	---	503
OAK RIDGE TENNESSEE	446	600	566	511	574	575	434	437	529	80	442	490	227	520	566	546	469	459	406	253	321	404	462	497	410	373	329	396	95	415	490	430
OKLAHOMA CITY OKLA.	655	661	649	625	631	614	200	543	518	317	616	544	496	569	640	625	598	419	355	627	616	610	509	558	390	529	580	570	222	461	363	526
PHOENIX ARIZONA	399	568	601	274	623	556	589	586	644	650	645	635	---	601	519	513	515	639	598	627	291	367	576	634	584	626	625	621	623	469	540	558
PORTLAND MAINE	574	62	478	321	709	436	538	499	422	672	551	513	94	---	576	601	405	457	543	119	599	552	311	269	374	526	458	575	118	317	386	435
PROSSER WASHINGTON	---	---	---	---	---	---	---	---	---	---	---	---	---	---	698	685	669	693	662	661	662	564	408	614	562	657	651	648	597	499	567	---
RAPID CITY S.DAK.	566	645	608	463	562	615	604	610	607	612	257	560	502	595	539	442	558	529	595	408	473	342	515	531	447	511	492	300	427	360	341	504

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

AUGUST 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
RIVERSIDE CALIFORNIA	595	534	721	733	649	279	300	611	737	742	694	717	704	648	625	676	679	696	699	697	699	674	657	685	707	662	679	665	659	644	631	648
SAINT CLOUD MINN.	456	461	694	683	561	621	647	574	551	563	197	471	400	611	578	339	642	310	615	606	282	362	332	587	552	368	259	506	464	328	551	489
SALT LAKE CITY UTAH	660	592	629	679	641	595	560	579	635	533	515	708	690	615	708	644	628	556	514	640	571	502	586	659	567	474	520	654	658	410	431	592
SAN ANTONIO TEXAS	676	663	650	652	672	678	622	627	673	644	535	525	630	661	341	567	638	647	585	634	550	632	601	663	629	637	636	606	639	583	550	614
SANTA MARIA CALIF.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SAULT STE MARIE MICH	538	512	267	---	---	326	629	554	645	657	678	130	286	682	610	63	520	642	523	631	608	464	218	641	490	580	363	150	70	313	624	462
SEATTLE TACOMA WASH.	461	675	654	459	304	329	532	651	273	588	491	478	248	481	555	628	597	651	404	447	351	413	198	314	406	502	558	485	506	352	186	457
SHREVEPORT LOUISIANA	614	660	648	615	560	433	594	433	486	402	593	596	487	259	616	690	649	639	569	455	547	641	637	626	604	572	491	481	584	396	497	551
SPOKANE WASHINGTON	607	683	690	638	633	648	691	623	341	356	583	483	564	639	659	628	633	578	541	451	571	522	442	402	552	602	595	568	561	552	507	566
STATE COLLEGE PENN.	454	592	239	548	718	644	229	514	492	679	581	423	202	448	542	541	447	611	349	298	460	478	509	183	612	619	558	511	308	429	495	475
STERLING VIRGINA	484	659	338	682	651	628	364	577	520	549	494	574	354	587	682	582	612	626	356	400	323	554	520	357	639	618	534	515	248	509	579	520
STILLWATER OKLAHOMA	696	699	683	668	675	645	166*	---	567	553	647	530	607	615	676	674	618	295	310	654	641	652	605	272	455	576	606	482	309	572	344	550*
TAMPA FLORIDA	---	627	606	620	487	598	625	412	619	517	478	554	351	361	501	---	547	467	511	505	355	579	576	515	517	408	580	565	599	554	557	524
TUCSON ARIZONA	---	438	429	---	542	406	470	569	627	543	670	584	590	506	456	571	362	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month AUGUST 1963

Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys	356	408	398	373	400	404	365	387	420	301	278	374	393	295	347	329	358	365	351	339	296	221	329	266	278	348	313	332	287	312	174	335

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

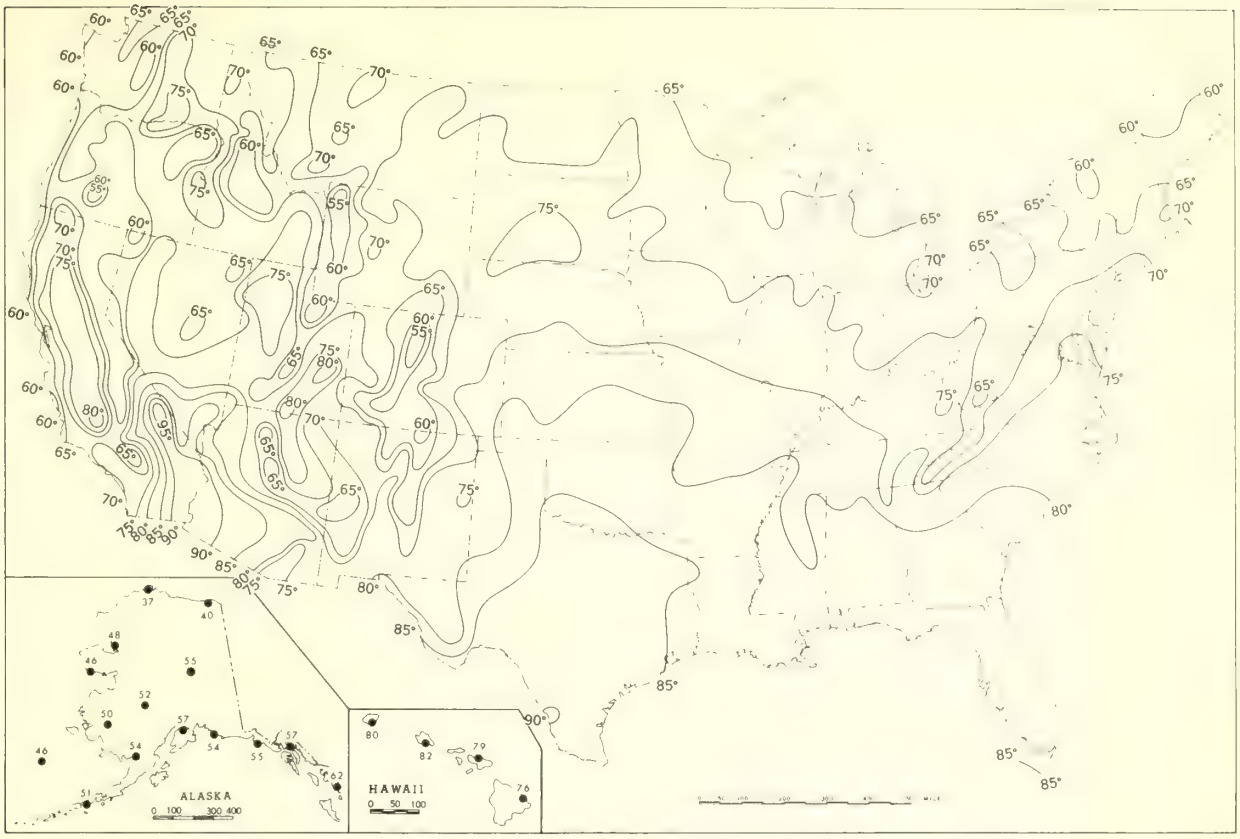
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $\lambda s \Omega \Omega \Omega$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

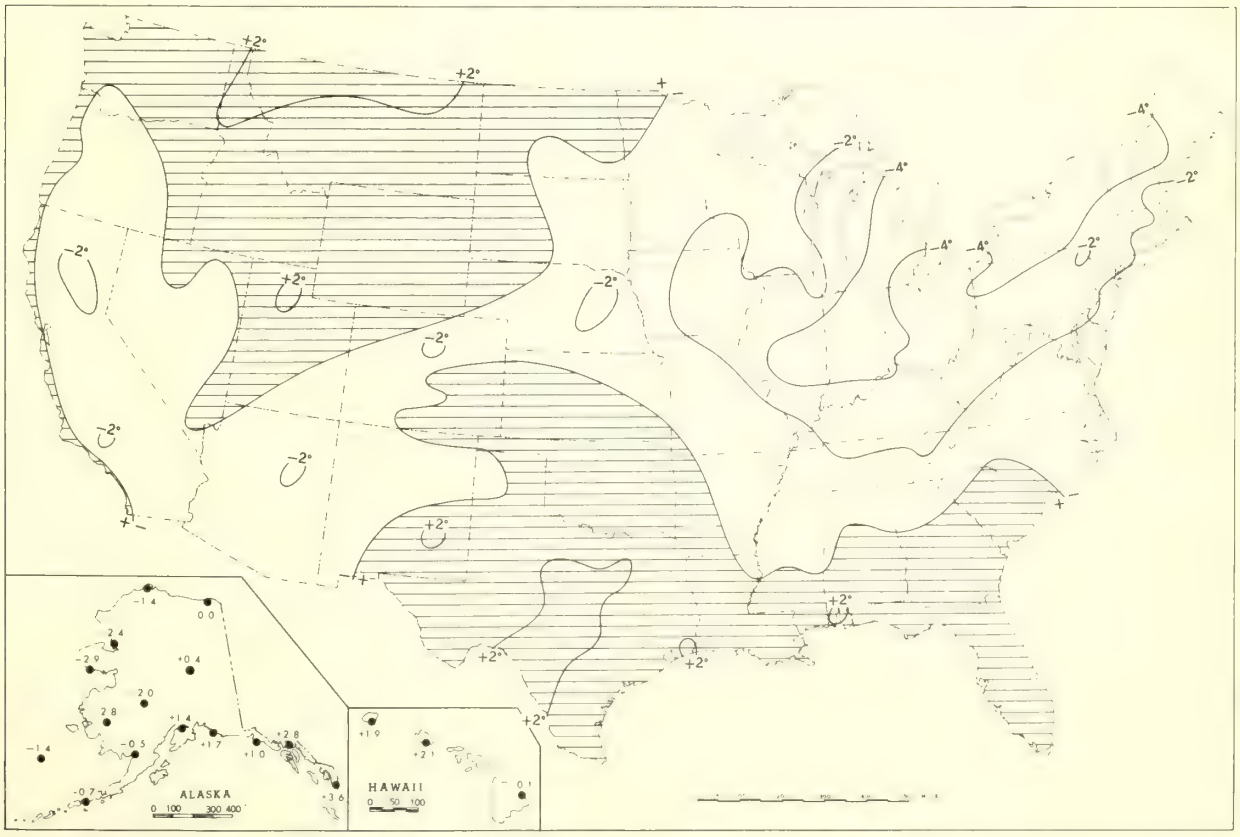
Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	00313	00325	00321	00299	00316	00300	00319	00301	00287	00281	00290	00289	00298	00295	00291	00306	00306	00324	00324	00309	00317	00300	00289	00287	05286	04276	06282	00298	06320	00305	00306	302
Caribou, Maine	00332	00351	34402	-----	05366	00348	00347	00342	00345	35383	-----	00381	00347	05394	00364	00383	00351	32374	00343	00350	-----	-----	-----	-----	-----	05348	05362	00354	-----	00328	-----	359
Green Bay, Wis.	00335	35344	00343	00326	00356	00349	00337	00329	00346	00353	00330	35352	00338	00331	00341	05337	00366	00360	00365	00343	03333	05321	05317	05303	00311	00306	05322	05346	00329	00362	00364	339
Mauna Loa, Hawaii	00284	00288	00289	00287	00282	00283	00283	00287	00277	00276	00271	-----	-----	-----	00280	00277	00279	00275	00273	00278	00278	00276	00278	00276	00279	00282	00280	00279	00275	00274	00276	279
Midland, Texas	00283	00276	00287	00293	00279	00283	00295	00287	05294	00299	00307	00287	00282	06270	00268	00261	03260	04270	05264	06269	05266	00264	00270	00282	00277	00273	00274	00264	00278	00277	06272	278
Nashville, Tenn.	00326	00320	00331	00321	00328	00332	00337	00337	00328	06318	00324	00323	05325	00325	00334	00325	00325	00327	00320	04337	00336	00308	00309	00306	00310	-----	-----	-----	-----	-----	00307	323
Sterling, Va.	00318	00314	05313	00318	00321	35351	36337	00318	36336	00321	00347	00324	35323	00322	00325	00328	00320	00329	35345	35318	36347	00317	00328	00307	05308	00328	00319	00308	37316	00306	00320	324

The spectrophotometer measures the total amount of ozone in the atmosphere, i. e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded $\Omega \Omega \Omega$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code λs designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, August 1963.



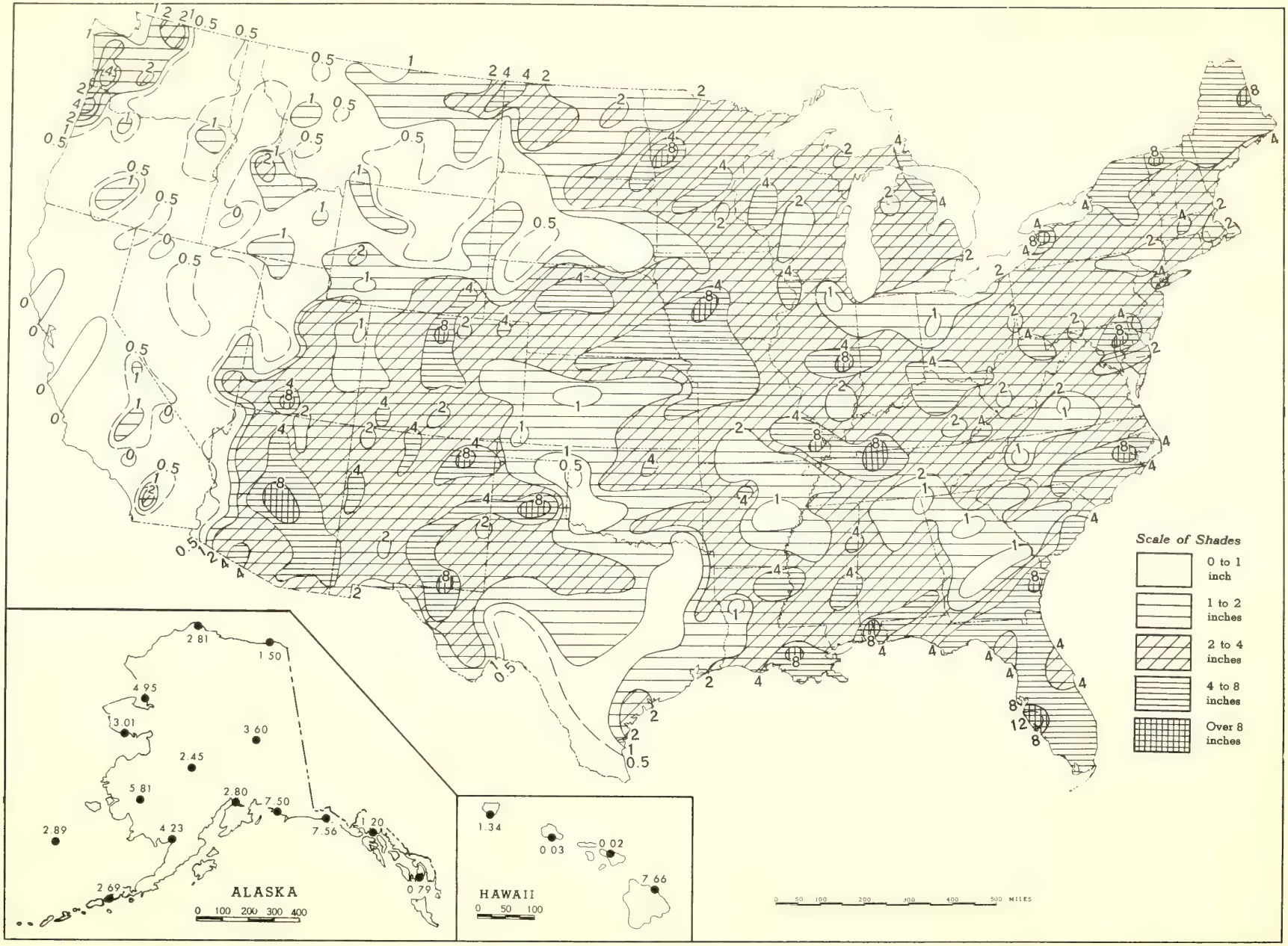
B. Departure of Average Temperature from Normal (°F.), August 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

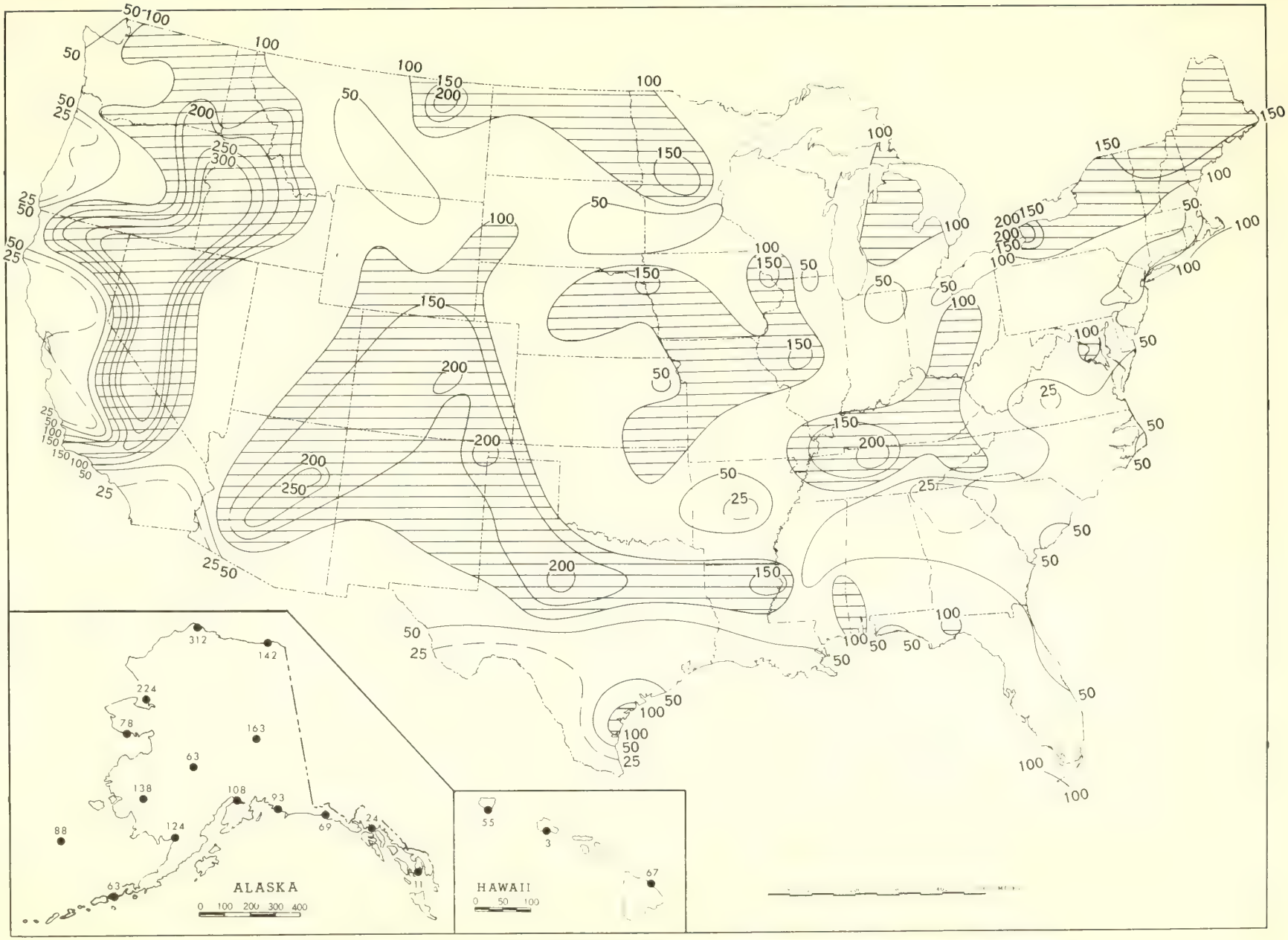
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), August 1963.



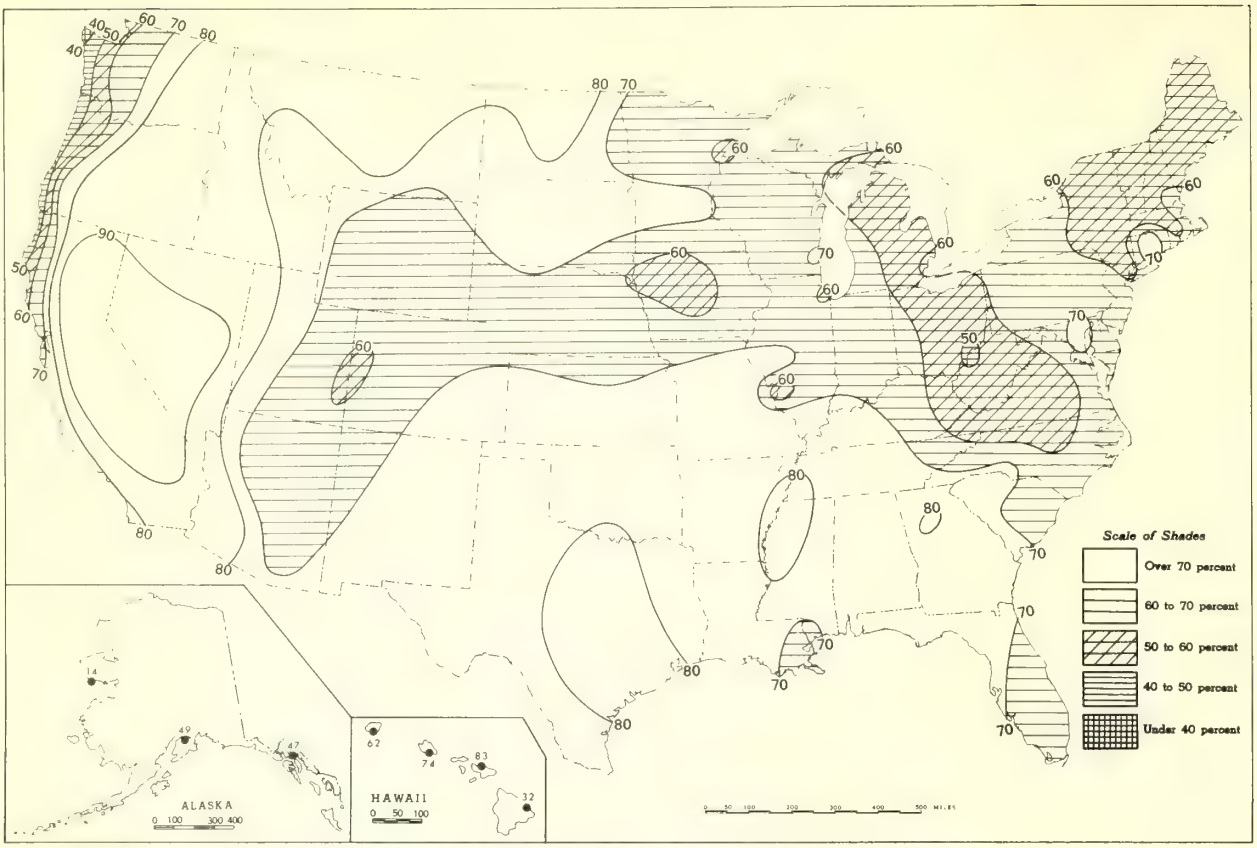
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, August 1963.

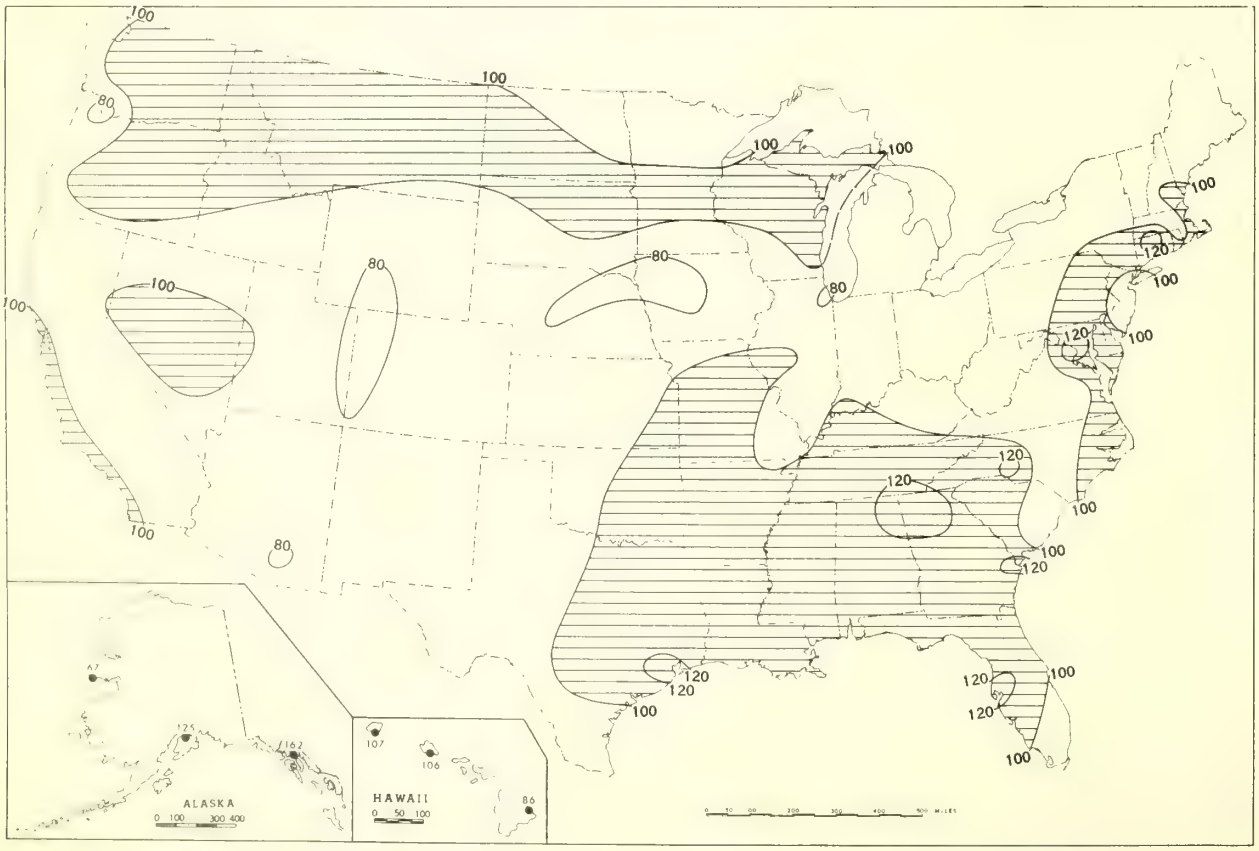


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, August 1963.

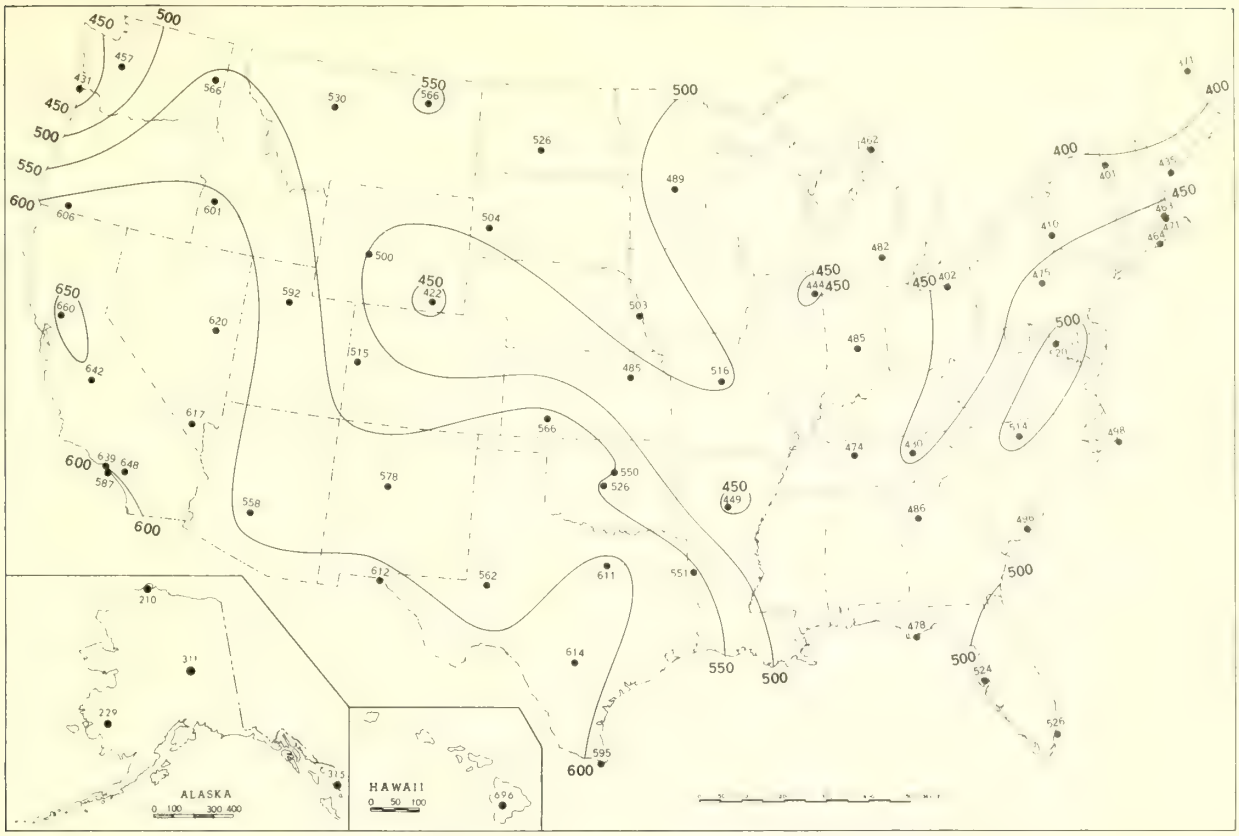


B. Percentage of Mean Monthly Sunshine, August 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, August 1963.

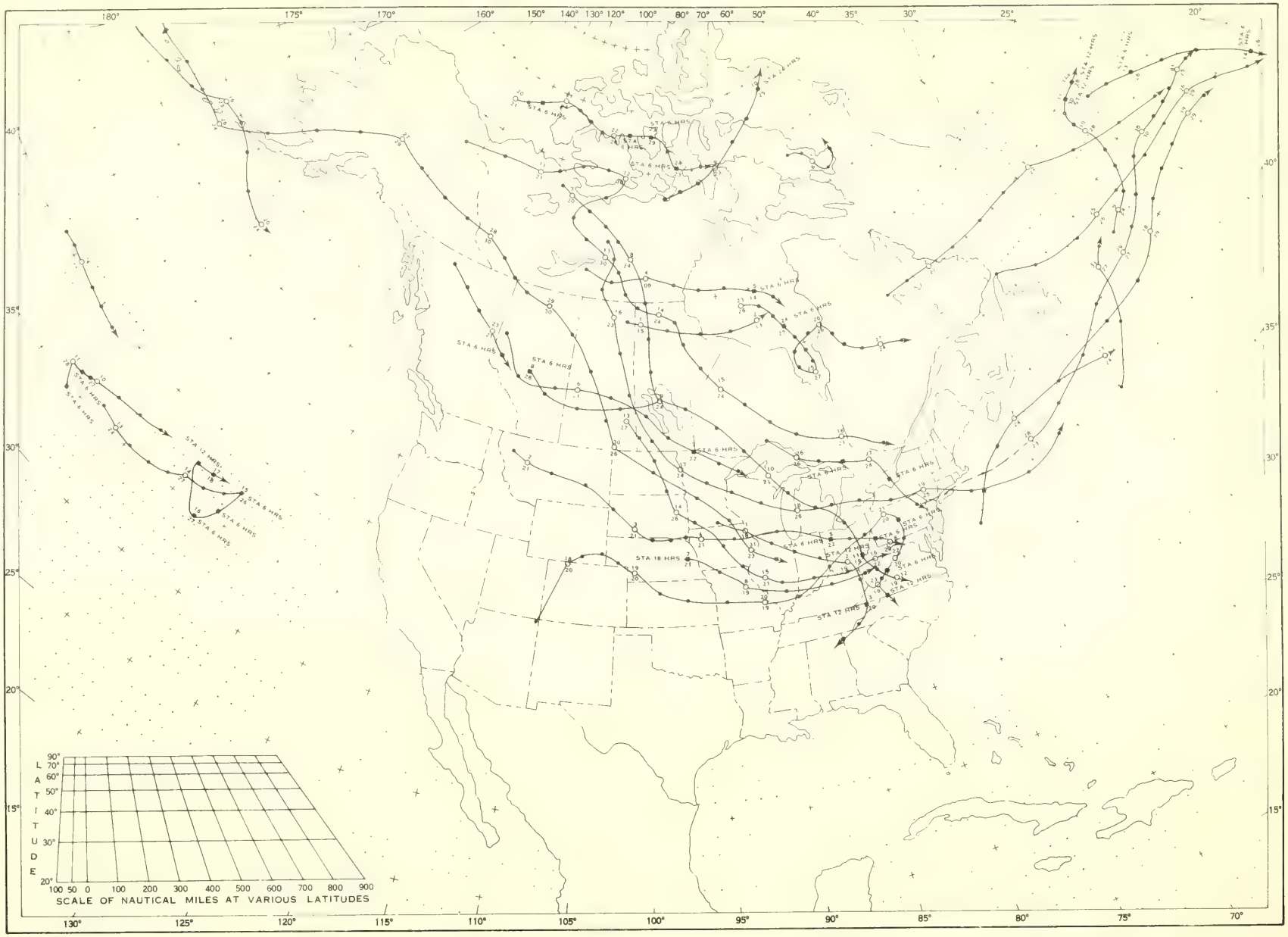


B. Percentage of Mean Daily Solar Radiation, August 1963.



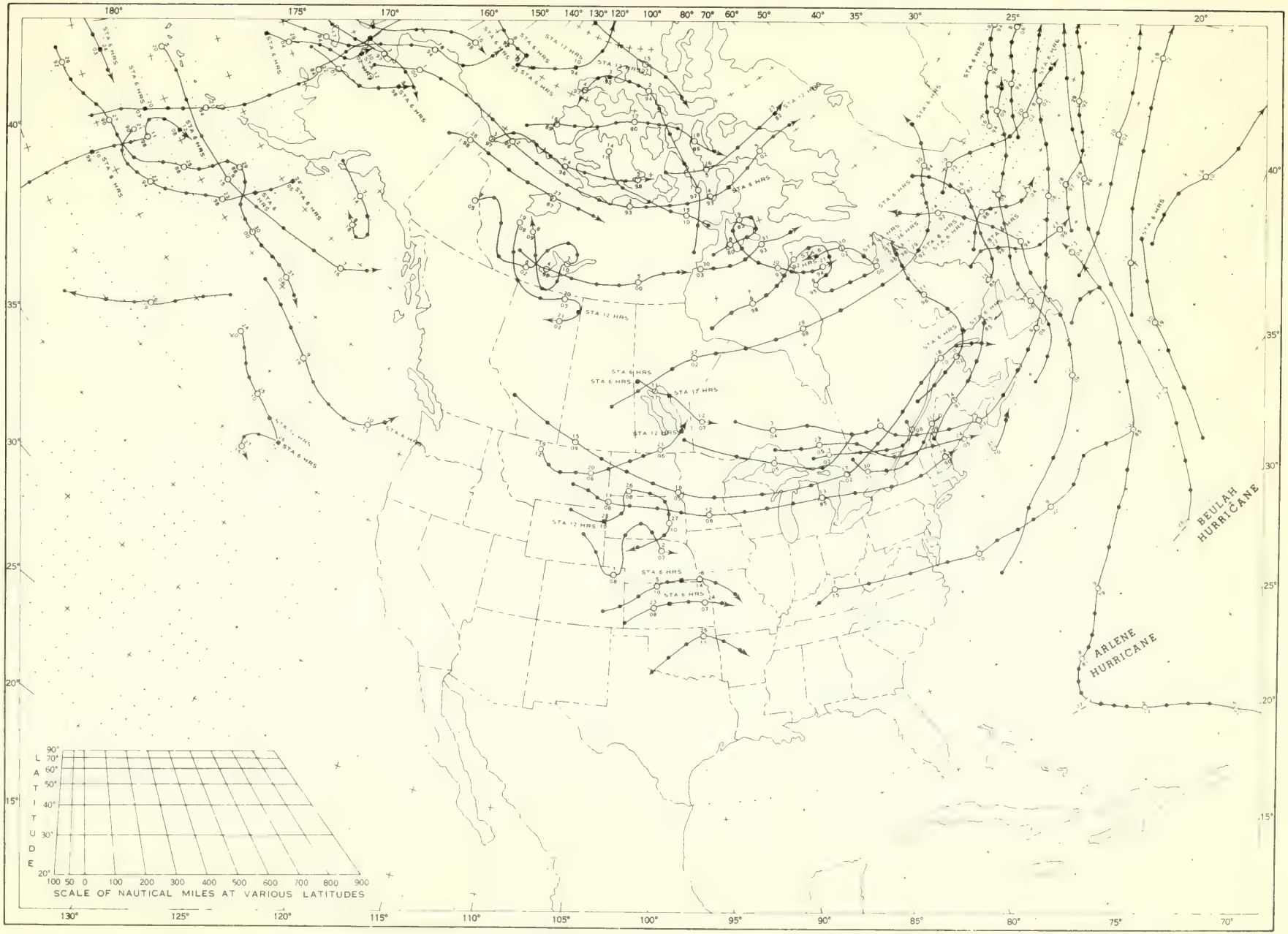
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, August 1963.



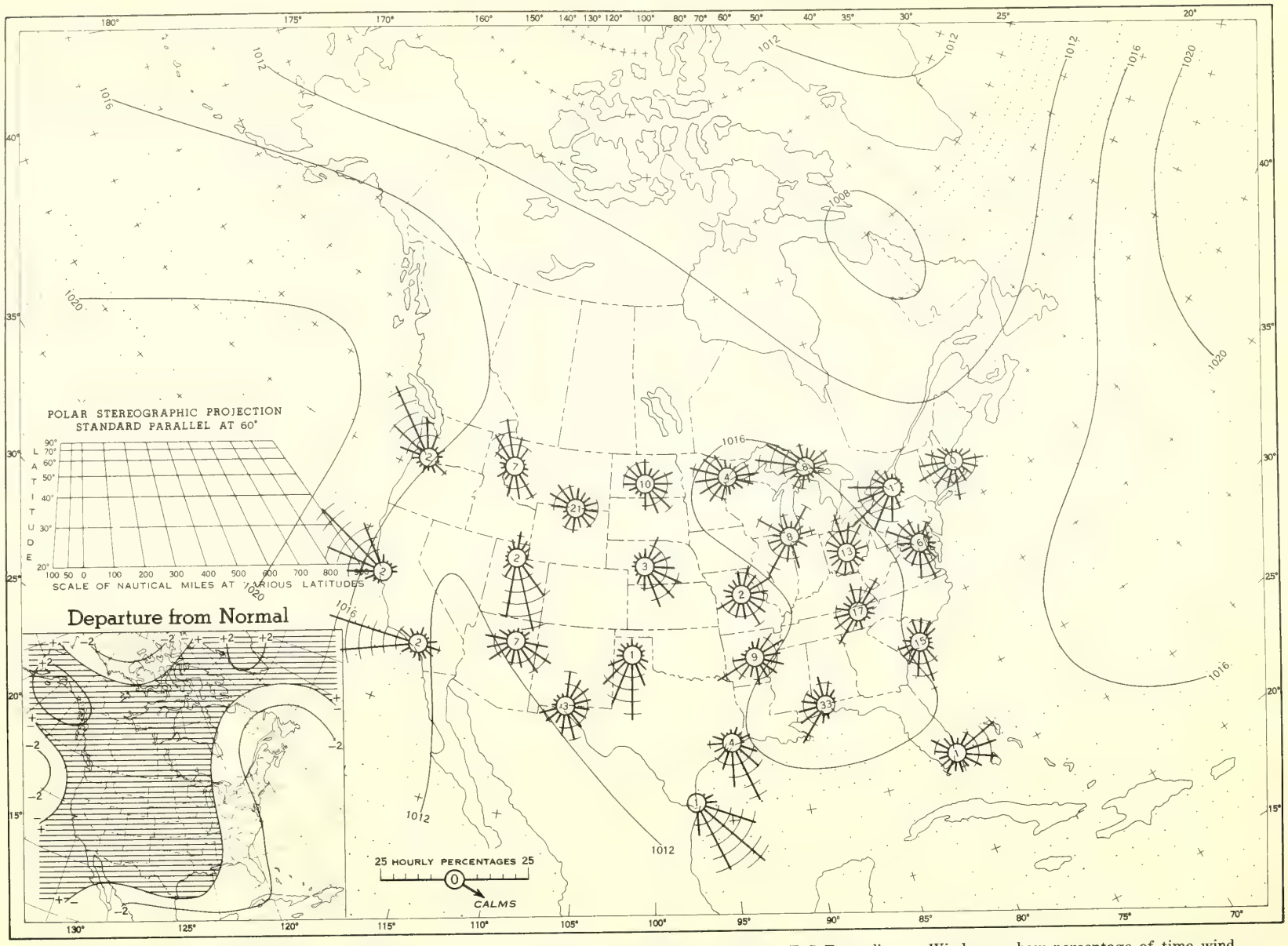
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, August 1963.



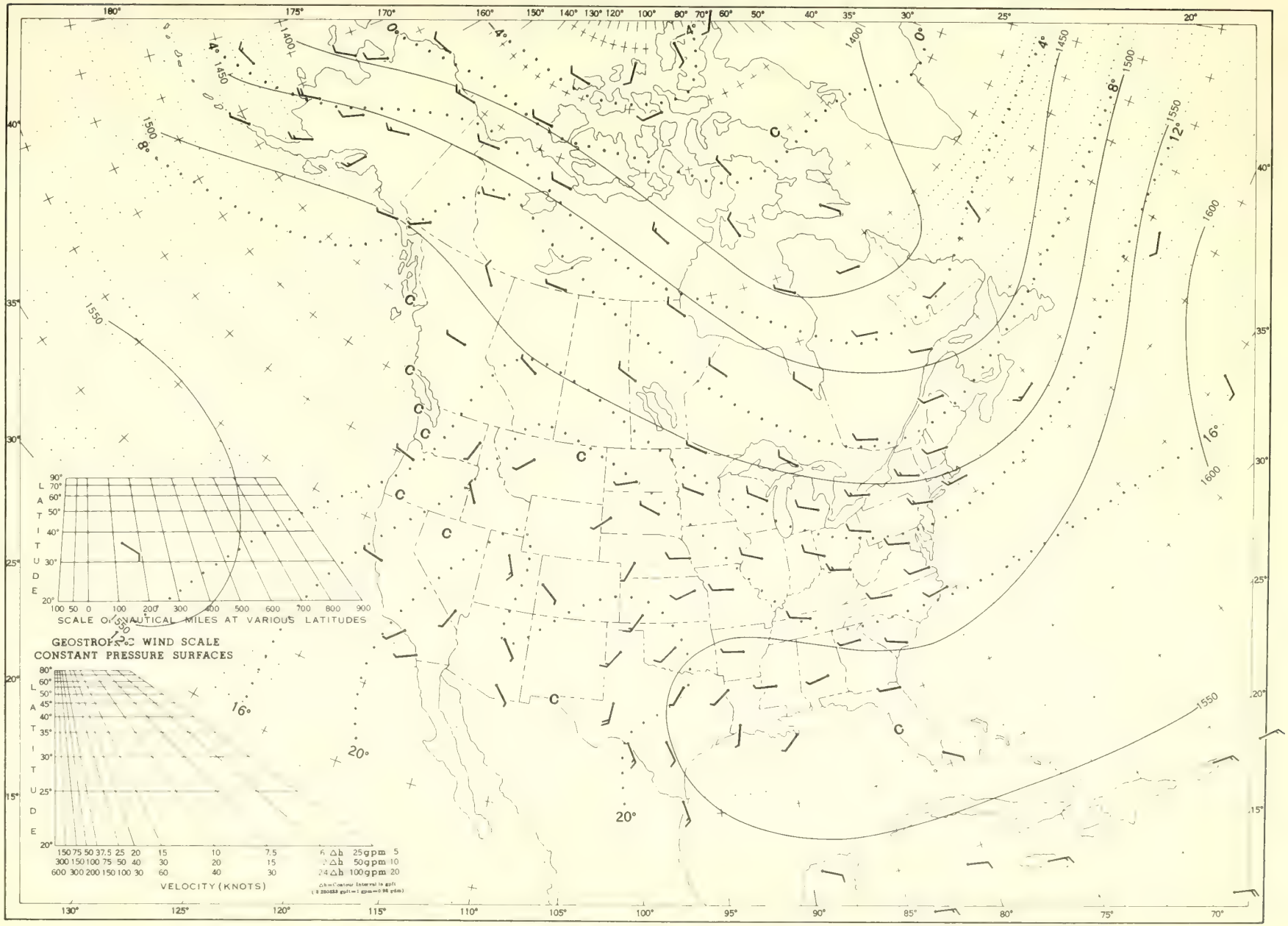
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, August 1963. Inset: Departure of Average Pressure (mb.) from Normal, August 1963.



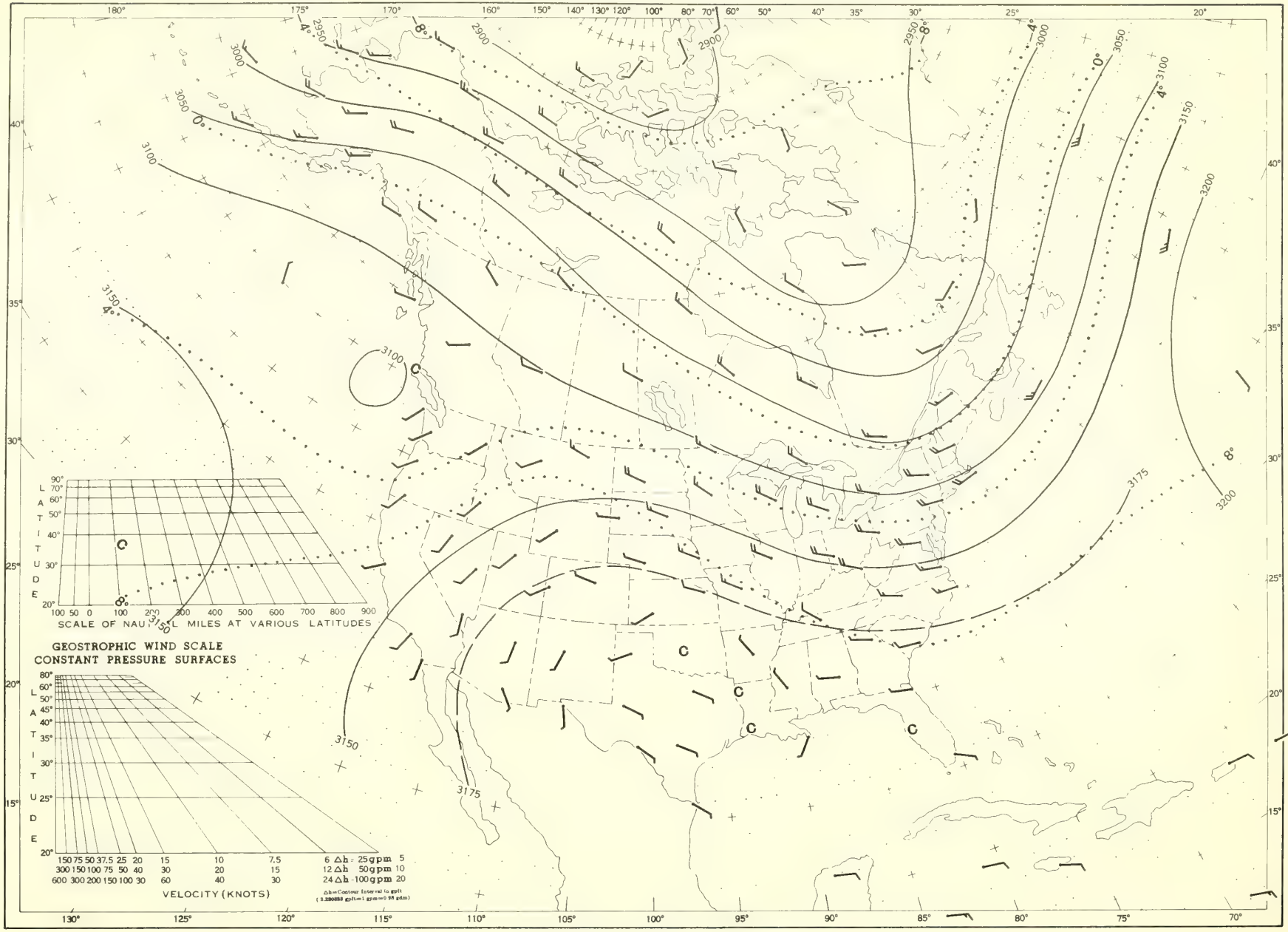
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.



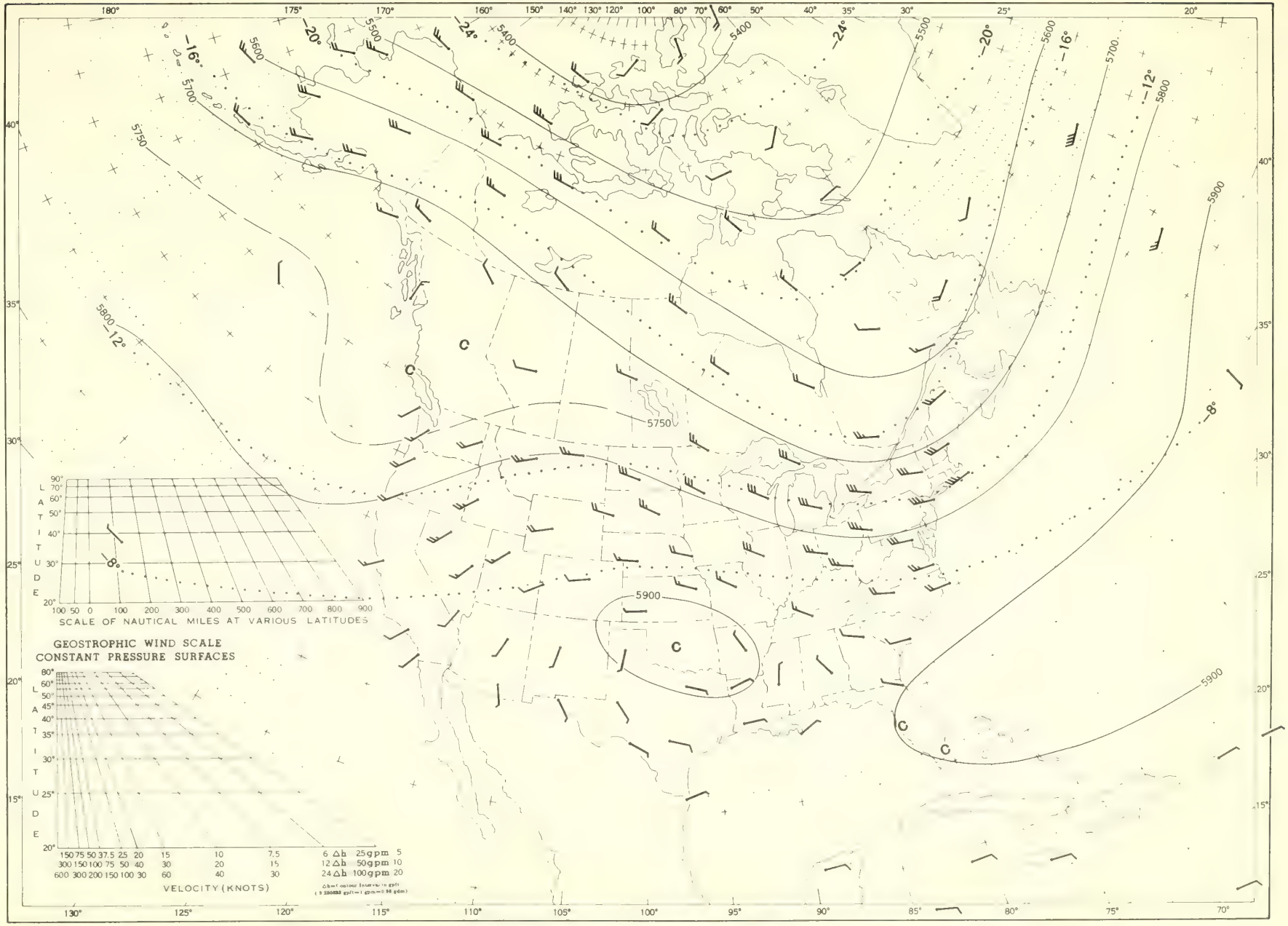
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.



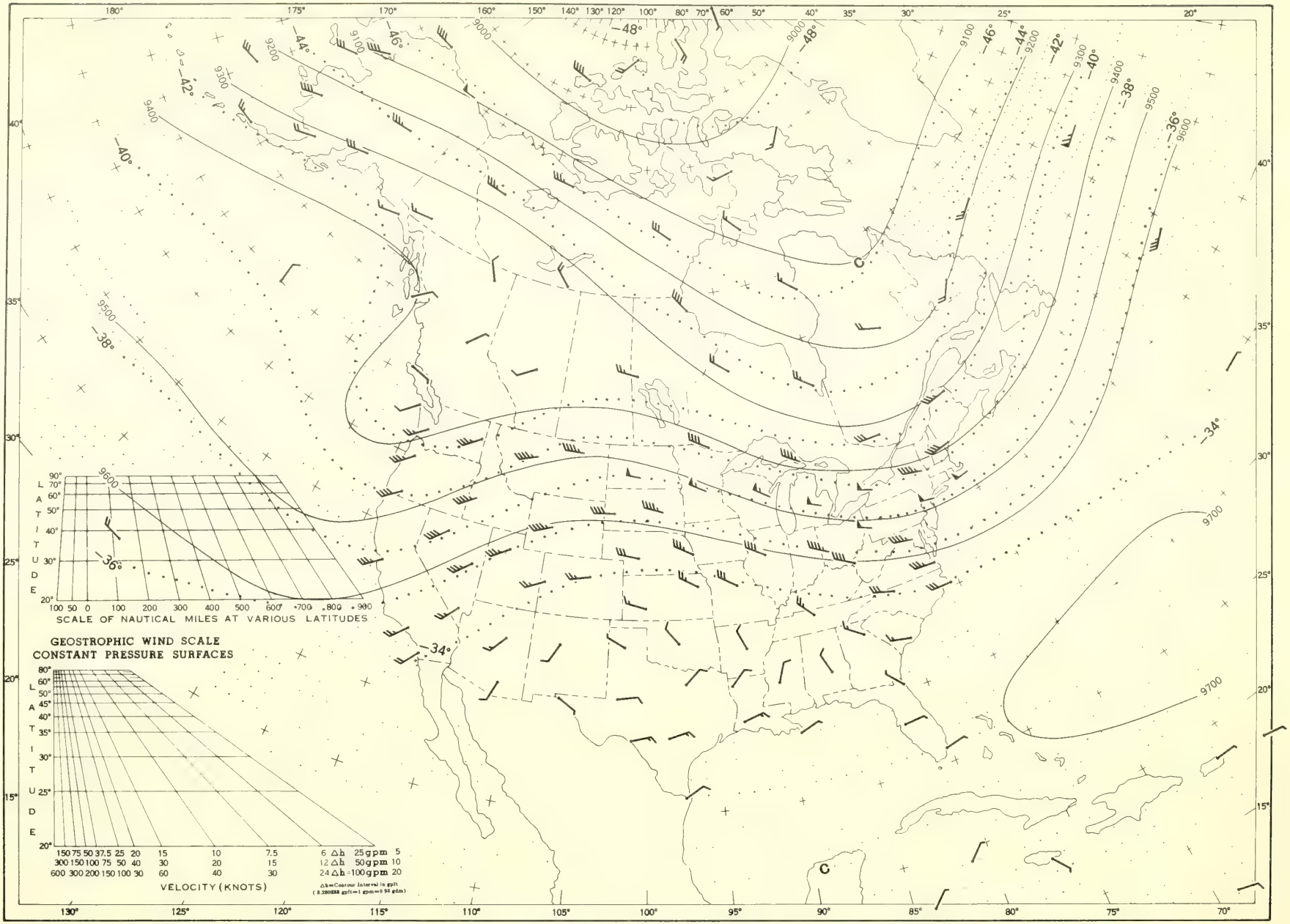
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.



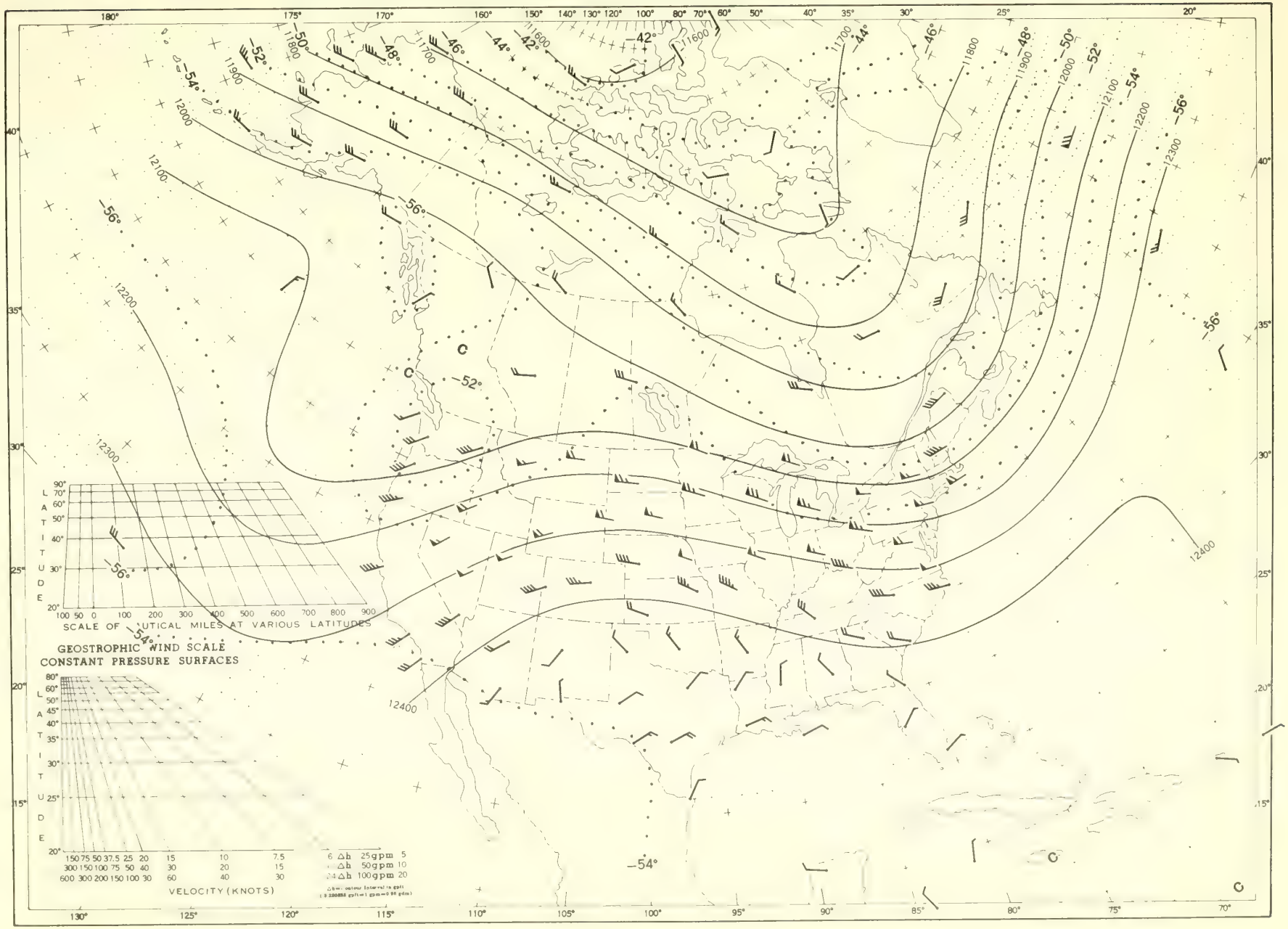
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.



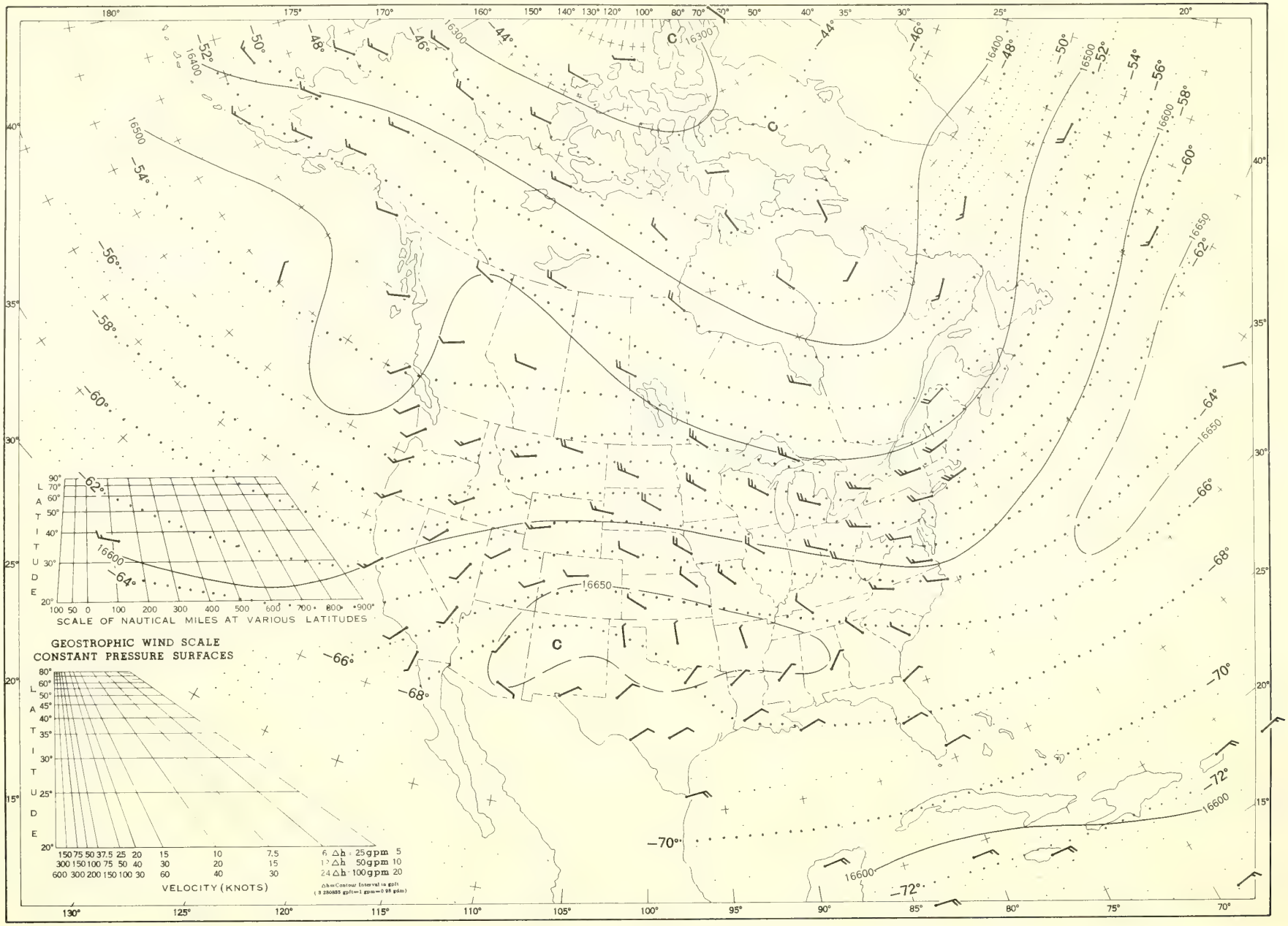
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.



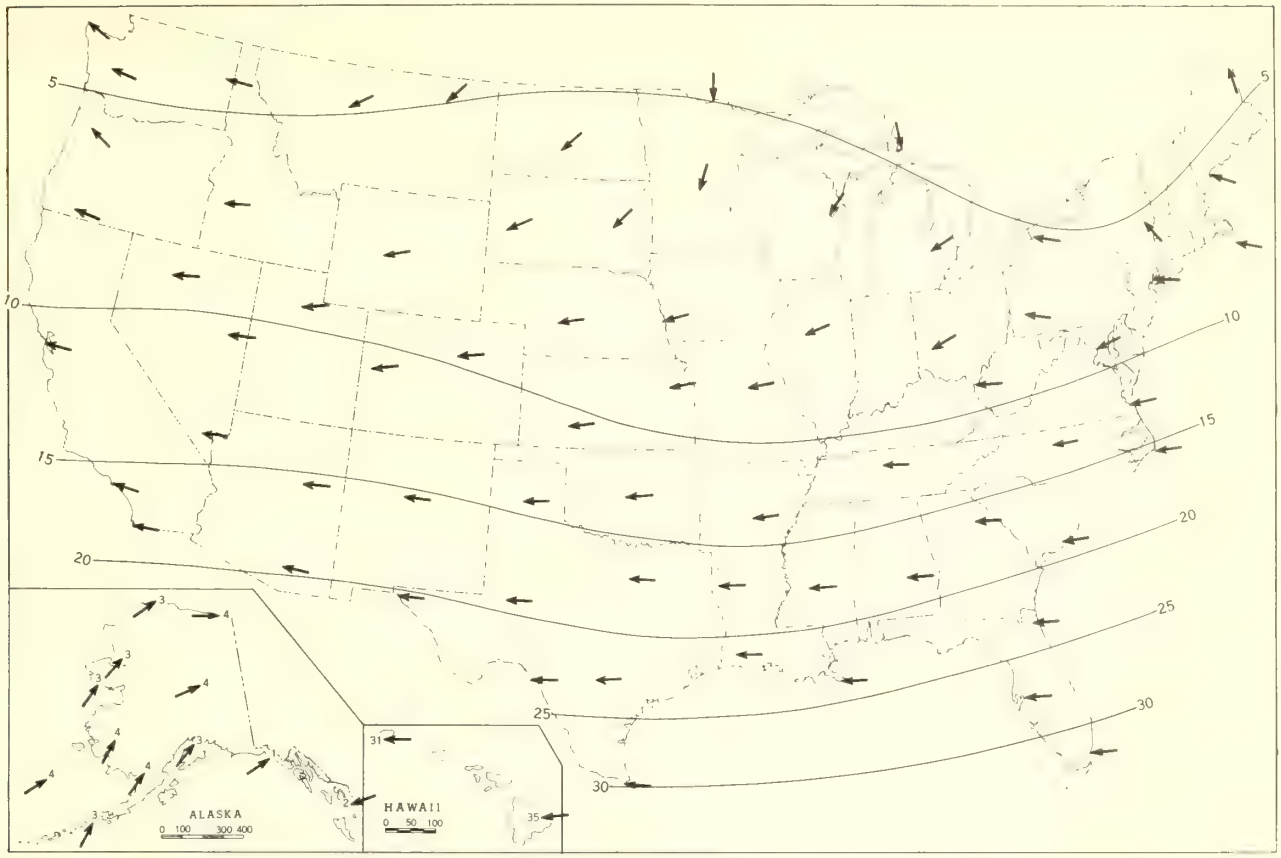
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, August 1963. Average Height and Temperature, and Resultant Winds.

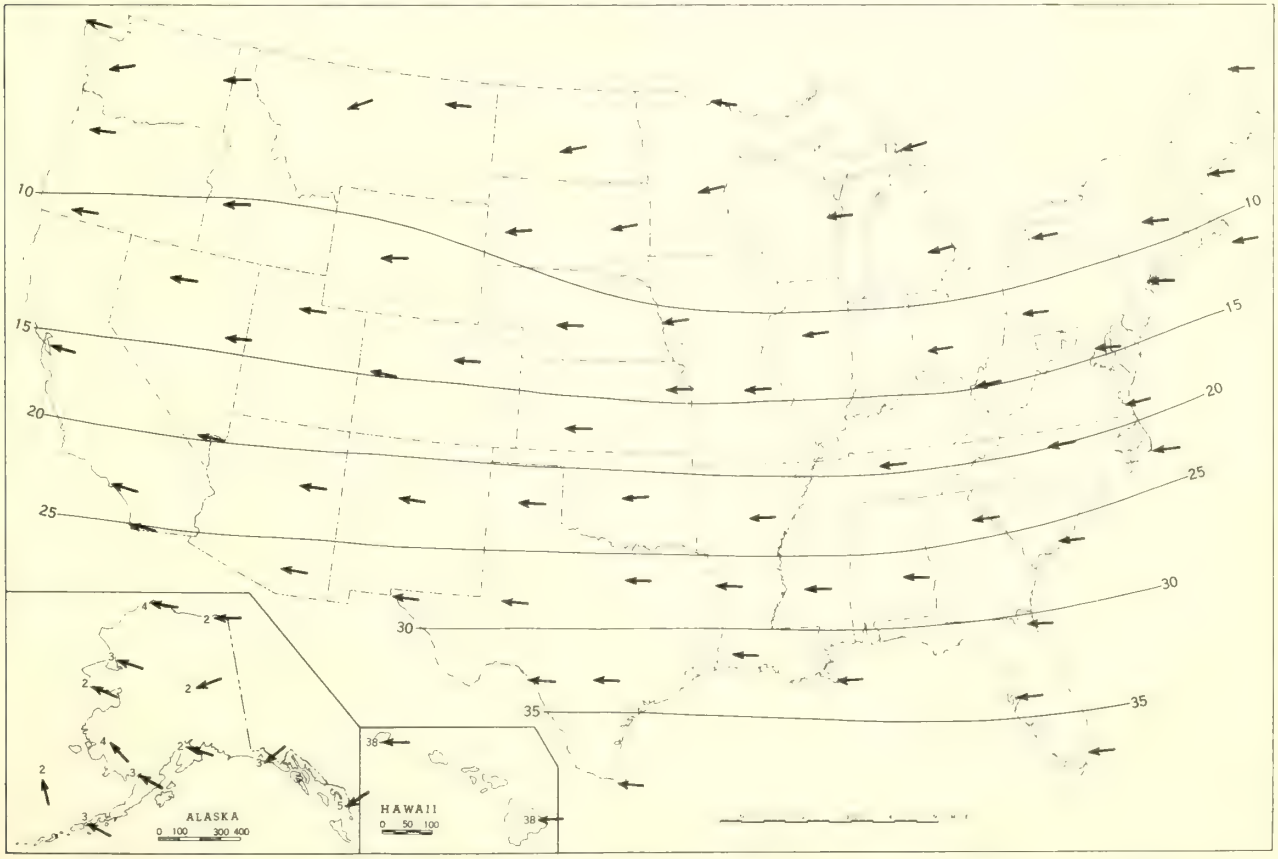


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, August 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, August 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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Volume 14 No. 9

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 9 SEPTEMBER 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

High pressure prevailed over the eastern half of the Nation at the beginning of September. Skies were clear and afternoon temperatures ranged from the 70's over the Northeast to the 90's over the Southeast. The skies were partly cloudy from the Pacific Ocean to the Rocky Mountains. A low pressure area developed over Colorado and, as it moved northeastward, dumped generous rains over the central Great Plains and Lake region. Valentine, Nebr., received 1.33 inches on September 1 and Wausaw, Wis., received 3.60 inches on the 2d.

Hot weather prevailed over the southwestern deserts, over the interior valleys of California, and at a few locations in the Far Northwest. Red Bluff, Calif., registered 102° on September 3 and 105° on the 4th. Boise, Idaho, registered 100° on the 5th.

About the end of the first week of September, a mass of polar continental air pushed southward across the midsection of the Nation. Showers and thunderstorms occurred over the central and southern Great Plains and lighter rains near the Great Lakes. Goodland, Kans., received 2.33 inches on September 7. Afternoon temperatures continued near or above 90° over most of the Southland through the second week of September. It was considerably cooler in the Northeast. Some stations in the northern tier of States registered afternoon maximums in the upper 50's and 60's and early morning temperatures dropped to below freezing at numerous locations in New York, New England, and at higher elevations in the Appalachians farther south.

Several waves developed along a front extending irregularly from San Francisco, Calif., to Duluth, Minn. Some thunderstorm activity occurred along portions of the front. North Platte, Nebr., received 2.50 inches on September 15 from one of these disturbances.

Hurricane Cindy, the third hurricane of the season in our east coast tropical waters, approached the Texas and Louisiana coast on the 16th.

While Cindy was producing heavy rains along the Gulf, a hurricane in the Pacific approached the coast of southern California. It produced drenching rains over the southern portion of that State and nearby portions of Arizona and lighter rains over the Great Basin. Yuma, Ariz., received 2.42 inches of rain on September 17 from this storm. This amount is four times the September normal for Yuma and two-thirds of the annual normal.

The following day, precipitation fell over a broad band bounded on the north by a line from Eureka, Calif., to Lewiston, Mont., and continuing northeastward, and on the south by a line from San Diego, Calif., to Cheyenne, Wyo., and to northern Lower Michigan. As the eastern end of the front dropped southward, it produced rains over the Border States to New England. Meanwhile, afternoon temperatures ranged from the 60's and 70's along the Northern Border to the middle 80's over the central and southern portions of the Country. The thermometer reached 90° at a few areas in the central Great Plains and over the southwestern deserts.

By the end of the third week of September, high pressure and fair weather dominated the weather over the eastern half of the Nation. Early morning temperatures dropped to below freezing over parts of New England, New York, and the higher elevations in Pennsylvania and the Virginias. High pressure also prevailed over the Far West. Frontal weather occurred between these two mounds of high pressure. Omaha, Nebr., received 1.21 inches from showers on the 23d. Lesser amounts fell over most of Nebraska, Iowa, and northward to the Canadian Border. A disturbance in the Atlantic provided copious rains over the Florida Peninsula and light rains fell over New England.

About the middle of the fourth week of September, the front that had separated the two high pressure areas dissipated and fair weather prevailed over almost the entire continental United States. The principal exceptions were Alabama, Florida, and adjacent areas which received light rains.

On Friday morning, September 27, two high pressure areas - one centered over British Columbia and the other centered over the Hudson Bay - pushed southward into the northern tier of States. A low pressure system developed over the eastern part of the Gulf of Mexico and brought some generous rains to the southern half of Dixie. Montgomery, Ala., received 2.36 inches of rain from this storm on the 27th. The cold front advancing from the north and the storm moving northeastward across Florida from the Gulf brought generous rains to most of the country east of the Mississippi River on the 28th and 29th. The western half of the Nation remained clear. The storms moved off the Atlantic coast just before the end of September and on the final day, bright skies and mild temperatures prevailed over the entire Country.

Repeated invasions of polar continental air over the eastern portion of the Country kept the average temperatures east of the Mississippi below the monthly normals. Most eastern areas averaged from 2° to 4° below normal. In contrast, temperatures west of the Mississippi averaged above normal. The largest departures were in the Northwest where the temperatures in some areas averaged 6° above normal.

September rainfall was spotty. Some places in Texas, in the northern Great Plains, in the Ohio River Valley, and in Mississippi and Alabama received less than 2 inches of rain during the month. In contrast, September totals exceeded 4 inches along the middle Atlantic coast, ranged from 6 to 12 inches over the lower half of Florida, and exceeded 16 inches in the extreme southeastern part of Texas and the extreme southwestern part of Louisiana.

CONDENSED CLIMATOLOGICAL SUMMARY

SEPTEMBER 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	2 Stations	99	12+	Heflin	39	24	Newton	9.68	Muscle Shoals FAA AP	0.29
Arizona	Yuma Valley	115	12	Fort Valley	27	21	Beaverhead Lodge	5.02	2 Stations	.00
Arkansas	4 Stations	102	3+	Gravette	33	30	Clarendon	4.02	do	.07
California	Palm Springs	116	28	White Mountain 2	20	19	Squirrel Inn 1	7.74	20 Stations	.00
Colorado	Eversoll Ranch	99	2	Fraser	15	30+	Yuma	5.52	Placerville	.00
Connecticut	Hartfort WB Airport	88	19	Coventry	22	25	Middletown 4W	6.17	Bridgeport WBAP	1.94
Delaware	4 Stations	90	12	2 Stations	33	25	Bridgeville 1NW	6.69	Dover	3.30
Florida	Monticello 2S	102	13	De Funiak Springs	48	30	Saint Augustine	21.80	Milton Exp Sta.	2.36
Georgia	2 Stations	99	13	Blue Ridge	34	25	Midville Exp Sta.	9.63	Kensington	1.16
Hawaii	3 Stations	91	25+	Mauna Loa Slope Obs.	32	14	Honomu Mauka 138	20.23	Halepohaku 111	.15
Idaho	Slate Creek RS	102	9	Warren	24	18	Wayan	4.71	Riggins RS	.31
Illinois	Harrisburg	97	20	Harrisburg	32	30	Antioch	4.24	Wilcox	.00
Indiana	Marion 2N	98	20	Greensburg 3SW	27	30	Hobart	3.15	Portland 1SW	T
Iowa	2 Stations	95	8	Saratoga 2E	27	13	Sidney	5.97	Osage	.49
Kansas	4 Stations	101	7+	2 Stations	34	29	Mankato	9.44	Bonner Springs	.61
Kentucky	Dema	97	8	Blaine 1W	26	25	Burdine 2NE	3.76	Cobb	T
Louisiana	Logansport	105	4	Logansport	38	30	Vinton	20.73	Tallulah Delta Lab.	.42
Maine	Hiram 2S	85	19	Eustis 2	19	24	Machias	7.73	West Forks	1.13
Maryland	Leonardtown 3NW	93	12	Emmitsburg 2SE	24	25	Pocomoke City 1S	7.35	Westernport	1.26
Massachusetts	Lowell	89	19	Birch Hill Dam	21	24	Nantucket WBAP	6.59	Pittsfield WBAP	2.73
Michigan	Monroe Sewage Plant	90	19	2 Stations	21	13	Montague	5.76	Coldwater State School	.58
Minnesota	Brainerd RS	94	8	Cotton 7E	22	13	Cambridge State Hosp.	7.27	Halstad	.20
Mississippi	7 Stations	99	11+	University	36	30	Pearlington 2NNE	10.39	Clarksdale	.02
Missouri	2 Stations	100	3+	2 Stations	30	30	Maryville 2E	6.06	Licking 4N	.11
Montana	8 Stations	97	30+	Summit	22	20	Yellowstone Park NE Ent.	4.87	2 Stations	T
Nebraska	2 Stations	98	7	Arthur	30	29	Guide Rock	10.02	Winside	.88
Nevada	do	108	12	Charleston	21	24	Pioche	3.61	Dufurrena	.14
New Hampshire	do	88	19	Grafton	16	24	Portsmouth	4.10	Jefferson 4S	1.05
New Jersey	5 Stations	89	13+	Newton	24	24	Clinton	8.57	Ringwood	2.38
New Mexico	Jal	100	9+	Eagle Nest 1S	18	30	Ribera	10.17	2 Stations	.00
New York	Poughkeepsie	90	9	Indian Lake 2SW	18	25+	New York Ave. V Brooklyn	6.39	North Creek	.65
North Carolina	Whiteville	96	4	Transou	26	25	Goldsboro 1SSW	8.72	North Fork 2	1.98
North Dakota	4 Stations	96	30+	Medora 3 NNE	24	29	Bowman Court House	2.82	3 Stations	.06
Ohio	do	92	19+	2 Stations	25	30+	Higginsport	2.90	do	T
Oklahoma	3 Stations	106	11+	4 Stations	36	30	Billings	7.25	Idabel	.11
Oregon	2 Stations	104	26+	Chemult 20SE	24	25	Clatskanie 3W	4.48	Chemult 20SE	T
Pennsylvania	Bethlehem Lehigh Univ.	92	9	2 Stations	19	24	Clarence	7.06	Natrona Lock 4	.30
Puerto Rico	Juana Diaz Camp	97	12	do	60	27+	Lares	21.05	Culebra Island	.74
Rhode Island	Providence WBAP	84	19	Kingston	28	25	Greenville	4.83	Block Island WBAP	1.62
South Carolina	2 Stations	98	5+	Caesars Head	36	24	Chester 2WSW	9.51	Georgetown Marine Docks	2.35
South Dakota	do	100	8+	Ralph	22	29	Platte	5.65	Kyle	.24
Tennessee	Brownsville	97	3	Mountain City 2	28	25	Statesville	5.79	Pulaski Water Plant	.35
Texas	Kaufman	109	8	5 Stations	38	30+	Orange Gulf States Util.	25.27	2 Stations	.00
Utah	Saint George PH	101	12+	Strawberry Hwy Station	25	24+	Bryce Canyon NP HDQ	3.89	Cisco	.15
Vermont	Vernon	87	20	Chelsea	15	25	Bloomfield	3.46	Waterbury 1NNE	.46
Virginia	Tye River 1SE	97	3	Monterey	24	24	Driver 4NE	8.98	Pennington Gap	1.46
Washington	Dallesport FAA AP	101	9	Mount Spokane Summit	26	15	Grays River Hatchery	6.88	Wawawai 2NW	.00
West Virginia	Ravenswood Dam 22	95	12	Arbovale 2	20	24	Weston	4.73	Wellsburg 3NE	.06
Wisconsin	2 Stations	89	18+	Superior 7SE	19	13	Breed	6.77	Arlington University Farm	1.16
Wyoming	Arvada 3N	98	7	Foxpark	21	25	Lamar RS	4.71	Grass Creek	.12

\+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90°F. or above	Temperature: No. of days: Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	992.4	1017.5	85	62	73.5	- 0.8	94	10	53	30+	11	0	61	69	1.21	- 2.12	0.55	5	2	0.0	0	6.6	E	26	E	23+	12	10	8	5.2	65
HUNTSVILLE	605	996.1	1017.8	85	61	73.2	- 1.3	95	11+	48	30	11	0	59	66	0.97	- 2.12	0.26	5	1	0.0	0	7.6	NNE	33*	NNW	29	14	6	10	4.7	
MOBILE	211	1012.6	1015.0	86	68	77.3	- 0.1	94	22	54	30	14	0	66	71	0.58	- 5.67	0.24	7	4	0.0	0	7.1	NE	25*	NNW	29	11	9	10	5.4	
MONTGOMERY	195	1008.3	1016.3	87	64	75.7	- 1.4	97	11	52	24	17	0	62	68	3.90	- 0.07	2.92	5	2	0.0	0	7.5	E	27	N	4	15	4	11	5.0	63
ALASKA												B																				
ANCHORAGE	90	998.4	1003.3	60	44	52.0	4.2	70	2	35	23	1	0	45	86	0.98	- 1.52	0.34	14	0	0.0	0	3.8	SE	26*	SE	27	4	7	19	7.4	44
ANNETTE	110	1006.3	1010.3	61	53	57.0	3.4	73	10	46	22	2	0	52	86	16.96	7.08	2.84	24	1	0.0	0	12.4	SSE	51*	ESE	24	3	3	24	8.5	
BARROW	22	1013.6	1014.3	33	27	29.6	- 0.9	37	13	17	25+	0	30	27	89	0.19	- 0.45	0.10	8	0	1.5	1	15.6	E	35*	E	1	0	3	27	9.3	
BARTER ISLAND	39	1012.1	1014.0	35	28	31.6	- 0.5	47	28	19	26+	0	27	27	84	0.12	- 0.82	0.11	2	0	1.2	1	12.6	ENE	29*	E	9	6	9	15	6.5	
BETHEL	125	1001.1	1002.5	56	41	48.4	3.8	69	4	29	25	0	4	44	86	1.99	- 0.60	0.71	14	0	T	T	9.6	NNE	35*	S	27	3	5	22	7.9	
COLD BAY	94	998.4	1002.3	52	45	48.5	1.0	60	6	32	25	0	1	45	86	3.61	- 0.71	0.64	19	0	0.0	0	15.5	WNW	41*	SSE	28+	0	0	30	9.5	
CORDOVA	40	1002.5	1004.2	58	44	50.9	3.3	69	5	34	15	0	0	47	90	7.57	- 4.94	1.87	24	0	0.0	0	5.5	E	21*	E	27+	1	2	27	9.1	
FAIRBANKS	436	989.9	1006.9	59	37	47.9	4.3	80	1	25	26	3	9	34	63	0.19	- 0.91	0.18	2	0	0.0	0	6.0	N	20*	NE	13+	10	12	8	5.0	
JUNEAU	17	1006.5	1007.8	57	47	52.2	3.3	68	1	35	28	0	0	48	89	8.05	1.38	1.03	24	0	0.0	0	10.1	ESE	36*	ESE	29	1	0	29	9.7	13
KING SALMON	43	1001.3	1001.4	60	43	51.1	3.2	70	2	31	22	1	2	45	82	2.16	- 0.92	0.64	15	0	0.0	0	9.9	N	51*	ESE	26	1	7	22	8.5	
KOTZEBUE	10	1007.0	1007.5	50	36	43.2	2.3	68	1	24	22	0	9	34	74	0.89	- 0.33	0.45	7	0	0.4	T	13.3	E	31*	WSW	28+	14	3	13	5.2	
MC GRATH	334	991.9	1004.6	57	35	46.1	2.2	69	4+	24	25+	0	11	37	73	0.34	- 2.27	0.32	4	0	0.0	0	5.0	N	25	SSW	27	10	4	16	6.1	
NOME	13	1004.3	1004.9	51	37	44.0	2.1	62	13	25	24	0	11	37	76	0.86	- 1.81	0.56	7	0	T	T	10.9	N	32*	ENE	26	11	7	12	5.4	51
ST. PAUL ISLAND	22	1001.8	1002.8	48	40	43.9	- 0.7	53	4	30	2	0	4	42	89	2.97	- 0.10	1.02	19	0	T	T	15.1	NNW	37*	NNW	30	0	1	29	9.6	
SHEMYA	122	1001.7	1005.4	50	45	47.7	- 0.6	53	16+	40	28	0	0	45	91	2.85	0.60	0.51	22	0	0.0	0	15.4	WNW	40*	NNE	27	0	4	26	9.2	
YAKUTAT	28	1004.8	1005.9	57	47	52.1	2.9	66	3	33	16	0	0	49	90	18.41	1.86	5.02	23	1	0.0	0	6.4	E	26*	ESE	17+	0	3	27	9.5	
ARIZONA																																
FLAGSTAFF	6993	794.1	1017.3	76	43	59.2	0.7	83	27	32	22+	0	2	42	62	0.79	- 0.79	0.30	6	10	0.0	0	5.3	N	21*	SSW	22+	15	9	6	3.9	
PHOENIX	1117	971.3	1009.4	99	71	85.1	0.8	106	11+	61	22	29	0	53	36	T	- 0.73	T	0	2	0.0	0	6.9	ESE	36*	N	9	23	4	3	2.3	90
PRESCOTT	5014	848.9	1013.9	84	54	69.2	0.5	91	27+	44	21	3	0	48	53	0.88	- 0.31	0.46	4	6	0.0	0	7.6	SSW	51	S	18	18	7	5	3.2	83
TUCSON	2584	924.2	1010.1	95	70	82.4	1.5	101	12	63	30	28	0	52	40	1.45	0.45	1.15	4	8	0.0	0	9.2	ESE	33	SW	4	20	5	5	3.1	84
WINSLOW	4880	853.9	1015.2	87	56	71.8	0.6	93	21	49	30+	7	0	49	53	1.16	0.25	0.45	6	6	0.0	0	7.4	SW	33*	NNW	13	17	8	5	3.3	
YUMA	199	1003.1	1008.5	104	75	89.9	0.8	114	8	67	21	30	0	57	40	2.47	2.09	2.42	2	1	0.0	0	7.0	SSE	31	E	10+	23	3	4	2.1	89
ARKANSAS																																
FORT SMITH	449	1000.5	1017.4	87	63	74.7	- 0.2	100	3	40	30	11	0	62	69	1.90	- 1.74	1.32	5	2	0.0	0	6.3	ENE	34	W	11	13	7	10	5.1	64
LITTLE ROCK	257	1004.5	1017.6	87	63	74.7	0.4	102	3	44	30	12	0	65	76	1.81	- 1.42	0.80	5	3	0.0	0	6.3	NE	29	NW	29	11	8	11	5.2	70
TEXARKANA	361		1016.8	86	66	76.1	- 0.4	96	4+	47	30	10	0	65	75	0.57	- 2.16	0.40	4	1	0.0	0	7.6	NE								92
CALIFORNIA																																
BAKERSFIELD	494	994.1	1011.6	89	65	77.2	0.7	107	26	59	23	15	0	57	54	0.83	0.75	0.52	3	0	0.0	0	4.8	NW	15*	NW	3	21	3	6	2.8	
BISHOP	4108	874.4		89	50	69.5	1.8	96	28	42	20	19	0			0.38	0.19	0.18	4	1	0.0	0						20	4	6	3.1	
BLUE CANYON	5280	841.2		73	55	63.8	0.4	85	26	44	17	0	0			0.99	0.36	0.75	4	0	0.0	0	6.1	SSW	28	ENE	18	16	4	10	4.0	
BURBANK	699	985.9	1011.4	89	64	76.3	3.7	106	28+	57	20	14	0	56	58	0.83	0.56	0.34	5	1	0.0	0	5.6	S	20*	SSW	26	21	4	5	2.7	
EUREKA U	43	1013.0		65	54	59.4	3.0	76	11	51	7	0	0			0.68	0.04	0.57	5	0	0.0	0	5.3	N#	26	S	22+	3	8	19	7.5	52
FRESNO	326	999.6	1011.3	91	62	76.6	2.7	107	26	56	21	19	0	55	53	0.15	0.05	0.15	1	1	0.0	0	6.0	WNW	20	NW	12	22	3	5	2.6	86
LONG BEACH	34	1010.1	1011.7	87	64	75.4	4.3	110	26	59	14	11	0	59	65	1.31	1.25	0.84	4	2	0.0	0	5.7	WNW	20*	WNW	28+	18	6	6	3.4	
LOS ANGELES	97	1007.7	1011.5	83	66	74.6	7.9	110	26	61	11	6	0	61	70	1.13	0.96	0.49	3	2	0.0	0	7.3	WSW	20*	SE	18+	17	7	6	3.6	
LOS ANGELES U	312			87	67	77.3	5.4	109	26	61	20	12	0			1.31	1.08	0.71	5	2	0.0	0	5.8	W#	19	W	28	21	4	5	2.8	80
MT SHASTA R	3544	892.6		79	47	63.2	1.7	92	26+	40	17+	4	0			0.65	- 0.22	0.45	3	1	0.0	0						18	7	5	3.4	
OAKLAND	3	1013.1	1013.4	74	59	66.6	1.5	87	2	55	24+	0	0	56	75	0.28	0.08	0.28	1	1	0.0	0	7.8	WNW	21*	WNW	15	14	10	6	4.0	
POINT ARGUELLO R	367	999.0		71	53	61.9	2.1	81	11	50	30+	0	0			0.89	0.78	0.56	5	2	0.0	0	5.0		18*	W	15	8	9	13	5.8	
RED BLUFF	341	999.2	1011.8	91	61	75.7	- 0.3	105	4	52	23	15	0	47	41	T	- 0.37	T	0	0	0.0	0	7.8	NW	29	NW	15	18	5	7	3.4	82
SACRAMENTO	17	1010.8	1012.4	89	58	73.9	0.3	104	26+	52	23	15	0	56	62	0.47	0.28	0.47	1	1	0.0	0	4.7	SW	22	W	9	18	5	7	3.4	82
SACRAMENTO U	23			88	60	73.8	0.9	103	26	53	23	13	0			0.35	0.13	0.34	2		0.0	0										
SANDBERG R	4517	863.2		80	60	69.9	0.6	90	11	48	20+	1	0			2.52	2.31	1.12	4	3	0.0	0	10.1	S	28*	S	18+	22	4	4	2.4	
SAN DIEGO	13	1007.7	1011.0	82	66	74.3	4.9	111	26	63	25+	5	0	62	71	1.90	1.75	0.90	5	0	0.0	0	7.5	NW	23	SW	29	15	10	5	3.9	72
SAN FRANCISCO	8	1013.0	1013.7	76	56	66.3	2.4	93	26	53	24+	1	0	55	74	0.07	- 0.12	0.07	1	1	0.0	0	10.4	WNW	32	W	15	18	7	5	3.3	
SAN FRANCISCO U	52			72	57	64.7	2.7	88	26	54	30	0	0			0.06	- 0.16	0.06	1	1	0.0	0	8.4	W#	24	W	15					78
SANTA CATALINA	1568	956.8		83	67	74.7		101	26	53	5	9	0			2.29		1.16	3	2	0.0	0						20	3	7	3.0	
SANTA MARIA	238	1004.3	1013.0	77	54	65.4	2.6	92	27	49	10	1	0	56	81	0.39	0.23	0.17	3	2	0.0	0	5.9	NW	22*	NW	23+	18	6	6	3.7	
STOCKTON	28	1010.5	1012.2	89	60	74.2		102	3	52	21	15	0	53	55	0.26		0.26	1	1	0.0	0	7.3	NW	22*	W	15	19	5	6	3.3	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 °F. or above	Temperature: No. of days: Min. 32 °F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
COLORADO	Ft.	Mb.	Mb.	F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALAMOSA	7536	776.7		77	39	57.8	2.1	82	4	29	30	0	4			0.15	- 0.62	0.07	3	7	0.0	0						19	7	4	3.3	
COLORADO SPRINGS	6173	816.9	1018.5	78	53	65.4	4.3	87	18	40	29	0	0	48	58	1.84	0.77	0.73	7	10	0.0	0	8.6	NNE	29*	N	28	10	12	8	4.7	
DENVER	5283	841.1	1016.0	82	50	65.9	2.4	92	18	40	28	3	0	46	56	1.25	0.12	0.61	9	6	0.0	0	7.9	S	28	NW	8	12	14	4	4.2	84
GRAND JUNCTION	4849	861.6	1015.0	84	56	69.8	2.0	90	27	48	1	1	0	40	40	0.48	- 0.43	0.20	3	3	0.0	0	5.1	SE	30	W	13	18	7	5	3.4	81
PUEBLO	4639	859.2	1015.4	85	55	70.1	3.5	93	18	44	29	7	0	49	53	0.98	0.14	0.44	7	8	0.0	0	9.2	SSE	42	N	28	15	12	3	3.6	84
CONNECTICUT																																
BRIDGEPORT	7	1019.2	1020.0	70	53	61.5	- 4.0	82	9	36	24	0	0	52	73	1.94	- 2.01	1.40	8	0	0.0	0	14.3	NE	31*	SE	29	10	6	14	5.7	
HARTFORD	169	1013.2	1019.2	73	47	60.0	- 2.3	88	19	30	25	0	2	49	72	4.98	1.33	2.46	8	1	0.0	0	7.6	N	26	NE	23	6	10	14	6.4	68
NEW HAVEN	6	1018.7		70	52	60.9	- 3.0	80	10	34	25	0	0			2.60	- 1.33	1.52	7	1	0.0	0	8.5		27	S	29	6	10	14	6.0	64
DELAWARE																																
WILMINGTON	78	1016.2	1019.4	74	54	63.7	- 3.9	88	12	37	24	0	0	53	70	3.50	- 0.45	1.97	6	2	0.0	0	8.5	NNE	22*	NNW	30	10	8	12	5.4	
DIST.OF COLUMBIA																		1														
WASHINGTON U	72			77	57	67.2		91	20+	43	25+	3	0			3.56		1.95	6	0	0.0	0										
WASH NATL AP	14	1014.8	1019.4	77	56	66.5	- 3.2	92	12	39	25+	1	0	54	68	3.61	- 0.22	1.98	6	0	0.0	0	8.9	S	27	NNW	30	13	6	11	5.2	62
FLORIDA																																
APALACHICOLA U	13	1012.6		85	71	78.0	- 0.9	92	5	60	24	3	0			11.11	2.58	5.05	9	7	0.0	0	8.0	NE	30	NE	1	11	10	9	5.1	
DAYTONA BEACH	31	1013.1	1014.8	85	72	78.7	- 0.5	93	5	66	13	2	0	72	83	5.43	- 1.57	3.19	9	5	0.0	0	10.6	ENE	36*	ENE	24	4	9	17	7.6	
FORT MYERS	13	1012.8		91	74	82.4	1.1	95	16+	71	30	22	0			7.49	- 1.01	1.78	13	13	0.0	0	8.1		35*	SSW	29	3	10	17	7.2	
JACKSONVILLE	24	1014.0	1015.3	85	70	77.2	- 2.2	94	13+	63	30+	5	0	70	82	4.91	- 2.65	1.31	14	4	0.0	0	9.3	NE	50	NE	24	7	7	16	6.7	50
KEY WEST	5	1011.9	1013.2	89	79	83.8	1.5	92	11+	72	24	15	0	74	74	18.45	11.72	6.65	17	17	0.0	0	10.0	ESE	33	S	29	0	13	17	7.7	55
LAKELAND U	214			88	73	80.1	- 0.1	94	4	68	30+	11	0			3.23	- 3.32	0.70	14	10	0.0	0	7.6					5	10	15	6.8	46
MIAMI BEACH	9			87	78	82.5	0.8	91	29	70	19	3	0			12.17	4.81	3.23	14		0.0	0	11.1	E				1	14	15	7.1	41
MIAMI	7	1012.2	1013.5	88	75	81.3	0.0	91	6	70	9	10	0	74	82	11.12	1.65	4.14	17	14	0.0	0	8.1	E	32*	WSW	29	1	8	21	8.1	
ORLANDO	106	1009.8	1014.3	89	72	80.5	0.5	96	5	67	30	14	0	72	80	6.72	- 0.51	3.92	15	5	0.0	0	9.7	ENE	27*	SSW	29	5	8	17	7.2	
PENSACOLA U	13			85	70	77.9	- 0.5	94	8+	56	30	9	0			5.52	- 1.56	2.14	9	6	0.0	0	7.7	N	22	NE	23					59
TALLAHASSEE	58	1012.8	1015.6	87	67	77.1	- 1.0	95	5+	57	30	15	0	67	75	6.60	1.09	4.08	7	6	0.0	0	9.9	ENE	44*	N	5	9	12	9	5.8	
TAMPA	19	1012.5	1014.1	88	72	80.1	- 0.4	96	1	64	10	15	0	71	80	3.87	- 3.02	1.31	13	11	0.0	0	11.5	NE	37*	WNW	29	6	8	16	7.1	67
WEST PALM BEACH	15	1013.1	1014.2	89	74	81.5	- 0.6	95	6	70	30	14	0	74	81	10.39	0.73	2.25	19	17	0.0	0	6.8	ESE	40*	SW	29	3	8	19	7.7	
GEORGIA																																
ATHENS	803	988.8	1017.6	82	61	71.1	- 2.4	92	12+	44	24	5	0	61	75	4.64	1.62	3.65	6	4	0.0	0	6.7	NE	18*	ENE	28+	12	9	9	5.1	
ATLANTA	1005	976.2	1017.7	80	62	70.9	- 2.2	90	12	47	24	1	0	61	74	5.19	1.93	3.12	7	1	0.0	0	6.7	ENE	34*	E	24	13	8	9	5.0	68
AUGUSTA	143	1010.3	1017.1	83	61	71.9	- 3.4	95	4	51	24	9	0	63	77	4.48	1.48	2.71	9	4	0.0	0	6.2	NE	23*	WNW	4	5	12	13	6.6	
COLUMBUS	385	1002.6		85	64	74.5	- 1.5	95	12	53	24	11	0			3.04	0.27	2.19	3	1	0.0	0	8.2		24*	E	23	13	4	13	5.4	
MACON	356	1003.7	1017.2	85	64	74.6	- 1.8	97	4	53	24	12	0	62	71	4.61	1.84	2.35	4	2	0.0	0	7.7	NE	23	NE	24	9	8	13	6.0	62
ROME	637	995.0		84	58	71.0	- 1.4	94	12	40	24	8	0			6.86	3.56	6.35	7	4	0.0	0						13	8	9	4.9	
SAVANNAH	48	1014.0	1016.6	84	65	74.3	- 2.4	94	13+	56	24	5	0	65	77	3.61	- 1.64	2.14	7	4	0.0	0	9.9	NE	28	NE	24	5	11	14	6.9	60
THOMASVILLE U	283			85	67	75.9	- 2.5	95	4	57	24	11	0			5.78	0.96	3.63	7	3	0.0	0										
HAWAII																																
HILO	31	1012.9	1014.9	84	68	76.0	0.5	87	16	65	20	0	0	68	79	10.18	1.68	3.94	21	0	0.0	0	8.1	WSW	23	NNE	16+	4	10	16	7.4	33
HONOLULU	7	1014.5	1014.8	88	74	81.0	1.8	91	24	68	22	6	0	66	64	1.47	0.48	1.40	4	0	0.0	0	10.2	ENE	36	SE	17	10	15	5	4.7	69
KAHULUI	44	1011.9	1014.8	86	71	78.3		89	27	65	20+	0	0	68	72	1.17		0.97	3	0	0.0	0	17.1	NE	36*	NE	4+	14	11	5	4.4	72
LIHUE	115	1010.7	1016.1	85	73	79.3	1.2	87	27+	67	22	0	0	70	74	2.12	0.04	1.43	18	0	0.0	0	11.9	NE	32	NE	17	11	13	6	4.9	
IDAHO																																
BOISE	2838	919.3	1014.0	85	57	70.9	7.7	100	5	47	18	12	0	45	45	0.75	0.36	0.32	9	4	0.0	0	7.3	SE	33	SE	19	12	8	10	5.0	71
IDAHO FALLS 42NW R	4790			78	43	60.6	4.5	91	12	33	25	1	0			1.37	0.74	0.45	11		0.0	0	5.5	NNE	27A	SW	13					
IDAHO FALLS 46W R	4933	850.6		77	45	61.1	4.6	90	5	36	27+	1	0			1.39	1.04	0.43	8	2	0.0	0	5.0	SW	24A	SW	14					
LEWISTON	1413	962.3		84	55	69.8	6.3	96	4	43	18+	12	0			0.52	- 0.38	0.44	4	2	0.0	0						13	7	10	4.9	
POCATELLO	4444	865.1	1016.1	80	49	64.6	4.3	91	12+	39	26	3	0	45	55	0.96	0.35	0.33	6	5	0.0	0	6.4	SW	42	SW	20	9	12	9	5.1	64
ILLINOIS																																
CAIRO U	314	1004.9		82	62	72.0	- 0.5	90	20+	46	30	4	0			1.58	- 1.43	0.71	4	2	0.0	0	6.1	NE#	22	NW	12	11	8	11	5.3	72
CHICAGO O HARE	658	994.6	1019.2	78	52	64.8		90	19	38	14	1	0	54	68	2.88		1.36	6	4	0.0	0	7.7	NNE	32*	NNE	28	5	13	12	6.3	
CHICAGO MIDWAY	610	996.6	1019.4	78	57	67.6	1.2	92	19	45	30+	2	0	56	71	2.63	- 0.10	1.30	6	3	0.0	0	8.7	NE	34	NE	28	6	13	11	5.9	59

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90°F. or above	Temperature: No. of days: Min. 32°F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
ILLINOIS	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MOLINE	582	996.8	1019.1	77	53	64.9	- 0.4	89	19	39	30	0	0	57	77	2.38	- 0.87	1.10	8	2	0.0	0	7.6	ESE	30	N	28	6	11	13	6.3	61
PEORIA	652	997.5	1020.0	77	54	65.2	- 1.2	87	19	39	30	0	0	55	73	1.76	- 1.29	0.58	4	4	0.0	0	7.9	S	29	NW	28	11	9	10	5.3	72
ROCKFORD	728	992.3	1019.5	76	53	64.0	0.2	85	19+	40	14	0	0	54	74	3.95	0.44	1.32	7	5	0.0	0	7.5	SW	29*	NNE	28	5	14	11	6.0	
SPRINGFIELD	588	995.2	1018.4	80	54	66.9	- 0.7	89	19	39	30	0	0	55	70	0.74	- 2.19	0.34	6	4	0.0	0	8.0	S	28	N	29	10	15	5	4.6	86
INDIANA																																
EVANSVILLE	381	1002.6	1018.6	83	53	67.6	- 2.0	92	20+	39	30	5	0	56	73	1.00	- 1.87	0.84	4	3	0.0	0	4.5	NW	21	S	11	12	8	10	5.1	72
FORT WAYNE	791	988.5	1019.6	78	51	64.4	- 0.4	88	19	37	30	0	0	50	64	1.16	- 1.51	0.70	7	2	0.0	0	6.5	NE	26	SW	11	11	11	8	5.0	78
INDIANAPOLIS	793	989.2	1019.2	79	52	65.4	- 1.1	87	19	36	30	0	0	53	69	0.24	- 3.00	0.24	1	1	0.0	0	7.1	NNE	32*	NW	12	7	19	4	5.2	73
SOUTH BEND	768	991.2	1019.3	77	52	64.6	0.8	87	19+	40	14	0	0	51	65	1.18	- 1.89	0.55	5	4	0.0	0	8.1	ESE	23*	NE	28+	8	12	10	5.4	
IOWA																																
BURLINGTON	694	993.5	1019.1	78	55	66.5	0.5	91	19	43	30	1	0	56	75	1.27	- 1.92	0.65	7	2	0.0	0	8.3	ESE	31	W	28	9	8	13	5.7	69
DES MOINES	948	987.6	1018.9	76	56	65.9	0.0	87	19	43	30+	0	0	58	78	1.83		0.58	9	1	0.0	0	8.2	SE	33	N	28	9	12	9	6.1	55
DUBUQUE	1065	993.7		73	52	62.3	0.6	83	18	37	13	0	0			3.09	- 0.68	1.25	9	4	0.0	0			25*	SSW	2	7	5	18	6.8	
SIOUX CITY	1095	976.5	1017.6	77	57	67.1	2.6	93	8	41	29	2	0	57	76	2.02	- 0.72	1.11	8	5	0.0	0	8.5	SSE	35	N	28	8	6	16	6.2	57
WATERLOO	868	986.9	1018.8	76	52	63.7	0.3	87	18	37	13	0	0	56	80	2.52	- 1.28	1.11	11	5	0.0	0	8.0	SE	29*	N	28	7	9	14	6.3	
KANSAS																																
CONCORDIA	1470	967.5	1016.9	82	59	70.5		94	6	44	29	4	0	60	73	2.18		0.86	8	7	0.0	0	11.3	SSE	36	NE	21	12	9	9	5.1	62
DODGE CITY	2594	929.4	1016.4	85	61	72.9	2.6	94	7+	39	29	3	0	59	68	1.86	0.33	1.01	8	9	0.0	0	12.4	SSE	40	NE	28	9	11	10	5.3	78
GOODLAND	3645	890.5	1015.9	81	55	68.1	2.6	94	6	35	29	4	0	55	70	4.84	3.60	2.47	8	9	0.0	0	12.6	S	35*	NNE	28+	10	14	6	4.5	
TOPEKA	877	982.0	1017.4	84	60	71.9	2.5	97	8	39	30	7	0	59	69	1.00	- 1.98	0.38	8	6	0.0	0	9.9	E	40	N	28	8	9	13	5.6	60
WICHITA	1321	968.6	1016.6	82	63	72.5	1.2	92	2	46	30	2	0	62	72	4.90	1.68	1.68	10	11	0.0	0	9.2	S	42	N	28	9	11	10	5.5	66
KENTUCKY																																
COVINGTON	869	987.0	1018.7	80	51	65.7	- 2.5	91	20+	33	30	4	0	52	66	0.18	- 2.65	0.07	5	1	0.0	0	6.4	NE	21*	SW	12	8	16	6	5.1	
LEXINGTON	979	983.4	1019.1	78	55	66.6	- 2.7	86	12+	38	30	0	0	54	68	0.37	- 2.43	0.13	4	2	0.0	0	6.0	ENE	21*	ESE	23	13	12	5	4.4	
LOUISVILLE	474	999.3	1018.5	79	55	66.8	- 2.2	91	12+	37	30	3	0	58	77	3.48	0.85	2.58	3	4	0.0	0	5.0	N	39	N	12	7	12	11	5.5	65
LOUISIANA																																
ALEXANDRIA	92	1011.4	1015.9	88	65	76.4		99	5	46	30	16	0	66	76	2.98		0.97	9	6	0.0	0	5.4	NNE	25	NNE	13+	18	4	8	4.1	
BATON ROUGE	64	1012.4	1015.5	89	69	79.0	1.6	97	7+	51	30	17	0	68	74	1.90	- 1.62	1.06	8	4	0.0	0	7.0	ENE	29	WNW	5	12	9	9	5.3	
LAKE CHARLES	14	1013.6	1015.0	88	70	78.7	0.0	95	7+	54	30	13	0	69	78	8.78	4.76	3.94	12	8	0.0	0	8.2	ENE	25*	ENE	8	12	11	7	4.7	
NEW ORLEANS	3	1012.8	1015.1	86	69	77.7	- 0.1	94	7	57	30	13	0	70	80	7.35	2.32	3.01	11	7	0.0	0	6.8	ENE	21*	N	29+	10	8	12	5.4	
NEW ORLEANS AUDUBON	6	1008.2		87	72	79.4		94	5	61	30	13	0			6.45		2.40	11	10	0.0	0	3.9	NE#	14	NW	13	6	14	10	5.9	47
SHREVEPORT	252	1007.5	1016.7	89	68	78.4	0.6	100	4	49	30	15	0	66	71	2.36	0.08	1.32	7	4	0.0	0	8.5	ENE	29	SSW	5	16	6	8	4.2	63
MAINE																																
CARIBOU	624	995.1	1018.4	63	38	50.9	- 2.9	78	18+	27	24	0	8	44	74	3.38	- 0.15	1.13	14	0	0.0	0						7	12	11	6.2	
PORTLAND	61	1015.2	1019.2	66	43	54.8	- 3.9	78	26	28	14	0	5	46	74	2.29	- 1.23	1.56	10	0	0.0	0	8.3	N	30	N	23	9	7	14	6.2	60
MARYLAND																																
BALTIMORE	146	1014.7	1019.4	75	53	64.0	- 4.1	90	12	35	25	1	0	53	72	4.12	0.79	2.00	7	1	0.0	0	8.8	W	26	NW	29	14	3	13	5.0	60
BALTIMORE U	14			76	59	67.2	- 3.4	90	12	43	25+	1	0			4.38	0.75	2.36	6	0	0.0	0										
FREDERICK	294			76	51	63.2	- 3.6	90	20	30	25+	1	2			2.43	- 0.99	1.95	6	0	0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	994.6		67	49	58.0	- 4.4	83	19	33	24	0	0			4.25	0.30	1.55	10		0.0	0	13.9	SSW	40	SSW	12					58
BOSTON	15	1014.3	1018.9	69	53	60.8	- 4.5	87	19	39	24	0	0	49	69	3.05	- 0.41	1.46	10	0	0.0	0	13.8	SSW	33	SW	12	7	8	15	6.4	64
NANTUCKET	43	1018.2	1018.6	65	53	59.3	- 3.1	74	2	40	24	0	0	53	82	6.59	3.08	2.82	13	0	0.0	0	13.6	NNE	34	N	6	6	4	20	7.2	51
PITTSFIELD	1170			67	41	54.1	- 4.0	81	19	23	24	0	4			2.73	- 1.77	1.80	7		0.0	0										
WORCESTER	986	982.4	1019.2	66	47	56.5	- 4.3	80	19+	36	23	0	0	47	75	4.38	0.46	2.19	10	1	0.0	0	9.6	W	26*	NW	30	8	8	14	6.1	
MICHIGAN																																
ALPENA	689	995.0		67	42	54.3	- 3.2	83	18	26	14	0	6			1.92	- 1.69	0.90	7	1	0.0	0	6.2	SW	32	NE	12	9	7	14	6.4	51
DETROIT	619	993.2	1019.9	74	52	63.1	- 1.5	87	19	42	24+	0	0	50	66	1.28	- 1.16	0.71	6	1	0.0	0	8.1	N	27	W	27+	13	5	12	5.4	62
DETROIT M WAYNE CO	633	995.8	1020.1	74	47	60.2	- 3.6	88	19	35	30	0	0	51	76	1.42	- 0.90	0.84	6	2	0.0	0	6.2	ENE				12	6	12	5.5	
DETROIT WILLOW RUN	711	991.4	1019.9	74	48	60.9	- 3.9	88	11	38	30+	0	0	50	71	1.44	- 0.85	0.89	6	2	0.0	0	8.0	NNE	28*	W	3	11	8	11	5.3	
ESCANABA U	594	997.0		64	48	56.0	- 1.4	77	18	37	29	0	0			2.13	- 1.01	0.96	8	3	0.0	0	9.7		47	N	12	3	15	12	6.6	43

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
FLINT	766	992.8	1020.8	71	46	58.8	- 2.9	84	18	33	14	0	0	50	76	1.85	- 1.09	0.75	8	1	0.0	0	6.5	SW	21*	WSW	27	10	7	13	5.9	
GRAND RAPIDS	689	994.6	1020.1	73	50	61.2	- 1.0	84	11	36	14	0	0	51	72	2.97	+ 0.01	1.57	7	2	0.0	0	8.4	E	30	NE	28	12	5	13	5.6	66
LANSING	852	987.8	1019.9	73	47	60.1	- 1.9	86	11	34	14	0	0	51	75	1.69	- 0.91	0.77	9	1	0.0	0	5.7	NE	26	W	27	11	8	11	5.8	61
MARQUETTE U	677	992.2		66	49	57.2	- 0.5	82	10	36	13	0	0			2.22	- 1.06	0.75	7	2	0.0	0	7.9	S#	25	S	24	5	9	16	6.9	58
MUSKEGON	627	996.5	1019.7	71	50	60.4	- 1.1	83	11	36	14	0	0	52	76	2.78	- 0.28	1.35	7	3	0.0	0	10.1	ESE	26*	N	28	10	6	14	5.8	
SAULT STE MARIE	721	997.2	1020.1	63	45	54.1	- 1.2	78	18	33	29+	0	0	47	81	2.69	+ 1.12	1.31	10	2	0.0	0	7.4	ENE	23*	NNE	12	2	10	18	7.6	49
MINNESOTA																																
DULUTH	1426	976.3	1019.2	68	48	57.9	3.2	81	8	30	13	0	1	50	78	2.80	+ 0.06	0.95	10	4	0.0	0	9.9	ESE	32	NE	11	8	8	14	6.1	53
INTERNATIONAL FALLS	1179	976.3	1018.3	70	45	57.1	4.2	83	10	29	13	0	3	49	78	2.52	- 0.38	1.33	9	3	0.0	0	6.6	S	23*	SSE	14	8	11	11	6.0	
MINNEAPOLIS	822	985.3	1018.8	73	51	62.2	1.7	85	11+	34	29	0	0	54	79	3.47	1.04	1.32	10	6	0.0	0	7.6	SSE	32	WNW	11	11	6	13	5.9	62
ROCHESTER	1297	971.5	1019.4	72	50	61.1	0.4	83	18	32	13	0	1	53	78	2.65	- 0.45	1.55	11	4	0.0	0	11.0	SSE	28*	NNW	12	7	7	16	6.2	
ST CLOUD	1034	979.5		72	50	61.2	2.4	85	11+	33	13	0	0			3.40	0.99	1.84	9	4	0.0	0						9	8	13	6.0	
MISSISSIPPI																																
JACKSON	305															0.88		0.56	3	1	0.0	0	6.3	ENE	25	NNE	4	12	9	9	4.9	
MERIDIAN	292	1003.2	1016.8	87	62	74.3	- 1.6	99	11	47	30	16	0	63	73	0.72	- 2.61	0.46	3	3	0.0	0	5.8	N	18*	N	4	12	10	8	5.1	
VICKSBURG U	234	1006.9		85	67	75.7	- 0.9	93	11+	48	30	12	0			0.11	- 2.39	0.08	3	2	0.0	0	7.0		20	N	12+	12	7	11	4.6	73
MISSOURI																																
COLUMBIA	778	989.0	1017.5	81	59	70.0	0.7	93	2	43	30	4	0	58	71	2.07	- 1.81	0.86	7	7	0.0	0	9.1	SSE	34	NW	28	11	8	11	5.0	75
KANSAS CITY	742	982.8	1017.2	85	63	74.1	3.3	97	2	47	30	7	0	58	61	1.44	- 1.81	0.47	7	4	0.0	0	8.4	ENE	30	N	28	9	9	12	5.5	63
ST JOSEPH	809	983.3		81	59	70.1	1.5	95	9	42	30	5	0			1.20	- 2.24	0.40	7	5	0.0	0	6.2	SE	21*	N	28+	9	9	12	5.6	
ST LOUIS	535	997.8	1018.5	81	56	68.5	- 1.5	90	20+	42	30	2	0	55	67	1.13	- 1.63	0.79	2	1	0.0	0	8.3	SE	29	N	29	9	13	8	4.8	76
ST LOUIS RFC	465			82	61	71.4	- 0.3	91	7	50	30	2	0			1.47	- 1.52	1.25	2	0	0.0	0										
SPRINGFIELD	1265	971.0	1018.1	82	59	70.4	0.0	90	20+	35	30	2	0	59	72	1.83	- 2.02	0.85	6	3	0.0	0	8.3	SSE	52	SE	10	9	11	10	5.2	68
MONTANA																																
BILLINGS	3567	892.7	1015.5	77	53	65.2	4.8	92	7	46	29+	4	0	46	57	1.29	0.10	0.99	6	1	0.0	0	10.5	WSW	33	NW	14	12	7	11	5.5	69
GLASGOW	2277	940.5		78	52	65.1	8.4	92	30+	38	28	3	0			0.32	- 0.64	0.25	4	3	0.0	0						11	7	12	5.0	
GREAT FALLS	3662	889.4	1015.2	78	50	64.0	6.1	91	27+	38	16	3	0	40	48	0.87	- 0.33	0.39	7	4	0.0	0	10.1	SW	34	SW	14	15	5	10	4.4	72
HAVRE	2582	926.7		79	48	63.8	7.7	93	7+	34	20	6	0			0.36	- 0.65	0.28	5	1	0.0	0	8.0	E#	40	W	14+	16	5	9	4.1	67
HELENA	3893	875.3	1016.6	77	46	61.2	5.2	91	5	37	18	2	0	45	61	1.10	0.15	0.52	9	3	0.0	0	6.7	WNW	34	W	22	14	5	11	4.8	68
KALISPELL	2965	912.6		75	43	58.9	4.7	89	5	31	19	0	2			1.26	0.22	0.49	6	2	0.0	0	5.0					15	4	11	4.4	
MILES CITY				80	54	67.2	6.2	94	7	44	29	7	0			1.92	0.96	1.60	4	1	0.0	0	8.4	SE	25*	WSW	23					
MISSOULA	3190	903.4	1017.2	76	43	59.4	4.0	91	7	33	18	1	0	47	72	1.54	0.52	0.54	9	5	0.0	0	5.1	SSE	24	NW	2	12	7	11	5.0	64
NEBRASKA																																
GRAND ISLAND	1841	951.9	1017.6	76	54	64.8	- 1.9	89	8	37	29	0	0	58	84	3.45	1.30	1.90	8	9	0.0	0	9.2	SSE	29*	N	28	12	3	15	5.8	
LINCOLN U	1150			78	59	68.4	0.2	93	8	45	29	2	0			3.50	0.63	1.52	9	6	0.0	0	9.4	SE#	35	NW	28	8	7	15	6.3	52
NORFOLK	1544	961.9		77	56	66.6	1.6	91	8	38	29	3	0			1.30	- 0.95	0.35	8	4	0.0	0						10	5	15	5.9	
NORTH PLATTE	2779	917.8	1016.0	78	54	65.9	2.2	91	11	31	29	2	1	56	77	6.03	4.36	2.53	11	10	0.0	0	9.5	SSE	42	NE	28	10	8	12	5.7	54
OMAHA	978	978.0	1017.7	79	57	67.8	0.9	92	8	41	29	2	0	57	73	2.18	- 0.45	1.01	8	3	0.0	0	8.7	SSE	40	NW	28	8	10	12	6.0	55
OMAHA N OMAHA AP	1323	969.9		76	57	66.6	1.5	88	19+	43	29	0	0			2.23	- 0.29	1.48	9	3	0.0	0						7	9	14	6.2	
SCOTTSBLUFF	3950	881.4	1015.8	81	53	67.0	4.7	93	6	39	29	4	0	52	66	1.36	0.15	0.69	5	2	0.0	0	9.8	ESE	40*	WSW	23	11	8	11	4.8	
VALENTINE	2587	925.9		78	53	65.6	3.8	94	8	34	29	2	0			2.22	0.97	1.33	6	5	0.0	0	10.0	S#	33	S	16	8	9	13	5.9	55
NEVADA																																
ELKO	5075	846.6	1015.7	82	42	61.6	3.7	92	4	32	24	3	1	37	41	0.81	0.47	0.43	5		0.0	0	5.8	E	35*	S	19	13	11	6	4.2	
ELY	6257	811.7	1014.6	77	42	59.8	2.3	86	26+	35	24+	0	0	38	50	2.18	1.62	1.25	9	5	0.0	0	8.8	S	42	S	15	14	8	8	4.4	79
LAS VEGAS	2162	946.4	1011.9	94	67	80.5	0.0	104	12+	59	20	23	0	45	34	1.58	1.24	1.07	4	3	0.0	0	8.5	WSW	30*	S	15	21	6	3	2.5	84
RENO	4404	863.3	1015.4	83	44	63.3	3.0	91	29+	35	24+	9	0	41	50	0.18	- 0.05	0.14	3	1	0.0	0	4.7	S	32	SW	12	17	4	9	4.1	78
WINNEMUCCA	4299	868.5		83	44	63.6	5.0	96	4	32	24	14	1			0.25	- 0.09	0.20	4	2	0.0	0	7.4	S	42	W	12	13	8	9	4.7	68
NEW HAMPSHIRE																																
CONCORD	339	1008.5	1019.3	70	43	56.5	- 2.8	86	19	24	24	0	6	45	70	2.12	- 1.63	1.37	9	1	0.0	0	5.1	NW	26	NW	30	10	8	12	5.8	64
MT WASHINGTON OBS	6262	808.3		45	33	38.8	- 2.2	57	18	16	23	0	13			3.10	- 3.90	1.00	12	0	0.0	0	23.8	W#	90Y	W	30	9	6	15	6.4	49
NEW JERSEY																																
ATLANTIC CITY	58	1017.2	1019.4	73	55	63.9	- 3.3	86	20	36	24	0	0	54	74	4.35	1.04	1.93	9	2	0.0	0	10.5	N	29*	SSW	29	15	1	14	5.5	54

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
NEW JERSEY																																
ATLANTIC CITY U	10			69	57	62.8	- 5.6	80	28	42	25+	0	0			3.12	- 0.28	1.52	7	0	0.0	0	14.9		40*	SSW	29					
NEWARK	11	1018.3	1019.5	73	55	64.0	- 3.3	88	12+	42	25+	0	0	51	66	3.94	0.18	1.93	10	2	0.0	0	11.3	NNE	29*	NNW	30+	14	4	12	5.5	
TRENTON U	56	1011.7		72	53	62.6	- 4.5	86	12	37	24	0	0			4.42	0.92	2.10	9	5	0.0	0	8.4	N#	29	S	29	13	3	14	5.5	58
NEW MEXICO																																
ALBUQUERQUE	5310	851.5	1014.8	85	60	72.5	2.0	92	9+	50	30	3	0	49	49	0.63	- 0.32	0.31	5	4	0.0	0	7.2	SE	36	SE	28	15	8	7	3.8	82
CLAYTON	4969	849.1		82	55	68.6	2.6	88	19	38	29	0	0			0.74	- 0.91	0.28	4	6	0.0	0						18	6	6	3.4	
RATON	6379	810.4		80	49	64.5	2.6	88	19	40	29+	0	0			2.66	0.98	1.80	9	12	0.0	0						9	14	7	4.5	
ROSWELL	3619	895.4		88	57	72.4	3.2	94	9+	40	30	9	0			0.62	- 1.20	0.51	6	3	0.0	0	7.1		21	NE	12	15	12	3	3.5	88
SILVER CITY	5373	838.7		84	56	70.1		90	8	49	30+	1	0			0.86		0.20	9	11	0.0	0						16	7	7	4.1	
NEW YORK																																
ALBANY	277	1016.1	1020.0	69	44	56.8	- 4.8	82	8	27	24	0	4	46	70	2.69	- 0.89	1.17	5	1	0.0	0	6.7	N	37	SW	12	7	12	11	6.1	58
BINGHAMTON	1590	959.2	1019.6	65	44	54.7	- 5.3	78	19	26	24	0	2	46	76	1.87	- 1.08	0.81	6	0	0.0	0	8.8	NNW	28	NW	29	5	13	12	6.2	66
BUFFALO	705	992.2	1020.5	68	46	57.1	- 4.3	79	11	32	24	0	1	47	71	1.20	- 1.93	0.46	6	2	0.0	0	8.5	NE	32	SW	12	10	6	14	5.7	68
NEW YORK U	132	1008.2		72	54	63.1	- 5.4	87	19	40	24	0	0			3.95	0.08	2.18	11	2	0.0	0	9.1	N#	25	N	13	16	2	12	4.7	59
NEW YORK LA GUARDIA	19	1017.4	1019.2	73	58	65.3	- 3.5	85	19	44	24	0	0	51	62	3.53	- 0.39	1.85	10	3	0.0	0	11.9	N	27	S	3	10	8	12	5.6	
ROCHESTER	543	1001.2	1020.6	69	44	56.7	- 5.7	84	19	30	24	0	1	48	75	1.17	- 1.36	0.50	5	1	0.0	0	8.5	WSW	49	W	12	12	7	11	5.1	63
SCHENECTADY	217			69	46	57.3	- 4.6	80	8+	32	24	0	1			2.25	- 1.30	1.53	6	1	0.0	0						22	4	4	3.0	
SYRACUSE	417	997.8	1019.8	70	45	57.2	- 5.2	81	19+	29	24	0	3	45	66	0.85	- 1.99	0.38	6	1	0.0	0	7.6	E	43	W	12	12	10	8	5.0	70
NORTH CAROLINA																																
ASHEVILLE U	2203	940.1		77	55	66.2	- 1.6	88	21	44	24	0	0			3.64	0.86	2.24	4	1	0.0	0	5.9	NW	21	S	24+	11	11	8	5.0	58
CAPE HATTERAS R	7	1016.4	1017.1	77	64	70.5	- 3.6	85	12+	51	28	0	0	64	80	4.82	- 1.07	3.14	9	3	0.0	0	11.9	NNE	35*	SSW	29	4	10	16	7.2	50
CHARLOTTE	735	990.5	1018.4	80	60	70.1	- 2.3	90	21	44	24	1	0	59	72	3.70	0.21	3.34	6	1	0.0	0	6.5	NE	21	NE	22	10	10	10	5.5	68
GREENSBORO	891	987.4	1019.2	77	55	65.8	- 4.3	87	21+	38	24	0	0	56	76	4.01	0.35	2.77	8	2	0.0	0	6.9	NE	23	NE	23	11	9	10	5.3	64
RALEIGH	433	1004.6	1018.3	79	55	67.1	- 4.1	89	12+	39	24	0	0	58	75	2.77	- 1.08	1.55	7	1	0.0	0	6.3	N	18*	N	22	11	8	11	5.8	55
WILMINGTON	30	1015.0	1017.8	80	61	70.2	- 5.0	91	4	48	23	1	0	63	81	4.02	- 2.27	2.19	6	3	0.0	0	8.0	NE	30	NE	25	6	7	17	7.1	55
WINSTON SALEM	967	983.9	1019.1	77	56	66.5	- 4.9	87	12	41	25+	0	0	58	77	4.88	1.33	2.65	9	1	0.0	0	6.9	NE	23*	WSW	12	12	7	11	5.2	
NORTH DAKOTA																																
BISMARCK	1647	956.5	1016.9	76	46	60.9	2.2	96	26	31	29	2	1	49	71	0.72	- 0.47	0.24	7	4	0.0	0	8.7	S	36	N	28	9	7	14	5.8	65
FARGO	900	982.9	1017.3	75	50	62.2	3.4	88	26	34	29	0	0	52	73	1.19	- 0.29	0.51	7	2	0.0	0	10.4	SSE	32	N	11	10	7	13	5.7	61
WILLISTON	1899	948.4		78	49	63.4	5.7	95	7	34	29	4	0			0.11	- 1.01	0.08	3	1	0.0	0	8.8	SW#	34	W	14	10	8	12	5.1	68
OHIO																																
AKRON	1209	981.7	1019.9	74	48	61.3	- 2.1	85	11	37	30+	0	0	48	66	1.55	- 1.07	1.39	4	2	0.0	0	7.7	NNE	21*	WNW	27+	13	7	10	4.8	
CINCINNATI OBS	761			81	54	67.6	- 1.4	91	12	40	30	4	0			0.54	- 2.17	0.43	4	2	0.0	0	4.4	N#	22	W	12					68
CINCINNATI U	553	995.8		82	57	69.4	- 0.7	92	19	45	30	7	0			0.49	- 2.39	0.45	2	2	0.0	0										
CLEVELAND	777	991.8	1019.7	72	49	60.3	- 2.1	86	11	35	30	0	0	50	71	2.00	- 0.90	1.72	4	2	0.0	0	8.3	SSW	35	SW	11	12	6	12	5.0	63
COLUMBUS	812	989.8	1019.7	78	49	63.7	- 2.7	88	11	31	30	0	1	51	67	0.51	- 2.14	0.50	3	1	0.0	0	6.5	NE	38	N	12	14	9	7	4.5	72
COLUMBUS U	724			78	54	66.1	- 1.8	87	19+	40	30	0	0			1.08	- 1.24	1.06	2	1	0.0	0										
DAYTON	997	986.7	1019.3	78	50	64.2	- 2.6	87	19+	39	30	0	0	52	69	0.27	- 2.32	0.22	2	1	0.0	0	7.0	NNE	29	N	12	12	12	6	4.7	74
MANSFIELD	1296			74	49	61.3	- 2.0	85	19+	35	30	0	0			0.73	- 2.25	0.61	4	2	0.0	0						12	9	9	4.7	
SANDUSKY U	606			72	54	63.2	- 3.3	88	19+	41	30	0	0			0.91	- 1.86	0.65	5	1	0.0	0	6.9		21	SW	27	12	12	6	4.6	68
TOLEDO	676	994.4	1019.7	76	48	61.7	- 1.7	89	19	35	30	0	0	50	70	0.58	- 1.55	0.32	5	1	0.0	0	7.2	NNE	22	SW	27+	9	12	9	5.5	62
YOUNGSTOWN	1178	977.2	1020.1	72	46	58.6	- 4.4	83	19	35	24+	0	0	47	68	0.94	- 1.95	0.60	5	1	0.0	0	8.2	NNE	21*	NNW	11	10	11	9	5.0	
OKLAHOMA																																
OKLAHOMA CITY	1280	973.4	1016.3	86	64	75.1	1.8	98	11	45	30	11	0	62	68	1.91	- 1.11	0.43	9	6	0.0	0	9.9	SE	35	N	28+	9	11	10	5.5	70
TULSA	676	992.5	1017.1	87	65	76.0	1.7	97	2	45	30	12	0	62	67	2.01	- 2.00	0.96	5	5	0.0	0	9.8	SSE	29	NW	28	11	8	11	5.1	66
OREGON																																
ASTORIA	8	1013.8	1014.6	71	52	61.2	3.2	84	3	44	18+	0	0	56	84	2.20	- 0.93	0.70	9	5	0.0	0	6.6	SSE	22*	NNW	22	10	8	12	5.9	
BURNS U	4151	873.8		79	46	62.8	4.0	92	5+	37	24+	5	0			1.20	0.70	0.78	4	1	0.0	0						11	11	8	4.7	
EUGENE	361	1001.0		80	52	66.0	4.5	96	8	45	18	5	0			2.19	0.92	1.68	7	1	0.0	0	5.4		29*	SW	9	14	7	9	4.8	
MEACHAM	4050			74	51	62.1	6.4	89	28	37	17	0	0			2.13	0.67	0.90	10	0	0.0	0						12	9	9	4.6	
MEDFORD	1298	966.8	1013.8	89	53	71.1	6.4	104	26	45	26+	12	0	55		0.26	- 0.34	0.19	3	1	0.0	0	4.8	WNW	24*	SSE	9	16	9	5	3.8	
PENDLETON	1482	960.9	1014.1	81	54	67.6	3.4	97	9	42	17	5	0	46	50	0.70	0.07	0.30	6	0	0.0	0	8.1	SE	30*	SSW	9	17	8	5	3.5	
PORTLAND	21	1008.3	1014.0	77	54	65.1	2.9	89	9+	44	24	0	0	56	77	0.75	- 0.88	0.37	5	2	0.0	0	5.9	NW	61	S	9	13	6	11	4.8	60

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90°F. or above	Temperature: No. of days: Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0.3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8.10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
OREGON																																
PORTLAND U	30			78	58	67.9	3.4	91	9+	52	24+	3	0			1.12	- 0.62	0.49	4		0.0	0										
ROSEBURG	505	995.5		82	52	67.1	4.3	99	8	44	30	7	0			1.42	0.42	1.13	6	1	0.0	0	4.2	N#	24	S	22	10	12	8	5.0	65
SALEM	195	1007.2	1014.6	79	52	65.7	3.2	96	8	45	24	4	0	56	76	1.41	0.03	0.77	8	3	0.0	0	5.5	N	21*	S	13+	15	5	10	4.4	
SEXTON SUMMIT R	3836	884.1		73	52	62.4	3.2	87	26+	40	17+	0	0			0.54	- 0.71	0.33	6	1	0.0	0	9.5	NNW				14	9	7	3.9	
PACIFIC AREA																																
CANTON ISLAND	11	1009.1	1009.5	89	79	83.9	0.3	91	29+	73	16	15	0	74	75	3.67	2.43	1.42	11	0	0.0	0	9.7	E	22*	NE	30+	10	11	9	5.5	
ENIWETOK	16	1008.9		89	78	83.8	0.5	91	22+	74	12+	15	0			7.31	1.07	1.49	24	3	0.0	0	9.1									
TAGUAC GUAM R	361															13.47	0.11	2.56	28	13	0.0	0	5.0	E#	23	E	28					55
JOHNSTON	7	1012.0	1012.7	83	79	81.0	- 0.6	85	10+	76	27+	0	0	74	79	2.08	- 0.27	0.55	18	0	0.0	0	13.7	E	28	E	20+	4	20	6	5.3	81
KOROR R	94	1006.9	1009.6	87	77	81.9	0.9	89	29+	72	30+	0	0	77	86	14.01	- 0.32	4.51	15	9	0.0	0	7.2	Sw	29	NW	30	0	0	30	9.9	55
KWAJALEIN	8	1009.7														5.61	- 4.58	1.25	19	1	0.0	0	8.1		30	NE	10+	6	11	13	6.4	
PONAPE R	123	1005.0	1009.4	88	73	80.2	0.7	91	25	71	17	6	0	75	88	13.12	- 2.69	1.94	22	0	0.0	0	2.7	SE	19	E	23	1	7	22	8.7	60
TRUK MOEN ISLAND	5	1008.7	1008.8	87	75	80.8	0.4	90	6	72	16+	1	0	76	85	16.88	4.30	4.67	24	2	0.0	0	6.0	W	31	SW	29	0	5	25	8.8	48
WAKE	11	1011.6	1011.8	88	78	82.8	0.3	89	30+	74	14	0	0	76	78	2.09	- 3.15	0.85	11	1	0.0	0	10.7	ENE	26*	E	6	8	14	8	5.7	
YAP R	53	1007.5	1008.4	87	76	81.3	- 0.1	91	17	73	24	2	0	77	88	10.25	- 3.76	2.57	21	5	0.0	0	6.0	SW	20	SW	9	0	0	30	10.0	66
PENNSYLVANIA																																
ALLENTOWN	376	1005.6	1019.9	73	49	60.9	- 3.8	85	12+	31	24	0	1	50	71	6.59	2.84	3.08	7	2	0.0	0	7.9	ENE	44*	SSE	12	13	4	13	5.4	
ERIE	732	993.4	1019.7	69	50	59.6	- 3.7	83	11	39	24+	0	0	49	70	1.46	- 2.10	0.57	6	2	0.0	0	12.3	S	32*	WSW	27	14	5	11	5.0	
HARRISBURG	335	1006.0	1019.9	74	50	61.5	- 4.9	89	12+	30	24	0	2	49	68	2.82	0.00	1.66	5	1	0.0	0	7.3	W	24	NW	22+	10	8	12	5.6	63
PHILADELPHIA	5	1014.8	1019.3	73	53	62.8	- 3.9	86	12	35	25	0	0	52	70	6.44	2.98	3.18	8	2	0.0	0	9.0	WSW	25	N	13+	11	6	13	5.5	57
PITTSBURGH	1137	989.0	1019.7	75	48	61.3	- 2.9	86	12+	35	25+	0	0	47	62	1.40	- 1.14	0.72	4	3	0.0	0	7.0	N	24*	NW	3	8	11	11	5.7	71
PITTSBURGH U	749			76	53	64.2	- 3.1	87	12+	39	24	0	0			0.63	- 2.04	0.34	4	0	0.0	0										71
READING U	266	1007.3		74	53	63.5	- 4.0	87	12	36	24	0	0			5.46	2.14	2.31	7	2	0.0	0	8.6	N#	34	NW	3	12	7	11	5.3	63
SCRANTON	940	985.6	1019.8	71	49	60.0	- 1.5	85	19+	31	24	0	1	50	72	1.69	- 1.28	1.04	6	1	0.0	0	6.9	ENE	24	NW	29	9	7	14	5.8	61
WILLIAMSPORT	527	1001.8	1020.4	73	47	59.7	- 4.4	86	12	30	24	0	2	48	70	2.29	- 0.98	0.86	6	2	0.0	0	7.2	NNW	23*	W	12	7	11	12	6.1	
RHODE ISLAND																																
BLOCK ISLAND	110	1013.8		65	55	59.7	- 4.3	73	10	44	24	0	0			1.62	- 1.58	0.69	8	0	0.0	0						6	8	16	6.5	
PROVIDENCE	55	1012.7	1018.7	69	50	59.6	- 3.6	84	19	36	25+	0	0	50	74	4.10	0.58	1.47	8	1	0.0	0	11.3	NNE	28*	NNE	6	7	7	16	6.5	53
SOUTH CAROLINA																																
CHARLESTON	41	1014.9	1016.9	84	64	73.8	- 1.8	95	4	54	24	4	0	65	77	2.75	- 3.08	0.90	8	3	0.0	0	8.4	NNE	39Y	S	29	7	9	14	6.3	58
CHARLESTON U	9			80	67	73.7	- 3.4	91	4	56	24	1	0			3.59	- 2.73	1.65	10	0	0.0	0	11.0		34	NE	25					
COLUMBIA	217	1005.1	1017.8	84	61	72.3	- 3.0	96	4	47	24	8	0	61	73	3.98	- 0.33	2.58	6	3	0.0	0	6.2	NE	21*	SSE	28	11	5	14	5.9	55
FLORENCE	146	1011.8	1017.5	82	60	71.1	- 3.8	94	13+	47	24+	6	0	61	75	4.13	0.03	2.54	7	3	0.0	0	7.8	NE	23*	SSE	29	12	4	14	5.7	
GNVLE SPARTANBURG	957	981.4	1018.1	81	60	70.5	- 2.7	90	12	45	24	1	0	59	72	4.68	0.80	3.89	5	1	0.0	0	7.0	NE	26	NE	25+	11	10	9	5.2	70
SOUTH DAKOTA																																
HURON	1282	969.8	1016.6	79	53	65.8	3.4	92	11+	33	29	4	0	53	69	1.31	- 0.22	0.44	8	5	0.0	0	11.3	SSE	29	N	28	8	3	19	6.6	55
RAPID CITY	3165	903.7	1016.4	80	53	66.5	4.9	96	7	36	29	5	0	49	61	1.21	0.26	0.55	9	6	0.0	0	10.3	NNW	34	N	28	10	10	10	5.4	67
SIOUX FALLS	1420	966.1	1017.6	76	52	64.3	2.5	92	8	35	29	3	0	54	74	2.40	- 0.21	0.90	8	5	0.0	0	9.6	S	23*	N	28+	8	5	17	6.5	
TENNESSEE																																
BRISTOL	1507	964.4	1018.4	81	56	68.4	- 0.2	90	21	40	25	1	0	54	65	1.40	- 1.22	0.87	5	1	0.0	0	3.1	ENE	19*	N	5	12	10	8	5.0	
CHATTANOOGA	670	990.6	1018.0	84	60	72.1	- 0.2	94	3	41	24	6	0	60	72	1.27	- 1.83	0.80	4	2	0.0	0	6.1	NNE	24	N	22	13	7	10	4.8	74
KNOXVILLE	950	983.4	1018.6	81	58	69.4	- 2.8	89	21+	43	25	0	0	56	68	2.37	- 0.17	1.07	6	3	0.0	0	5.5	NE	25	NE	22	12	10	8	4.8	82
MEMPHIS	263	1002.9	1017.6	83	63	73.4	- 1.0	94	3	47	30	5	0	63	73	2.06	- 0.76	1.72	4	3	0.0	0	6.2	E	29	N	3	12	4	14	5.2	73
MEMPHIS U	271			83	66	74.2	- 0.8	93	3	50	30	5	0			2.05	- 0.76	1.06	5		0.0	0										
NASHVILLE	577	998.0	1017.8	82	58	70.0	- 2.8	91	11+	42	25	3	0	60	74	3.43	0.56	1.61	5	4	0.0	0	5.6	S	26	W	12	12	7	11	5.0	75
OAK RIDGE	905	986.0		81	58	69.4	- 1.6	89	21	40	25	0	0			1.43	- 1.87	0.58	5	4	0.0	0	5.0		32Y		22	18	3	9	4.2	
TEXAS																																
ABILENE	1759	955.0	1015.2	90	67	78.8	2.9	100	7+	45	30	15	0	61	59	0.67	- 1.40	0.60	4	4	0.0	0	6.4	SE	30	SE	7	12	9	9	4.8	72
AMARILLO	3607	891.7	1015.4	85	60	72.3	2.0	93	9+	40	29	7	0	55	61	0.43	- 1.46	0.12	6	3	0.0	0	12.7	SSW	37	SE	9	11	12	7	4.6	79
AUSTIN	597	993.2	1014.8	93	71	82.0	2.9	102	6+	58	30	18	0	64	60	1.50	- 1.94	0.96	8	3	0.0	0	7.4	NE	31	NW	12	14	9	7	4.6	71
BROWNSVILLE	16	1010.8	1013.3	91	74	82.4	1.2	96	18+	66	30+	18	0	72	74	4.31	- 0.68	1.57	10	2	0.0	0	9.6	ESE	26	NE	25+	8	17	5	5.3	56
CORPUS CHRISTI	43	1013.1	1014.3	91	73	81.9	1.1	97	9+	57	30	22	0	69	69	0.92	- 3.48	0.42	6	3	0.0	0	9.5	SE	40	NE	9	7	15	8	5.6	65
DALLAS	481	997.3	1015.6	90	69	79.8	1.9	103	7+	47	30	15	0	63	60	0.94	- 1.88	0.75	3	5	0.0	0	9.7	ESE	40	W	7	15	6	9	4.4	71

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
TEXAS	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
DEL RIO	1026			94	70	82.0		103	8	55	30	22	0		1.91		0.91	7	2	0.0	0	8.6					11	14	5	4.6	
EL PASO	3918	887.6	1013.0	88	65	76.2	1.2	94	9	53	30+	9	0	53	49	0.64	- 0.50	0.64	2	6	0.0	0	5.7	ESE	40	SE	5+	18	9	3	3.1	86
FORT WORTH	544	995.1	1015.7	90	68	79.2	0.8	102	7+	49	30	15	0	63	62	1.70	- 0.84	1.28	4	4	0.0	0	8.3	E	51*	NE	7	15	5	10	4.6	
GALVESTON U	7			85	75	80.0	- 0.1	90	8+	66	30+	4	0			9.30	4.21	2.68	9	0	0.0	0	10.4		50	NE	17					72
GALVESTON	5	1013.7	1014.6	85	75	79.8	- 0.4	92	5+	66	30	7	0	70	72	8.25	2.49	3.43	9	11	0.0	0	9.7	SE								
HOUSTON U	41			89	73	81.0	1.2	98	7	58	30	17	0			6.29	2.48	2.31	8		0.0	0										
HOUSTON	50	1011.5	1014.2	90	71	80.4	0.7	98	7	55	30	17	0	69	73	1.94	- 2.32	0.48	8	7	0.0	0	9.1	ENE	31*	N	17	9	15	6	5.0	73
LAREDO	500	998.5	1013.7	96	73	84.2	1.5	104	9	58	30	27	0	65	59	1.58	- 1.28	0.85	3	3	0.0	0	8.8	ESE	25*	ENE	20	14	11	5	4.5	
LUBBOCK	3243	905.5	1015.9	86	60	72.9	1.5	96	8	38	30	7	0	58	65	0.78	- 1.58	0.56	4	5	0.0	0	9.1	SE	26*	SSE	2	13	13	4	4.1	
MIDLAND	2854	916.9	1014.1	88	64	76.2	0.8	97	8	45	30	12	0	56	54	0.39	- 1.40	0.12	6	6	0.0	0	8.3	SE	24*	NE	29	10	14	6	4.7	
PORT ARTHUR	16	1012.7	1014.2	89	71	80.0	2.3	99	7	58	30	15	0	70	77	18.15	13.27	13.17	10	10	0.0	0	7.5	ENE	42	SE	17	13	9	8	4.9	73
SAN ANGELO	1903	948.4	1014.4	90	66	78.2	- 0.1	101	7	45	30	17	0	59	57	1.08	- 1.58	0.47	4	4	0.0	0	5.2	SE	22*	N	29	12	11	7	5.0	
SAN ANTONIO	792	989.9	1014.5	92	70	81.1	2.5	100	7	57	30	18	0	64	61	1.11	- 2.38	0.61	7	4	0.0	0	8.0	N	34	N	12	13	10	7	4.6	75
VICTORIA	104	1009.6		91	71	81.3	2.2	98	9+	56	30	19	0			1.23	- 3.00	0.58	6	8	0.0	0	8.2		48Y		15	6	16	8	5.6	
WACO	500	994.8	1015.5	92	70	80.8	1.8	102	7+	52	30	18	0	63	60	0.83	- 1.94	0.59	7	6	0.0	0	10.7	NE	37*	NNW	29	16	6	8	4.4	
WICHITA FALLS	994	979.3	1015.6	91	66	78.5	1.6	105	11	47	30	17	0	62	62	2.32	- 0.01	0.72	7	4	0.0	0	8.3	ESE	25*	NNE	29	14	10	6	4.1	
UTAH																																
MILFORD	5028	846.4		84	48	66.0	2.9	94	12	40	25	8	0			1.24	0.81	0.67	5	5	0.0	0						19	4	7	3.4	
SALT LAKE CITY	4220	869.7	1016.0	83	53	67.8	2.9	95	12	44	24	5	0	48	56	1.08	0.55	0.71	6	5	0.0	0	9.6	SSE	36	S	5	14	10	6	4.1	78
WENDOVER	4237	871.9		80	57	68.9	2.2	94	12	50	14	3	0			0.58	0.26	0.37	6	6	0.0	0						18	5	7	3.6	
VERMONT																																
BURLINGTON	331	1004.7	1019.4	67	40	53.5	- 6.4	80	3	25	24	0	5	44	70	1.42	- 1.89	0.52	7	1	0.0	0	8.2	N	38	NW	12	8	12	10	5.9	70
VIRGINIA																																
LYNCHBURG	947	994.0		78	55	66.8	- 1.9	90	12+	40	25	2	0			3.83	0.47	1.86	8	0	0.0	0	6.2		20	NE	22	16	7	7	4.6	62
NORFOLK	26	1008.2	1018.8	74	59	66.7	- 5.9	88	3	50	30+	0	0	59	77	6.84	2.62	5.20	13	0	0.0	0	10.8	NNE	35	NE	14	12	5	13	5.8	59
RICHMOND	162	1012.8	1019.0	77	54	65.5	- 4.7	91	12	37	25+	2	0	57	78	3.20	- 0.45	1.17	10	0	0.0	0	7.9	NNE	24	S	29	15	5	10	5.0	58
ROANOKE	1174	977.4	1019.5	78	54	66.0	- 3.1	89	20	35	25	0	0	53	68	2.87	- 0.39	1.61	7	0	0.0	0	6.6	NE	18*	NNW	30+	13	11	6	4.7	
WASHINGTON																																
OLYMPIA	190	1007.0	1014.5	75	51	62.6	4.1	91	9	41	19	2	0	54	79	2.16	0.07	0.68	6	3	0.0	0	5.0	SSW	25*	W	16	9	7	14	6.0	
SEATTLE TACOMA	400	1000.8	1015.0	73	54	63.5	4.6	89	9	45	24	0	0	54	78	0.59	- 1.46	0.26	8	3	0.0	0	7.5	N	22*	SW	13	11	6	13	5.6	
SEATTLE U	14			72	57	64.5	3.3	88	9	50	24	0	0			0.69	- 0.96	0.21	8		0.0	0			35	SW	9					58
SPOKANE	2356	945.9	1014.1	80	52	66.0	6.1	93	10+	41	19+	5	0	44	52	0.36	- 0.39	0.28	4	0	0.0	0	7.8	SW	35	SW	13	15	6	9	4.0	77
STAMPEDE PASS R	3958	880.4		65	48	56.5	4.6	82	9	37	17	0	0			1.64	- 2.75	0.75	10	1	0.0	0						14	3	13	5.1	
TATOOSH ISLAND	101	1011.7	1014.7	63	53	58.3	3.5	70	27+	50	19+	0	0	54	89	1.23	- 2.32	0.41	9	2	0.0	0	12.8	ENE	43	E	27	6	5	19	7.2	57
WALLA WALLA U	949			82	58	69.8	3.8	96	9	45	17	6	0			0.92	0.14		6	2	0.0	0										
YAKIMA	1061	974.8	1013.4	83	48	65.5	4.2	93	9	38	18+	6	0	47	58	0.08	- 0.27	0.04	4	3	0.0	0	7.0	W	24*	WSW	13	18	4	8	3.7	
WEST INDIES																																
SAN JUAN P.R.	5	1011.3	1014.1	88	75	81.3	0.8	91	13	72	5	6	0	74	82	10.85	4.09	3.08	21	14	0.0	0	7.4	ENE	25	SE	26	0	16	14	6.9	56
SWAN ISLAND	28	1007.9		88	78	83.2	0.2	90	26+	74	17+	2	0			3.43	- 1.76	0.81	14	11	0.0	0						1	6	23	8.3	
WEST VIRGINIA																																
BECKLEY	2504	932.2	1020.0	72	48	60.0		80	3	32	23	0	1	52	77	2.67		1.02	9	4	0.0	0	7.2	SSE	30*	W	3	9	9	12	5.9	
CHARLESTON	939	983.8	1019.3	77	52	64.5	- 3.2	90	11	34	24	1	0	54	77	1.34	- 1.58	0.70	4	2	0.0	0	4.2	NE	29*	WNW	12	8	14	8	5.6	
ELKINS	1970	951.0	1020.4	72	45	58.8		83	3	27	25+	0	3	51	83	2.39		0.81	8	3	0.0	0	4.7	NW	23*	NNW	3	6	13	11	6.1	
HUNTINGTON	827	989.4	1019.5	78	53	65.3		90	12+	37	25+	2	0	56	77	1.81	- 1.11	1.19	5	2	0.0	0	4.0	NNE	28*	NNW	12	7	14	9	5.7	
PARKERSBURG U	615			78	52	64.9	- 3.2	88	12+	38	25	0	0			0.99	- 1.72	0.76	4	2	0.0	0	5.4		27	W	3					66
WISCONSIN																																
GREEN BAY	682	996.8	1019.7	70	47	58.5	- 1.0	83	18	34	14	0	0	51	79	3.00	0.08	1.12	8	1	0.0	0	7.1	SW	34	N	12	6	12	12	6.2	57
LA CROSSE	652	994.5	1019.2	73	53	62.9	0.7	85	18	37	13	0	0	55	80	3.92	0.44	1.40	8	4	0.0	0	8.1	S	35*	NE	11	7	11	12	6.5	
MADISON	858	984.2	1019.5	73	47	60.2	- 0.8	86	18	32	14	0	1	52	79	2.30	- 1.02	0.80	5	6	0.0	0	7.1	S	40	NW	12	6	11	13	6.3	49
MILWAUKEE	672	994.7	1019.8	70	52	61.2	0.9	86	18	40	14	0	0	54	79	1.78	- 0.94	0.73	7	2	0.0	0	9.9	NNE	45	NE	28	9	10	11	5.6	55
WYOMING																																
CASPER	5319	840.4	1015.7	79	49	64.1	4.4	88	6	41	15	0	0	40	48	0.33	- 0.57	0.12	6	4	0.0	0	10.1	WSW	29*	WNW	16+	14	5	11	4.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
CHEYENNE	6126	817.7	1016.9	77	50	63.1	5.0	86	5	41	25	0	0	45	59	3.28	2.18	1.78	7	6	0.0	0	11.1	WNW	36	NW	1	14	10	6	4.4	78
LANDER	5563	834.9	1015.9	78	49	63.5	4.5	88	5	41	24+	0	0	43	52	0.19	- 0.84	C.06	7	4	0.0	0	5.8	WSW	36	W	15	13	10	7	4.2	65
SHERIDAN	3942	886.1		80	51	65.3	6.5	94	7	41	25	5	0			1.33	0.16	0.75	5	3	0.0	0	6.5	NW	37	S	10	10	10	10	5.2	68

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	992.4	1017.5	29.4	16.7	23.1	-0.4	34.4	10	11.7	30+	11	0	16.1	69	31	- 54	14	5	2	0	0	3.0	E	11.6	E	23+	12	10	8	5.2	65
HUNTSVILLE	184	996.1	1017.8	29.4	16.1	22.9	-0.7	35.0	11+	8.9	30	11	0	15.0	66	25	- 54	7	5	1	0	0	3.4	NNE	14.8*	NNW	29	14	6	10	4.7	
MOBILE	64	1012.6	1015.0	30.0	20.0	25.2	-0.1	34.4	22	12.2	30	14	0	18.9	71	15	-144	6	7	4	0	0	3.2	NE	11.2*	NNW	29	11	9	10	5.4	
MONTGOMERY	59	1008.3	1016.3	30.6	17.8	24.3	+0.8	36.1	11	11.1	24	17	0	16.7	68	99	- 2	74	5	2	0	0	3.4	E	12.1	N	4	15	4	11	5.0	63
ALASKA												8																				
ANCHORAGE	27	998.4	1003.3	15.6	6.7	11.1	2.3	21.1	2	1.7	23	1	0	7.2	86	25	- 39	9	14	0	0	0	1.7	SE	11.6*	SE	27	4	7	19	7.4	44
ANNETTE	34	1006.3	1010.3	16.1	11.7	13.9	1.9	22.8	10	7.8	22	2	0	11.1	86	431	180	72	24	1	0	0	5.5	SSE	22.8*	ESE	24	3	3	24	8.5	
BARROW	7	1013.6	1014.3	0.6	- 2.8	- 1.3	-0.5	2.8	13	- 8.3	25+	0	30	- 2.8	89	5	- 11	3	8	0	38	25	7.0	E	15.6*	E	1	0	3	27	9.3	
BARTER ISLAND	12	1012.1	1014.0	1.7	- 2.2	- 0.2	-0.3	8.3	28	- 7.2	26+	0	27	- 2.8	84	3	- 21	3	2	0	30	25	5.6	ENE	13.0*	E	9	6	9	15	6.5	
BETHEL	38	1001.1	1002.5	13.3	5.0	9.1	2.1	20.6	4	- 1.7	25	0	4	6.7	86	51	- 15	18	14	0	T	T	4.3	NNE	15.6*	S	27	3	5	22	7.9	
COLD BAY	29	998.4	1002.3	11.1	7.2	9.2	0.6	15.6	6	0.0	25	0	1	7.2	86	92	- 18	16	19	0	0	0	6.9	WNW	18.3*	SSE	28+	0	0	30	9.5	
CORDOVA	12	1002.5	1004.2	14.4	6.7	10.5	1.8	20.6	5	1.1	15	0	0	8.3	90	192	-125	47	24	0	0	0	2.5	E	9.4*	E	27+	1	2	27	9.1	
FAIRBANKS	133	989.9	1006.9	15.0	2.8	8.8	2.4	26.7	1	- 3.9	26	3	9	1.1	63	5	- 23	5	2	0	0	0	2.7	N	8.9*	NE	13+	10	12	8	5.0	
JUNEAU	5	1006.5	1007.8	13.9	8.3	11.2	1.8	20.0	1	1.7	28	0	0	8.9	89	204	35	26	24	0	0	0	4.5	ESE	16.1*	ESE	29	1	0	29	9.7	13
KING SALMON	13	1001.3	1001.4	15.6	6.1	10.6	1.8	21.1	2	- 0.6	22	1	2	7.2	82	55	- 23	16	15	0	0	0	4.4	N	22.8*	ESE	26	1	7	22	8.5	
KOTZEBUE	3	1007.0	1007.5	10.0	2.2	6.2	1.3	20.0	1	- 4.4	22	0	9	1.1	74	23	- 8	11	7	0	10	T	5.9	E	13.9*	WSW	28+	14	3	13	5.2	
MC GRATH	102	991.9	1004.6	13.9	1.7	7.8	1.2	20.6	4+	- 4.4	25+	0	11	2.8	73	9	- 58	8	4	0	0	0	2.2	N	11.2	SSW	27	10	4	16	6.1	
NOME	4	1004.3	1004.9	10.6	2.8	6.7	1.2	16.7	13	- 3.9	24	0	11	2.8	76	22	- 46	14	7	0	T	T	4.9	N	14.3*	ENE	26	11	7	12	5.4	51
ST. PAUL ISLAND	7	1001.8	1002.8	8.9	4.4	6.6	-0.4	11.7	4	- 1.1	2	0	4	5.6	89	75	- 3	26	19	0	T	T	6.8	NNW	16.5*	NNW	30	0	1	29	9.6	
SHEMYA	37	1001.7	1005.4	10.0	7.2	8.7	-0.3	11.7	16+	4.4	28	0	0	7.2	91	72	15	13	22	0	0	0	6.9	WNW	17.9*	NNE	27	0	4	26	9.2	
YAKUTAT	9	1004.8	1005.9	13.9	8.3	11.2	1.6	18.9	3	0.6	16	0	0	9.4	90	468	47	128	23	1	0	0	2.9	E	11.6*	ESE	17+	0	3	27	9.5	
ARIZONA																																
FLAGSTAFF	2131	794.1	1017.3	24.4	6.1	15.1	0.4	28.3	27	0.0	22+	0	2	5.6	62	20	- 20	8	6	10	0	0	2.4	N	9.4*	SSW	22+	15	9	6	3.9	
PHOENIX	340	971.3	1009.4	37.2	21.7	29.5	0.4	41.1	11+	16.1	22	29	0	11.7	36	T	- 19	T	0	2	0	0	3.1	ESE	16.1*	N	9	23	4	3	2.3	90
PRESCOTT	1528	848.9	1013.9	28.9	12.2	20.7	0.3	32.8	27+	6.7	21	3	0	8.9	53	22	- 8	12	4	6	0	0	3.4	SSW	22.8	S	18	18	7	5	3.2	83
TUCSON	788	924.2	1010.1	35.0	21.1	28.0	0.8	38.3	12	17.2	30	28	0	11.1	40	37	11	29	4	8	0	0	4.1	ESE	14.8	SW	4	20	5	5	3.1	84
WINSLOW	1487	853.9	1015.2	30.6	13.3	22.1	0.3	33.9	21	9.4	30+	7	0	9.4	53	29	6	11	6	6	0	0	3.3	SW	14.8*	NNW	13	17	8	5	3.3	
YUMA	61	1003.1	1008.5	40.0	23.9	32.2	0.4	45.6	8	19.4	21	30	0	13.9	40	63	53	61	2	1	0	0	3.1	SSE	13.9	E	10+	23	3	4	2.1	89
ARKANSAS																																
FORT SMITH	137	1000.5	1017.4	30.6	17.2	23.7	-0.1	37.8	3	4.4	30	11	0	16.7	69	48	- 44	34	5	2	0	0	2.8	ENE	15.2	W	11	13	7	10	5.1	64
LITTLE ROCK	78	1004.5	1017.6	30.6	17.2	23.7	0.2	38.9	3	6.7	30	12	0	18.3	76	46	- 36	20	5	3	0	0	2.8	NE	13.0	NW	29	11	8	11	5.2	70
TEXARKANA	110		1016.8	30.0	18.9	24.5	-0.2	35.6	4+	8.3	30	10	0	18.3	75	14	- 55	10	4	1	0	0	3.4	NE								92
CALIFORNIA																																
BAKERSFIELD	151	994.1	1011.6	31.7	18.3	25.1	0.4	41.7	26	15.0	23	15	0	13.9	54	21	19	13	3	0	0	0	2.1	NW	6.7*	NW	3	21	3	6	2.8	
BISHOP	1252	874.4		31.7	10.0	20.8	1.0	35.6	28	5.6	20	19	0			10	5	5	4	1	0	0						20	4	6	3.1	
BLUE CANYON	1609	841.2		22.8	12.8	17.7	0.2	29.4	26	6.7	17	0	0			25	9	19	4	0	0	0	2.7	SSW	12.5	ENE	18	16	4	10	4.0	
BURBANK	213	985.9	1011.4	31.7	17.8	24.6	2.1	41.1	28+	13.9	20	14	0	13.3	58	21	14	9	5	1	0	0	2.5	S	8.9*	SSW	26	21	4	5	2.7	
EUREKA U	13	1013.0		18.3	12.2	15.2	1.7	24.4	11	10.6	7	0	0			17	1	14	5	0	0	0	2.4	N#	11.6	S	22+	3	8	19	7.5	52
FRESNO	99	999.6	1011.3	32.8	16.7	24.8	1.5	41.7	26	13.3	21	19	0	12.8	53	4	1	4	1	1	0	0	2.7	WNW	8.9	NW	12	22	3	5	2.6	86
LONG BEACH	10	1010.1	1011.7	30.6	17.8	24.1	2.4	43.3	26	15.0	14	11	0	15.0	65	33	32	21	4	2	0	0	2.5	WNW	8.9*	WNW	28+	18	6	6	3.4	
LOS ANGELES	30	1007.7	1011.5	28.3	18.9	23.7	4.4	43.3	26	16.1	11	6	0	16.1	70	29	24	12	3	2	0	0	3.3	WSW	8.9*	SE	18+	17	7	6	3.6	
LOS ANGELES U	95			30.6	19.4	25.2	3.0	42.8	26	16.1	20	12	0			33	27	18	5	2	0	0	2.6	W#	8.5	W	28	21	4	5	2.8	80
MT SHASTA R	1080	892.6		26.1	8.3	17.3	0.9	33.3	26+	4.4	17+	4	0			17	- 6	11	3	1	0	0						18	7	5	3.4	
OAKLAND	1	1013.1	1013.4	23.3	15.0	19.2	0.8	30.6	2	12.8	24+	0	0	13.3	75	7	2	7	1	1	0	0	3.5	WNW	9.4*	WNW	15	14	10	6	4.0	
POINT ARGUELLO R	112	999.0		21.7	11.7	16.6	1.2	27.2	11	10.0	30+	0	0			23	20	14	5	2	0	0	2.2		8.0*	W	15	8	9	13	5.8	
RED BLUFF	104	999.2	1011.8	32.8	16.1	24.3	-0.2	40.6	4	11.1	23	15	0	8.3	41	T	- 9	T	0	0	0	0	3.5	NW	13.0	NW	15	18	5	7	3.4	82
SACRAMENTO	5	1010.8	1012.4	31.7	14.4	23.3	0.2	40.0	26+	11.1	23	15	0	13.3	62	12	7	12	1	1	0	0	2.1	SW	9.8	W	9	18	5	7	3.4	82
SACRAMENTO U	7			31.1	15.6	23.2	0.5	39.4	26	11.7	23	13	0			9	3	9	2		0	0										
SANDBERG R	1377	863.2		26.7	15.6	21.1	0.3	32.2	11	8.9	20+	1	0			64	59	28	4	3	0	0	4.5	S	12.5*	S	18+	22	4	4	2.4	
SAN DIEGO	4	1007.7	1011.0	27.8	18.9	23.5	2.7	43.9	26	17.2	25+	5	0	16.7	71	48	44	23	5	0	0	0	3.4	NW	10.3	SW	29	15	10	5	3.9	72
SAN FRANCISCO	2	1013.0	1013.7	24.4	13.3	19.1	1.3	33.9	26	11.7	24+	1	0	12.8	74	2	- 3	2	1	1	0	0	4.6	WNW	14.3	W	15	18	7	5	3.3	
SAN FRANCISCO U	16			22.2	13.9	18.2	1.5	31.1	26	12.2	30	0	0			2	- 4	2	1	1	0	0	3.8	W#	10.7	W	15					78
SANTA CATALINA	478	956.8		28.3	19.4	23.7		38.3	26	11.7	5	9	0			58		29	3	2	0	0						20	3	7	3.0	
SANTA MARIA	73	1004.3	1013.0	25.0	12.2	18.6	1.4	33.3	27	9.4	10	1	0	13.3	81	10	6	4	3	2	0	0	2.6	NW	9.8*	NW	23+	18	6	6	3.7	
STOCKTON	9	1010.5	1012.2	31.7	15.6	23.4		38.9	3	11.1	21	15	0	11.7	55	7		7	1	1	0	0	3.3	NW	9.8*	W	15	19	5	6	3.3	
COLORADO																																
ALAMOSA	2297	776.7		25.0	3.9	14.3	1.2	27.8	4	- 1.7	30	0	4			4	- 16	2	3	7	0	0						19	7	4	3.3	
COLORADO SPRINGS	1882	816.9	1018.5	25.6	11.7	18.6	2.4	30.6	18	4.4	29	0	0	8.9	58	47	20	19	7	10	0	0	3.8	NNE	13.0*	N	28	10	12	8	4.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	841.1	1016.0	27.8	10.0	18.8	1.3	33.3	18	4.4	28	3	0	7.8	56	32	3	15	9	6	0	0	3.5	S	12.5	NW	8	12	14	4	4.2	84
GRAND JUNCTION	1478	861.6	1015.0	28.9	13.3	21.0	1.1	32.2	27	8.9	1	1	0	4.4	40	12	- 11	5	3	3	0	0	2.3	SE	13.4	W	13	18	7	5	3.4	81
PUEBLO	1414	859.2	1015.4	29.4	12.8	21.2	1.9	33.9	18	6.7	29	7	0	9.4	53	25	4	11	7	8	0	0	4.1	SSE	18.8	N	28	15	12	3	3.6	84
CONNECTICUT																																
BRIDGEPORT	2	1019.2	1020.0	21.1	11.7	16.4	-2.2	27.8	9	2.2	24	0	0	11.1	73	49	- 51	36	8	0	0	0	6.4	NE	13.9*	SE	29	10	6	14	5.7	
HARTFORD	52	1013.2	1019.2	22.8	8.3	15.6	-1.3	31.1	19	- 1.1	25	0	2	9.4	72	126	34	62	8	1	0	0	3.4	N	11.6	NE	23	6	10	14	6.4	68
NEW HAVEN	2	1018.7		21.1	11.1	16.1	-1.7	26.7	10	1.1	25	0	0			66	- 34	39	7	1	0	0	3.8		12.1	S	29	6	10	14	6.0	64
DELAWARE																																
WILMINGTON	24	1016.2	1019.4	23.3	12.2	17.6	-2.2	31.1	12	2.8	24	0	0	11.7	70	89	- 11	50	6	2	0	0	3.8	NNE	9.8*	NNW	30	10	8	12	5.4	
DIST.OF COLUMBIA																																
WASHINGTON U	22			25.0	13.9	19.6		32.8	20+	6.1	25+	3	0			90		50	6	0	0	0										
WASH NATL AP	4	1014.8	1019.4	25.0	13.3	19.2	-1.8	33.3	12	3.9	25+	1	0	12.2	68	92	- 6	50	6	0	0	0	4.0	S	12.1	NNW	30	13	6	11	5.2	62
FLORIDA																																
APALACHICOLA U	4	1012.6		29.4	21.7	25.6	-0.5	33.3	5	15.6	24	3	0			282	66	128	9	7	0	0	3.6	NE	13.4	NE	1	11	10	9	5.1	
DAYTONA BEACH	9	1013.1	1014.8	29.4	22.2	25.9	-0.3	33.9	5	18.9	13	2	0	22.2	83	138	- 40	81	9	5	0	0	4.7	ENE	16.1*	ENE	24	4	9	17	7.6	
FORT MYERS	4	1012.8		32.8	23.3	28.0	0.6	35.0	16+	21.7	30	22	0			190	- 26	45	13	13	0	0	3.6		15.6*	SSW	29	3	10	17	7.2	
JACKSONVILLE	7	1014.0	1015.3	29.4	21.1	25.1	-1.2	34.4	13+	17.2	30+	5	0	21.1	82	125	- 67	33	14	4	0	0	4.2	NE	22.4	NE	24	7	7	16	6.7	50
KEY WEST	2	1011.9	1013.2	31.7	26.1	28.8	0.8	33.3	11+	22.2	24	15	0	23.3	74	469	298	169	17	17	0	0	4.5	ESE	14.8	S	29	0	13	17	7.7	55
LAKELAND U	65			31.1	22.8	26.7	-0.1	34.4	4	20.0	30+	11	0			82	- 84	18	14	10	0	0	3.4					5	10	15	6.8	46
MIAMI BEACH	3			30.6	25.6	28.1	0.4	32.8	29	21.1	19	3	0			309	122	82	14		0	0	5.0	E				1	14	15	7.1	41
MIAMI	2	1012.2	1013.5	31.1	23.9	27.4	0.0	32.8	6	21.1	9	10	0	23.3	82	282	42	105	17	14	0	0	3.6	E	14.3*	WSW	29	1	8	21	8.1	
ORLANDO	32	1009.8	1014.3	31.7	22.2	26.9	0.3	35.6	5	19.4	30	14	0	22.2	80	171	- 13	100	15	5	0	0	4.3	ENE	12.1*	SSW	29	5	8	17	7.2	
PENSACOLA U	4			29.4	21.1	25.5	-0.3	34.4	8+	13.3	30	9	0			140	- 40	54	9	6	0	0	3.4	N	9.8	NE	23					59
TALLAHASSEE	18	1012.8	1015.6	30.6	19.4	25.1	-0.6	35.0	5+	13.9	30	15	0	19.4	75	168	28	104	7	6	0	0	4.4	ENE	19.7*	N	5	9	12	9	5.8	
TAMPA	6	1012.5	1014.1	31.1	22.2	26.7	-0.2	35.6	1	17.8	10	15	0	21.7	80	98	- 77	33	13	11	0	0	5.1	NE	16.5*	WNW	29	6	8	16	7.1	67
WEST PALM BEACH	5	1013.1	1014.2	31.7	23.3	27.5	-0.3	35.0	6	21.1	30	14	0	23.3	81	264	19	57	19	17	0	0	3.0	ESE	17.9*	SW	29	3	8	19	7.7	
GEORGIA																																
ATHENS	245	988.8	1017.6	27.8	16.1	21.7	-1.3	33.3	12+	6.7	24	5	0	16.1	75	118	41	93	6	4	0	0	3.0	NE	8.0*	ENE	28+	12	9	9	5.1	
ATLANTA	306	976.2	1017.7	26.7	16.7	21.6	-1.2	32.2	12	8.3	24	1	0	16.1	74	132	49	79	7	1	0	0	3.0	ENE	15.2*	E	24	13	8	9	5.0	68
AUGUSTA	44	1010.3	1017.1	28.3	16.1	22.2	-1.9	35.0	4	10.6	24	9	0	17.2	77	114	38	69	9	4	0	0	2.8	NE	10.3*	WNW	4	5	12	13	6.6	
COLUMBUS	117	1002.6		29.4	17.8	23.6	-0.8	35.0	12	11.7	24	11	0			77	7	56	3	1	0	0	3.7		10.7*	E	23	13	4	13	5.4	
MACON	109	1003.7	1017.2	29.4	17.8	23.7	-1.0	36.1	4	11.7	24	12	0	16.7	71	117	47	60	4	2	0	0	3.4	NE	10.3	NE	24	9	8	13	6.0	62
ROME	194	995.0		28.9	14.4	21.7	-0.8	34.4	12	4.4	24	8	0			174	90	161	7	4	0	0						13	8	9	4.9	
SAVANNAH	15	1014.0	1016.6	28.9	18.3	23.5	-1.3	34.4	13+	13.3	24	5	0	18.3	77	92	- 42	54	7	4	0	0	4.4	NE	12.5	NE	24	5	11	14	6.9	60
THOMASVILLE U	86			29.4	19.4	24.4	-1.4	35.0	4	13.9	24	11	0			147	24	92	7	3	0	0										
HAWAII																																
HILO	9	1012.9	1014.9	28.9	20.0	24.4	0.3	30.6	16	18.3	20	0	0	20.0	79	259	43	100	21	0	0	0	3.6	WSW	10.3	NNE	16+	4	10	16	7.4	33
HONOLULU	2	1014.5	1014.8	31.1	23.3	27.2	1.0	32.8	24	20.0	22	6	0	18.9	64	37	12	36	4	0	0	0	4.6	ENE	16.1	SE	17	10	15	5	4.7	69
KAHULUI	13	1011.9	1014.8	30.0	21.7	25.7		31.7	27	18.3	20+	0	0	20.0	72	30		25	3	0	0	0	7.6	NE	16.1*	NE	4+	14	11	5	4.4	72
LIHUE	35	1010.7	1016.1	29.4	22.8	26.3	0.7	30.6	27+	19.4	22	0	0	21.1	74	54	1	36	18	0	0	0	5.3	NE	14.3	NE	17	11	13	6	4.9	
IDAHO																																
BOISE	865	919.3	1014.0	29.4	13.9	21.6	4.3	37.8	5	8.3	18	12	0	7.2	45	19	9	8	9	4	0	0	3.3	SE	14.8	SE	19	12	8	10	5.0	71
IDAHO FALLS 42NW R	1460			25.6	6.1	15.9	2.5	32.8	12	0.6	25	1	0			35	19	11	11		0	0	2.5	NNE	12.1A	SW	13					
IDAHO FALLS 46W R	1504	850.6		25.0	7.2	16.2	2.6	32.2	5	2.2	27+	1	0			35	26	11	8	2	0	0	2.2	SW	10.7A	SW	14					
LEWISTON	431	962.3		28.9	12.8	21.0	3.5	35.6	4	6.1	18+	12	0			13	- 10	11	4	2	0	0						13	7	10	4.9	
POCATELLO	1355	865.1	1016.1	26.7	9.4	18.1	2.4	32.8	12+	3.9	26	3	0	7.2	55	24	9	8	6	5	0	0	2.9	SW	18.8	SW	20	9	12	9	5.1	64
ILLINOIS																																
CAIRO U	96	1004.9		27.8	16.7	22.2	-0.3	32.2	20+	7.8	30	4	0			40	- 36	18	4	2	0	0	2.7	NE#	9.8	NW	12	11	8	11	5.3	72
CHICAGO O HARE	201	994.6	1019.2	25.6	11.1	18.2		32.2	19	3.3	14	1	0	12.2	68	73		35	6	4	0	0	3.4	NNE	14.3*	NNE	28	5	13	12	6.3	
CHICAGO MIDWAY	186	996.6	1019.4	25.6	13.9	19.8	0.7	33.3	19	7.2	30+	2	0	13.3	71	67	- 3	33	6	3	0	0	3.9	NE	15.2	NE	28	6	13	11	5.9	59
MOLINE	177	996.8	1019.1	25.0	11.7	18.3	-0.2	31.7	19	3.9	30	0	0	13.9	77	60	- 22	28	8	2	0	0	3.4	ESE	13.4	N	28	6	11	13	6.3	61
PEORIA	199	997.5	1020.0	25.0	12.2	18.4	-0.7	30.6	19	3.9	30	0	0	12.8	73	45	- 33	15	4	4	0	0	3.5	S	13.0	NW	28	11	9	10	5.3	72
ROCKFORD	222	992.3	1019.5	24.4	11.7	17.8	0.1	29.4	19+	4.4	14	0	0	12.2	74	100	11	34	7	5	0	0	3.4	SW	13.0*	NNE	28	5	14	11	6.0	
SPRINGFIELD	179	995.2	1018.4	26.7	12.2	19.4	-0.4	31.7	19	3.9	30	0	0	12.8	70	19	- 56	9	6	4	0	0	3.6	S	12.5	N	29	10	15	5	4.6	86

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature								No. of days			Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers) Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	°C.	°C.	°C.	C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1002.6	1018.6	28.3	11.7	19.8	-1.1	33.3	20+	3.9	30	5	0	13.3	73	25	- 47	21	4	3	0	0	2.0	NW	9.4	S	11	12	8	10	5.1	72
FORT WAYNE	241	988.5	1019.6	25.6	10.6	18.0	-0.2	31.1	19	2.8	30	0	0	10.0	64	29	- 38	18	7	2	0	0	2.9	NE	11.6	SW	11	11	11	8	5.0	78
INDIANAPOLIS	242	989.2	1019.2	26.1	11.1	18.6	-0.6	30.6	19	2.2	30	0	0	11.7	69	6	- 76	6	1	1	0	0	3.2	NNE	14.3*	NW	12	7	19	4	5.2	73
SOUTH BEND	234	991.2	1019.3	25.0	11.1	18.1	0.4	30.6	19+	4.4	14	0	0	10.6	65	30	- 48	14	5	4	0	0	3.6	ESE	10.3*	NE	28+	8	12	10	5.4	
IOWA																																
BURLINGTON	212	993.5	1019.1	25.6	12.8	19.2	0.3	32.8	19	6.1	30	1	0	13.3	75	32	- 49	17	7	2	0	0	3.7	ESE	13.9	W	28	9	8	13	5.7	69
DES MOINES	289	987.6	1018.9	24.4	13.3	18.8	0.0	30.6	19	6.1	30+	0	0	14.4	78	46		15	9	1	0	0	3.7	SE	14.8	N	28	9	12	9	6.1	55
DUBUQUE	325	993.7		22.8	11.1	16.8	0.3	28.3	18	2.8	13	0	0			78	- 17	32	9	4	0	0			11.2*	SSW	2	7	5	18	6.8	
SIOUX CITY	334	976.5	1017.6	25.0	13.9	19.5	1.4	33.9	8	5.0	29	2	0	13.9	76	51	- 18	28	8	5	0	0	3.8	SSE	15.6	N	28	8	6	16	6.2	57
WATERLOO	265	986.9	1018.8	24.4	11.1	17.6	0.2	30.6	18	2.8	13	0	0	13.3	80	64	- 33	28	11	5	0	0	3.6	SE	13.0*	N	28	7	9	14	6.3	
KANSAS																																
CONCORDIA	448	967.5	1016.9	27.8	15.0	21.4		34.4	6	6.7	29	4	0	15.6	73	55		22	8	7	0	0	5.1	SSE	16.1	NE	21	12	9	9	5.1	62
DODGE CITY	791	929.4	1016.4	29.4	16.1	22.7	1.4	34.4	7+	3.9	29	3	0	15.0	68	47	8	26	8	9	0	0	5.5	SSE	17.9	NE	28	9	11	10	5.3	78
GOODLAND	1111	890.5	1015.9	27.2	12.8	20.1	1.4	34.4	6	1.7	29	4	0	12.8	70	123	91	63	8	9	0	0	5.6	S	15.6*	NNE	28+	10	14	6	4.5	
TOPEKA	267	982.0	1017.4	28.9	15.6	22.2	1.4	36.1	8	3.9	30	7	0	15.0	69	25	- 50	10	8	6	0	0	4.4	E	17.9	N	28	8	9	13	5.6	60
WICHITA	403	968.6	1016.6	27.8	17.2	22.5	0.7	33.3	2	7.8	30	2	0	16.7	72	124	43	43	10	11	0	0	4.1	S	18.8	N	28	9	11	10	5.5	66
KENTUCKY																																
COVINGTON	265	987.0	1018.7	26.7	10.6	18.7	-1.4	32.8	20+	0.6	30	4	0	11.1	66	5	- 67	2	5	1	0	0	2.9	NE	9.4*	SW	12	8	16	6	5.1	
LEXINGTON	298	983.4	1019.1	25.6	12.8	19.2	-1.5	30.0	12+	3.3	30	0	0	12.2	68	9	- 62	3	4	2	0	0	2.7	ENE	9.4*	ESE	23	13	12	5	4.4	
LOUISVILLE	144	999.3	1018.5	21.1	12.8	19.3	-1.2	32.8	12+	2.8	30	3	0	14.4	77	88	22	66	3	4	0	0	2.2	N	17.4	N	12	7	12	11	5.5	65
LOUISIANA																																
ALEXANDRIA	28	1011.4	1015.9	31.1	18.3	24.7		37.2	5	7.8	30	16	0	18.9	76	76		25	9	6	0	0	2.4	NNE	11.2	NNE	13+	18	4	8	4.1	
BATON ROUGE	20	1012.4	1015.5	31.7	20.6	26.1	0.9	36.1	7+	10.6	30	17	0	20.0	74	48	- 41	27	8	4	0	0	3.1	ENE	13.0	WNW	5	12	9	9	5.3	
LAKE CHARLES	4	1013.6	1015.0	31.1	21.1	25.9	0.0	35.0	7+	12.2	30	13	0	20.6	78	223	121	100	12	8	0	0	3.7	ENE	11.2*	ENE	8	12	11	7	4.7	
NEW ORLEANS	1	1012.8	1015.1	30.0	20.6	25.4	-0.1	34.4	7	13.9	30	13	0	21.1	80	187	59	76	11	7	0	0	3.0	ENE	9.4*	N	29+	10	8	12	5.4	
NEW ORLEANS AUDUBON	2	1008.2		30.6	22.2	26.3		34.4	5	16.1	30	13	0			164		61	11	10	0	0	1.7	NE#	6.3	NW	13	6	14	10	5.9	47
SHREVEPORT	77	1007.5	1016.7	31.7	20.0	25.8	0.3	37.8	4	9.4	30	15	0	18.9	71	60	2	34	7	4	0	0	3.8	ENE	13.0	SSW	5	16	6	8	4.2	63
MAINE																																
CARIBOU	190	995.1	1018.4	17.2	3.3	10.5	-1.6	25.6	18+	- 2.8	24	0	8	6.7	74	86	- 4	29	14	0	0	0						7	12	11	6.2	
PORTLAND	19	1015.2	1019.2	18.9	6.1	12.7	-2.2	25.6	26	- 2.2	14	0	5	7.8	74	58	- 31	40	10	0	0	0	3.7	N	13.4	N	23	9	7	14	6.2	60
MARYLAND																																
BALTIMORE	45	1014.7	1019.4	23.9	11.7	17.8	-2.3	32.2	12	1.7	25	1	0	11.7	72	105	20	51	7	1	0	0	3.9	W	11.6	NW	29	14	3	13	5.0	60
BALTIMORE U	4			24.4	15.0	19.6	-1.9	32.2	12	6.1	25+	1	0			111	19	60	6	0	0	0										
FREDERICK	90			24.4	10.6	17.3	-2.0	32.2	20	- 1.1	25+	1	2			62	- 25	50	6	0	0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	994.6		19.4	9.4	14.4	-2.4	28.3	19	0.6	24	0	0			108	8	39	10		0	0	6.2	SSW	17.9	SSW	12					58
BOSTON	5	1014.3	1018.9	20.6	11.7	16.0	-2.5	30.6	19	3.9	24	0	0	9.4	69	77	- 10	37	10	0	0	0	6.2	SSW	14.8	SW	12	7	8	15	6.4	64
NANTUCKET	13	1018.2	1018.6	18.3	11.7	15.2	-1.7	23.3	2	4.4	24	0	0	11.7	82	167	78	72	13	0	0	0	6.1	NNE	15.2	N	6	6	4	20	7.2	51
PITTSFIELD	357			19.4	5.0	12.3	-2.2	27.2	19	- 5.0	24	0	4			69	- 45	46	7		0	0										
WORCESTER	301	982.4	1019.2	18.9	8.3	13.6	-2.4	26.7	19+	2.2	23	0	0	8.3	75	111	12	56	10	1	0	0	4.3	W	11.6*	NW	30	8	8	14	6.1	
MICHIGAN																																
ALPENA	210	995.0		19.4	5.6	12.4	-1.8	28.3	18	- 3.3	14	0	6			49	- 43	23	7	1	0	0	2.8	SW	14.3	NE	12	9	7	14	6.4	51
DETROIT	189	993.2	1019.9	23.3	11.1	17.3	-0.8	30.6	19	5.6	24+	0	0	10.0	66	33	- 29	18	6	1	0	0	3.6	N	12.1	W	27+	13	5	12	5.4	62
DETROIT M WAYNE CO	193	995.8	1020.1	23.3	8.3	15.7	-2.0	31.1	19	1.7	30	0	0	10.6	76	36	- 23	21	6	2	0	0	2.8	ENE				12	6	12	5.5	
DETROIT WILLOW RUN	217	991.4	1019.9	23.3	8.9	16.1	-2.2	31.1	11	3.3	30+	0	0	10.0	71	37	- 22	23	6	2	0	0	3.6	NNE	12.5*	W	3	11	8	11	5.3	
ESCANABA U	181	997.0		17.8	8.9	13.3	-0.8	25.0	18	2.8	29	0	0			54	- 26	24	8	3	0	0	4.3		21.0	N	12	3	15	12	6.6	43
FLINT	233	992.8	1020.8	21.7	7.8	14.9	-1.6	28.9	18	0.6	14	0	0	10.0	76	47	- 28	19	8	1	0	0	2.9	SW	9.4*	WSW	27	10	7	13	5.9	
GRAND RAPIDS	210	994.6	1020.1	22.8	10.0	16.2	-0.6	28.9	11	2.2	14	0	0	10.6	72	75		40	7	2	0	0	3.8	E	13.4	NE	28	12	5	13	5.6	66
LANSING	260	987.8	1019.9	22.8	8.3	15.6	-1.1	30.0	11	1.1	14	0	0	10.6	75	43	- 23	20	9	1	0	0	2.5	NE	11.6	W	27	11	8	11	5.8	61
MARQUETTE U	206	992.2		18.9	9.4	14.0	-0.3	27.8	10	2.2	13	0	0			56	- 27	19	7	2	0	0	3.5	S#	11.2	S	24	5	9	16	6.9	58
MUSKEGON	191	996.5	1019.7	21.7	10.0	15.8	-0.6	28.3	11	2.2	14	0	0	11.1	76	71	- 7	34	7	3	0	0	4.5	ESE	11.6*	N	28	10	6	14	5.8	
SAULT STE MARIE	220	997.2	1020.1	17.2	7.2	12.3	-0.7	25.6	18	0.6	29+	0	0	8.3	81	68	- 28	33	10	2	0	0	3.3	ENE	10.3*	NNE	12	2	10	18	7.6	49
MINNESOTA																																
DULUTH	435	976.3	1019.2	20.0	8.9	14.4	1.8	27.2	8	- 1.1	13	0	1	10.0	78	71	- 2	24	10	4	0	0	4.4	ESE	14.3	NE	11	8	8	14	6.1	53

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	°C.	°C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
INTERNATIONAL FALLS	359	976.3	1018.3	21.1	7.2	13.9	2.3	28.3	10	- 1.7	13	0	3	9.4	78	64	- 10	34	9	3	0	0	3.0	S	10.3*	SSE	14	8	11	11	6.0	
MINNEAPOLIS	251	985.3	1018.8	22.8	10.6	16.8	0.9	29.4	11+	1.1	29	0	0	12.2	79	88	26	34	10	6	0	0	3.4	SSE	14.3	WNW	11	11	6	13	5.9	62
ROCHESTER	395	971.5	1019.4	22.2	10.0	16.2	0.2	28.3	18	0.0	13	0	1	11.7	78	67	- 11	39	11	4	0	0	4.9	SSE	12.5*	NNW	12	7	7	16	6.2	
ST CLOUD	315	979.5		22.2	10.0	16.2	1.3	29.4	11+	0.6	13	0	0			86	25	47	9	4	0	0						9	8	13	6.0	
MISSISSIPPI																																
JACKSON	93															22		14	3	1	0	0	2.8	ENE	11.2	NNE	4	12	9	9	4.9	
MERIDIAN	89	1003.2	1016.8	30.6	16.7	23.5	-0.9	37.2	11	8.3	30	16	0	17.2	73	18	- 66	12	3	3	0	0	2.6	N	8.0*	N	4	12	10	8	5.1	
VICKSBURG U	71	1006.9		29.4	19.4	24.3	-0.5	33.9	11+	8.9	30	12	0			3	- 61	2	3	2	0	0	3.1		8.9	N	12+	12	7	11	4.6	73
MISSOURI																																
COLUMBIA	237	989.0	1017.5	27.2	15.0	21.1	0.4	33.9	2	6.1	30	4	0	14.4	71	53	- 46	22	7	7	0	0	4.1	SSE	15.2	NW	28	11	8	11	5.0	75
KANSAS CITY	226	982.8	1017.2	29.4	17.2	23.4	1.8	36.1	2	8.3	30	7	0	14.4	61	37	- 46	12	7	4	0	0	3.8	ENE	13.4	N	28	9	9	12	5.5	63
ST JOSEPH	247	983.3		27.2	15.0	21.2	0.8	35.0	9	5.6	30	5	0			30	- 57	10	7	5	0	0	2.8	SE	9.4*	N	28+	9	9	12	5.6	
ST LOUIS	163	997.8	1018.5	27.2	13.3	20.3	-0.8	32.2	20+	5.6	30	2	0	12.8	67	29	- 41	20	2	1	0	0	3.7	SE	13.0	N	29	9	13	8	4.8	76
ST LOUIS RFC	142			27.8	16.1	21.9	-0.2	32.8	7	10.0	30	2	0			37	- 39	32	2	0	0	0										
SPRINGFIELD	386	971.0	1018.1	27.8	15.0	21.3	0.0	32.2	20+	1.7	30	2	0	15.0	72	46	- 51	22	6	3	0	0	3.7	SSE	23.2	SE	10	9	11	10	5.2	68
MONTANA																																
BILLINGS	1087	892.7	1015.5	25.0	11.7	18.4	2.7	33.3	7	7.8	29+	4	0	7.8	57	33	3	25	6	1	0	0	4.7	WSW	14.8	NW	14	12	7	11	5.5	69
GLASGOW	694	940.5		25.6	11.1	18.4	4.7	33.3	30+	3.3	28	3	0			8	- 16	6	4	3	0	0						11	7	12	5.0	
GREAT FALLS	1116	889.4	1015.2	25.6	10.0	17.8	3.4	32.8	27+	3.3	16	3	0	4.4	48	22	- 8	10	7	4	0	0	4.5	SW	15.2	SW	14	15	5	10	4.4	72
HAVRE	787	926.7		26.1	8.9	17.7	4.3	33.9	7+	1.1	20	6	0			9	- 17	7	5	1	0	0	3.6	E#	17.9	W	14+	16	5	9	4.1	67
HELENA	1187	875.3	1016.6	25.0	7.8	16.2	2.9	32.8	5	2.8	18	2	0	7.2	61	28	4	13	9	3	0	0	3.0	WNW	15.2	W	22	14	5	11	4.8	68
KALISPELL	904	912.6		23.9	6.1	14.9	2.6	31.7	5	- 0.6	19	0	2			32	6	12	6	2	0	0	2.2					15	4	11	4.4	
MILES CITY				26.7	12.2	19.6	3.4	34.4	7	6.7	29	7	0			49	24	41	4	1	0	0	3.8	SE	11.2*	WSW	23					
MISSOULA	972	903.4	1017.2	24.4	6.1	15.2	2.2	32.8	7	0.6	18	1	0	8.3	72	39	13	14	9	5	0	0	2.3	SSE	10.7	NW	2	12	7	11	5.0	64
NEBRASKA																																
GRAND ISLAND	561	951.9	1017.6	24.4	12.2	18.2	-1.1	31.7	8	2.8	29	0	0	14.4	84	88	33	48	8	9	0	0	4.1	SSE	13.0*	N	28	12	3	15	5.8	
LINCOLN U	351			25.6	15.0	20.2	0.1	33.9	8	7.2	29	2	0			89	16	39	9	6	0	0	4.2	SE#	15.6	NW	28	8	7	15	6.3	52
NORFOLK	471	961.9		25.0	13.3	19.2	0.9	32.8	8	3.3	29	3	0			33	- 24	9	8	4	0	0						10	5	15	5.9	
NORTH PLATTE	847	917.8	1016.0	25.6	12.2	18.8	1.2	32.8	11	- 0.6	29	2	1	13.3	77	153	111	64	11	10	0	0	4.2	SSE	18.8	NE	28	10	8	12	5.7	54
OMAHA	298	978.0	1017.7	26.1	13.9	19.9	0.5	33.3	8	5.0	29	2	0	13.9	73	55	- 11	26	8	3	0	0	3.9	SSE	17.9	NW	28	8	10	12	6.0	55
OMAHA N OMAHA AP	403	969.9		24.4	13.9	19.2	0.8	31.1	19+	6.1	29	0	0			57	- 7	38	9	3	0	0						7	9	14	6.2	
SCOTTSBLUFF	1204	881.4	1015.8	27.2	11.7	19.4	2.6	33.9	6	3.9	29	4	0	11.1	66	35	4	18	5	2	0	0	4.4	ESE	17.9*	WSW	23	11	8	11	4.8	
VALENTINE	789	925.9		25.6	11.7	18.7	2.1	34.4	8	1.1	29	2	0			56	25	34	6	5	0	0	4.5	S#	14.8	S	16	8	9	13	5.9	55
NEVADA																																
ELKO	1547	846.6	1015.7	27.8	5.6	16.4	2.1	33.3	4	0.0	24	3	1	2.8	41	21	12	11	5		0	0	2.6	E	15.6*	S	19	13	11	6	4.2	
ELY	1907	811.7	1014.6	25.0	5.6	15.4	1.3	30.0	26+	1.7	24+	0	0	3.3	50	55	41	32	9	5	0	0	3.9	S	18.8	S	15	14	8	8	4.4	79
LAS VEGAS	659	946.4	1011.9	34.4	19.4	26.9	0.0	40.0	12+	15.0	20	23	0	7.2	34	40	31	27	4	3	0	0	3.8	WSW	13.4*	S	15	21	6	3	2.5	84
RENO	1342	863.3	1015.4	28.3	6.7	17.4	1.7	32.8	29+	1.7	24+	9	0	5.0	50	5	- 1	4	3	1	0	0	2.1	S	14.3	SW	12	17	4	9	4.1	78
WINNEMUCCA	1310	868.5		28.3	6.7	17.6	2.8	35.6	4	0.0	24	14	1			6	- 2	5	4	2	0	0	3.3	S	18.8	W	12	13	8	9	4.7	68
NEW HAMPSHIRE																																
CONCORD	103	1008.5	1019.3	21.1	6.1	13.6	-1.6	30.0	19	- 4.4	24	0	6	7.2	70	54	- 41	35	9	1	0	0	2.3	NW	11.6	NW	30	10	8	12	5.8	64
MT WASHINGTON OBS	1909	808.3		7.2	0.6	3.8	-1.2	13.9	18	- 8.9	23	0	13			79	- 99	25	12	0	0	0	10.6	W#	40.2Y	W	30	9	6	15	6.4	49
NEW JERSEY																																
ATLANTIC CITY	18	1017.2	1019.4	22.8	12.8	17.7	-1.8	30.0	20	2.2	24	0	0	12.2	74	110	26	49	9	2	0	0	4.7	N	13.0*	SSW	29	15	1	14	5.5	54
ATLANTIC CITY U	3			20.6	13.9	17.1	-3.1	26.7	28	5.6	25+	0	0			79	- 7	39	7	0	0	0	6.7		17.9*	SSW	29					
NEWARK	3	1018.3	1019.5	22.8	12.8	17.8	-1.8	31.1	12+	5.6	25+	0	0	10.6	66	100	5	49	10	2	0	0	5.1	NNE	13.0*	NNW	30+	14	4	12	5.5	
TRENTON U	17	1011.7		22.2	11.7	17.0	-2.5	30.0	12	2.8	24	0	0			112	23	53	9	5	0	0	3.8	N#	13.0	S	29	13	3	14	5.5	58
NEW MEXICO																																
ALBUQUERQUE	1618	851.5	1014.8	29.4	15.6	22.5	1.1	33.3	9+	10.0	30	3	0	9.4	49	16	- 8	8	5	4	0	0	3.2	SE	16.1	SE	28	15	8	7	3.8	82
CLAYTON	1515	849.1		27.8	12.8	20.3	1.4	31.1	19	3.3	29	0	0			19	- 23	7	4	6	0	0						18	6	6	3.4	
RATON	1944	810.4		26.7	9.4	18.1	1.4	31.1	19	4.4	29+	0	0			68	25	46	9	12	0	0						9	14	7	4.5	
ROSWELL	1103	895.4		31.1	13.9	22.4	1.8	34.4	9+	4.4	30	9	0			16	- 30	13	6	3	0	0	3.2		9.4	NE	12	15	12	3	3.5	88
SILVER CITY	1638	838.7		28.9	13.3	21.2		32.2	8	9.4	30+	1	0			22		5	9	11	0	0						16	7	7	4.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet		Average speed	Prevailing direction	Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground			Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
ALBANY	84	1016.1	1020.0	20.6	6.7	13.8	-2.7	27.8	8	- 2.8	24	0	4	7.8	70	68	- 23	30	5	1	0	0	3.0	N	16.5	SW	12	7	12	11	6.1	58
BINGHAMTON	485	959.2	1019.6	18.3	6.7	12.6	-2.9	25.6	19	- 3.3	24	0	2	7.8	76	47	- 27	21	6	0	0	0	3.9	NNW	12.5	NW	29	5	13	12	6.2	66
BUFFALO	215	992.2	1020.5	20.0	7.8	13.9	-2.4	26.1	11	0.0	24	0	1	8.3	71	30	- 49	12	6	2	0	0	3.8	NE	14.3	SW	12	10	6	14	5.7	68
NEW YORK U	40	1008.2		22.2	12.2	17.3	-3.0	30.6	19	4.4	24	0	0			100	2	55	11	2	0	0	4.1	N#	11.2	N	13	16	2	12	4.7	59
NEW YORK LA GUARDIA	6	1017.4	1019.2	22.8	14.4	18.5	-1.9	29.4	19	6.7	24	0	0	10.6	62	90	- 10	47	10	3	0	0	5.3	N	12.1	S	3	10	8	12	5.6	
ROCHESTER	166	1001.2	1020.6	20.6	6.7	13.7	-3.2	28.9	19	- 1.1	24	0	1	8.9	75	30	- 35	13	5	1	0	0	3.8	WSW	21.9	W	12	12	7	11	5.1	63
SCHENECTADY	66			20.6	7.8	14.1	-2.6	26.7	8+	0.0	24	0	1			57	- 33	39	6	1	0	0						22	4	4	3.0	
SYRACUSE	127	997.8	1019.8	21.1	7.2	14.0	-2.9	27.2	19+	- 1.7	24	0	3	7.2	66	22	- 51	10	6	1	0	0	3.4	E	19.2	W	12	12	10	8	5.0	70
NORTH CAROLINA																																
ASHEVILLE U	671	940.1		25.0	12.8	19.0	-0.9	31.1	21	6.7	24	0	0			92	22	57	4	1	0	0	2.6	NW	9.4	S	24+	11	11	8	5.0	58
CAPE HATTERAS R	2	1016.4	1017.1	25.0	17.8	21.4	-2.0	29.4	12+	10.6	28	0	0	17.8	80	122	- 27	80	9	3	0	0	5.3	NNE	15.6*	SSW	29	4	10	16	7.2	50
CHARLOTTE	224	990.5	1018.4	26.7	15.6	21.2	-1.3	32.2	21	6.7	24	1	0	15.0	72	94	5	85	6	1	0	0	2.9	NE	9.4	NE	22	10	10	10	5.5	68
GREENSBORO	272	987.4	1019.2	25.0	12.8	18.8	-2.4	30.6	21+	3.3	24	0	0	13.3	76	102	9	70	8	2	0	0	3.1	NE	10.3	NE	23	11	9	10	5.3	64
RALEIGH	132	1004.6	1018.3	26.1	12.8	19.5	-2.3	31.7	12+	3.9	24	0	0	14.4	75	70	- 27	39	7	1	0	0	2.8	N	8.0*	N	22	11	8	11	5.8	55
WILMINGTON	9	1015.0	1017.8	26.7	16.1	21.2	-2.8	32.8	4	8.9	23	1	0	17.2	81	102	- 58	56	6	3	0	0	3.6	NE	13.4	NE	25	6	7	17	7.1	55
WINSTON SALEM	295	983.9	1019.1	25.0	13.3	19.2	-2.7	30.6	12	5.0	25+	0	0	14.4	77	124	34	67	9	1	0	0	3.1	NE	10.3*	WSW	12	12	7	11	5.2	
NORTH DAKOTA																																
BISMARCK	502	956.5	1016.9	24.4	7.8	16.1	1.2	35.6	26	- 0.6	29	2	1	9.4	71	18	- 12	6	7	4	0	0	3.9	S	16.1	N	28	9	7	14	5.8	65
FARGO	274	982.9	1017.3	23.9	10.0	16.8	1.9	31.1	26	1.1	29	0	0	11.1	73	30	- 7	13	7	2	0	0	4.6	SSE	14.3	N	11	10	7	13	5.7	61
WILLISTON	579	948.4		25.6	9.4	17.4	3.2	35.0	7	1.1	29	4	0			3	- 26	2	3	1	0	0	3.9	SW#	15.2	W	14	10	8	12	5.1	68
OHIO																																
AKRON	369	981.7	1019.9	23.3	8.9	16.3	-1.2	29.4	11	2.8	30+	0	0	8.9	66	39	- 27	35	4	2	0	0	3.4	NNE	9.4*	WNW	27+	13	7	10	4.8	
CINCINNATI OBS	232			27.2	12.2	19.8	-0.8	32.8	12	4.4	30	4	0			14	- 55	11	4	2	0	0	2.0	N#	9.8	W	12					68
CINCINNATI U	169	995.8		27.8	13.9	20.8	-0.4	33.3	19	7.2	30	7	0			12	- 61	11	2	2	0	0										
CLEVELAND	237	991.8	1019.7	22.2	9.4	15.7	-1.2	30.0	11	1.7	30	0	0	10.0	71	51	- 23	44	4	2	0	0	3.7	SSW	15.6	SW	11	12	6	12	5.0	63
COLUMBUS	247	989.8	1019.7	25.6	9.4	17.6	-1.5	31.1	11	0.6	30	0	1	10.6	67	13	- 54	13	3	1	0	0	2.9	NE	17.0	N	12	14	9	7	4.5	72
COLUMBUS U	221			25.6	12.2	18.9	-1.0	30.6	19+	4.4	30	0	0			27	- 31	27	2	1	0	0										
DAYTON	304	986.7	1019.3	25.6	10.0	17.9	-1.4	30.6	19+	3.9	30	0	0	11.1	69	7	- 59	6	2	1	0	0	3.1	NNE	13.0	N	12	12	12	6	4.7	74
MANSFIELD	395			23.3	9.4	16.3	-1.1	29.4	19+	1.7	30	0	0			19	- 57	15	4	2	0	0						12	9	9	4.7	
SANDUSKY U	185			22.2	12.2	17.3	-1.8	31.1	19+	5.0	30	0	0			23	- 47	17	5	1	0	0	3.1		9.4	SW	27	12	12	6	4.6	68
TOLEDO	206	994.4	1019.7	24.4	8.9	16.5	-0.9	31.7	19	1.7	30	0	0	10.0	70	15	- 39	8	5	1	0	0	3.2	NNE	9.8	SW	27+	9	12	9	5.5	62
YOUNGSTOWN	359	977.2	1020.1	22.2	7.8	14.8	-2.4	28.3	19	1.7	24+	0	0	8.3	68	24	- 50	15	5	1	0	0	3.7	NNE	9.4*	NNW	11	10	11	9	5.0	
OKLAHOMA																																
OKLAHOMA CITY	390	973.4	1016.3	30.0	17.8	23.9	1.0	36.7	11	7.2	30	11	0	16.7	68	49	- 28	11	9	6	0	0	4.4	SE	15.6	N	28+	9	11	10	5.5	70
TULSA	206	992.5	1017.1	30.6	18.3	24.4	0.9	36.1	2	7.2	30	12	0	16.7	67	51	- 51	24	5	5	0	0	4.4	SSE	13.0	NW	28	11	8	11	5.1	66
OREGON																																
ASTORIA	2	1013.8	1014.6	21.7	11.1	16.2	1.8	28.9	3	6.7	18+	0	0	13.3	84	56	- 24	18	9	5	0	0	3.0	SSE	9.8*	NNW	22	10	8	12	5.9	
BURNS U	1265	873.8		26.1	7.8	17.1	2.2	33.3	5+	2.8	24+	5	0			30	18	20	4	1	0	0						11	11	8	4.7	
EUGENE	110	1001.0		26.7	11.1	18.9	2.5	35.6	8	7.2	18	5	0			56	23	43	7	1	0	0	2.4		13.0*	SW	9	14	7	9	4.8	
MEACHAM	1234			23.3	10.6	16.7	3.6	31.7	28	2.8	17	0	0			54	17	23	10	0	0	0						12	9	9	4.6	
MEDFORD	396	966.8	1013.8	31.7	11.7	21.7	3.6	40.0	26	7.2	26+	12	0	10.0	55	7	- 9	5	3	1	0	0	2.1	WNW	10.7*	SSE	9	16	9	5	3.8	
PENDLETON	452	960.9	1014.1	27.2	12.2	19.8	1.9	36.1	9	5.6	17	5	0	7.8	50	18	2	8	6	0	0	0	3.6	SE	13.4*	SSW	9	17	8	5	3.5	
PORTLAND	6	1008.3	1014.0	25.0	12.2	18.4	1.6	31.7	9+	6.7	24	0	0	13.3	77	19	- 22	9	5	2	0	0	2.6	NW	27.3	S	9	13	6	11	4.8	60
PORTLAND U	9			25.6	14.4	19.9	1.9	32.8	9+	11.1	24+	3	0			28	- 16	12	4		0	0										
ROSEBURG	154	995.5		27.8	11.1	19.5	2.4	37.2	8	6.7	30	7	0			36	11	29	6	1	0	0	1.9	N#	10.7	S	22	10	12	8	5.0	65
SALEM	59	1007.2	1014.6	26.1	11.1	18.7	1.8	35.6	8	7.2	24	4	0	13.3	76	36	1	20	8	3	0	0	2.5	N	9.4*	S	13+	15	5	10	4.4	
SEXTON SUMMIT R	1169	884.1		22.8	11.1	16.9	1.8	30.6	26+	4.4	17+	0	0			14	- 18	8	6	1	0	0	4.2	NNW				14	9	7	3.9	
PACIFIC AREA																																
CANTON ISLAND	3	1009.1	1009.5	31.7	26.1	28.8	0.2	32.8	29+	22.8	16	15	0	23.3	75	93	62	36	11	0	0	0	4.3	E	9.8*	NE	30+	10	11	9	5.5	
ENIWETOK	5	1008.9		31.7	25.6	28.8	0.3	32.8	22+	23.3	12+	15	0			186	27	38	24	3	0	0	4.1									
TAGUAC GUAM R	110															342	3	65	28	13	0	0	2.2	E#	10.3	E	28					55
JOHNSTON	2	1012.0	1012.7	28.3	26.1	27.2	-0.3	29.4	10+	24.4	27+	0	0	23.3	79	53	- 7	14	18	0	0	0	6.1	E	12.5	E	20+	4	20	6	5.3	81
KOROR R	29	1006.9	1009.6	30.6	25.0	27.7	0.5	31.7	29+	22.2	30+	0	0	25.0	86	356	- 8	115	15	9	0	0	3.2	SW	13.0	NW	30	0	0	30	9.9	55
KWAJALEIN	2	1009.7														142	-116	32	19	1	0	0	3.6		13.4	NE	10+	6	11	13	6.4	
PONAPE R	37	1005.0	1009.4	31.1	22.8	26.8	0.4	32.8	25	21.7	17	6	0	23.9	88	333	- 68	49	22	0	0	0	1.2	SE	8.5	E	23	1	7	22	8.7	60
TRUK MOEN ISLAND	2	1008.7	1008.8	30.6	23.9	27.1	0.2	32.2	6	22.2	16+	1	0	24.4	85	429	109	119	24	2	0	0	2.7	W	13.9	SW	29	0	5	25	8.8	48
WAKE	3	1011.6	1011.8	31.1	25.6	28.2	0.2	31.7	30+	23.3	14	0	0	24.4	78	53	- 80	22	11	1	0	0	4.8	ENE	11.6*	E	6	8	14	8	5.7	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PACIFIC AREA																																
YAP R	16	1007.5	1008.4	30.6	24.4	27.4	-0.1	32.8	17	22.8	24	2	0	25.0	88	260	- 96	65	21	5	0	0	2.7	SW	8.9	SW	9	0	0	30	10.0	66
PENNSYLVANIA																																
ALLENTOWN	115	1005.6	1019.9	22.8	9.4	16.1	-2.1	29.4	12+	- 0.6	24	0	1	10.0	71	167	72	78	7	2	0	0	3.5	ENE	19.7*	SSE	12	13	4	13	5.4	
ERIE	223	993.4	1019.7	20.6	10.0	15.3	-2.1	28.3	11	3.9	24+	0	0	9.4	70	37	- 53	14	6	2	0	0	5.5	S	14.3*	WSW	27	14	5	11	5.0	
HARRISBURG	102	1006.0	1019.9	23.3	10.0	16.4	-2.7	31.7	12+	- 1.1	24	0	2	9.4	68	72	0	42	5	1	0	0	3.3	W	10.7	NW	22+	10	8	12	5.6	63
PHILADELPHIA	2	1014.8	1019.3	22.8	11.7	17.1	-2.2	30.0	12	1.7	25	0	0	11.1	70	164	76	81	8	2	0	0	4.0	WSW	11.2	N	13+	11	6	13	5.5	57
PITTSBURGH	347	989.0	1019.7	23.9	8.9	16.3	-1.6	30.0	12+	1.7	25+	0	0	8.3	62	36	- 29	18	4	3	0	0	3.1	N	10.7*	NW	3	8	11	11	5.7	71
PITTSBURGH U	228			24.4	11.7	17.9	-1.7	30.6	12+	3.9	24	0	0			16	- 52	9	4	0	0	0										71
READING U	81	1007.3		23.3	11.7	17.5	-2.2	30.6	12	2.2	24	0	0			139	54	59	7	2	0	0	3.8	NW	15.2	NW	3	12	7	11	5.3	63
SCRANTON	287	985.6	1019.8	21.7	9.4	15.6	-0.8	29.4	19+	- 0.6	24	0	1	10.0	72	43	- 33	26	6	1	0	0	3.1	ENE	10.7	NW	29	9	7	14	5.8	61
WILLIAMSPORT	161	1001.8	1020.4	22.8	8.3	15.4	-2.4	30.0	12	- 1.1	24	0	2	8.9	70	58	- 25	22	6	2	0	0	3.2	NNW	10.3*	W	12	7	11	12	6.1	
RHODE ISLAND																																
BLOCK ISLAND	34	1013.8		18.3	12.8	15.4	-2.4	22.8	10	6.7	24	0	0			41	- 40	18	8	0	0	0						6	8	16	6.5	
PROVIDENCE	17	1012.7	1018.7	20.6	10.0	15.3	-2.0	28.9	19	2.2	25+	0	0	10.0	74	104	15	37	8	1	0	0	5.1	NNE	12.5*	NNE	6	7	7	16	6.5	53
SOUTH CAROLINA																																
CHARLESTON	12	1014.9	1016.9	28.9	17.8	23.2	-1.0	35.0	4	12.2	24	4	0	18.3	77	70	- 78	23	8	3	0	0	3.8	NNE	17.4Y	S	29	7	9	14	6.3	58
CHARLESTON U	3			26.7	19.4	23.2	-1.9	32.8	4	13.3	24	1	0			91	- 69	42	10	0	0	0	4.9		15.2	NE	25					
COLUMBIA	66	1005.1	1017.8	28.9	16.1	22.4	-1.7	35.6	4	8.3	24	8	0	16.1	73	101	- 8	66	6	3	0	0	2.8	NE	9.4*	SSE	28	11	5	14	5.9	55
FLORENCE	45	1011.8	1017.5	27.8	15.6	21.7	-2.1	34.4	13+	8.3	24+	6	0	16.1	75	105	1	65	7	3	0	0	3.5	NE	10.3*	SSE	29	12	4	14	5.7	
GNVLE SPARTANBURG	292	981.4	1018.1	27.2	15.6	21.4	-1.5	32.2	12	7.2	24	1	0	15.0	72	119	20	99	5	1	0	0	3.1	NE	11.6	NE	25+	11	10	9	5.2	70
SOUTH DAKOTA																																
HURON	391	969.8	1016.6	26.1	11.7	18.8	1.9	33.3	11+	0.6	29	4	0	11.7	69	33	- 6	11	8	5	0	0	5.1	SSE	13.0	N	28	8	3	19	6.6	55
RAPID CITY	965	903.7	1016.4	26.7	11.7	19.2	2.7	35.6	7	2.2	29	5	0	9.4	61	31	7	14	9	6	0	0	4.6	NNW	15.2	N	28	10	10	10	5.4	67
SIOUX FALLS	433	966.1	1017.6	24.4	11.1	17.9	1.4	33.3	8	1.7	29	3	0	12.2	74	61	- 5	23	8	5	0	0	4.3	S	10.3*	N	28+	8	5	17	6.5	
TENNESSEE																																
BRISTOL	459	964.4	1018.4	27.2	13.3	20.2	-0.1	32.2	21	4.4	25	1	0	12.2	65	36	- 31	22	5	1	0	0	1.4	ENE	8.5*	N	5	12	10	8	5.0	
CHATTANOOGA	204	990.6	1018.0	28.9	15.6	22.3	-0.1	34.4	3	5.0	24	6	0	15.6	72	32	- 46	20	4	2	0	0	2.7	NNE	10.7	N	22	13	7	10	4.8	74
KNOXVILLE	290	983.4	1018.6	27.2	14.4	20.8	-1.6	31.7	21+	6.1	25	0	0	13.3	68	60	- 4	27	6	3	0	0	2.5	NE	11.2	NE	22	12	10	8	4.8	82
MEMPHIS	80	1002.9	1017.6	28.3	17.2	23.0	-0.6	34.4	3	8.3	30	5	0	17.2	73	52	- 19	44	4	3	0	0	2.8	E	13.0	N	3	12	4	14	5.2	73
MEMPHIS U	83			28.3	18.9	23.4	-0.4	33.9	3	10.0	30	5	0			52	- 19	27	5		0	0										
NASHVILLE	176	998.0	1017.8	27.8	14.4	21.1	-1.6	32.8	11+	5.6	25	3	0	15.6	74	87	14	41	5	4	0	0	2.5	S	11.6	W	12	12	7	11	5.0	75
OAK RIDGE	276	986.0		27.2	14.4	20.8	-0.9	31.7	21	4.4	25	0	0			36	- 47	15	5	4	0	0	2.2		14.3Y		22	18	3	9	4.2	
TEXAS																																
ABILENE	536	955.0	1015.2	32.2	19.4	26.0	1.6	37.8	7+	7.2	30	15	0	16.1	59	17	- 36	15	4	4	0	0	2.9	SE	13.4	SE	7	12	9	9	4.8	72
AMARILLO	1099	891.7	1015.4	29.4	15.6	22.4	1.1	33.9	9+	4.4	29	7	0	12.8	61	11	- 37	3	6	3	0	0	5.7	SSW	16.5	SE	9	11	12	7	4.6	79
AUSTIN	182	993.2	1014.8	33.9	21.7	27.8	1.6	38.9	6+	14.4	30	18	0	17.8	60	38	- 49	24	8	3	0	0	3.3	NE	13.9	NW	12	14	9	7	4.6	71
BROWNSVILLE	5	1010.8	1013.3	32.8	23.3	28.0	0.7	35.6	18+	18.9	30+	18	0	22.2	74	109	- 17	40	10	2	0	0	4.3	ESE	11.6	NE	25+	8	17	5	5.3	56
CORPUS CHRISTI	13	1013.1	1014.3	32.8	22.8	27.7	0.6	36.1	9+	13.9	30	22	0	20.6	69	23	- 88	11	6	3	0	0	4.2	SE	17.9	NE	9	7	15	8	5.6	65
DALLAS	147	997.3	1015.6	32.2	20.6	26.6	1.1	39.4	7+	8.3	30	15	0	17.2	60	24	- 48	19	3	5	0	0	4.3	ESE	17.9	W	7	15	6	9	4.4	71
DEL RIO	313			34.4	21.1	27.8		39.4	8	12.8	30	22	0			49		23	7	2	0	0	3.8					11	14	5	4.6	
EL PASO	1194	887.6	1013.0	31.1	18.3	24.6	0.7	34.4	9	11.7	30+	9	0	11.7	49	16	- 13	16	2	6	0	0	2.5	ESE	17.9	SE	5+	18	9	3	3.1	86
FORT WORTH	166	995.1	1015.7	32.2	20.0	26.2	0.4	38.9	7+	9.4	30	15	0	17.2	62	43	- 21	33	4	4	0	0	3.7	E	22.8*	NE	7	15	5	10	4.6	
GALVESTON U	2			29.4	23.9	26.7	-0.1	32.2	8+	18.9	30+	4	0			236	107	68	9	0	0	0	4.6		22.4	NE	17					72
GALVESTON	2	1013.7	1014.6	29.4	23.9	26.6	-0.2	33.3	5+	18.9	30	7	0	21.1	72	210	63	87	9	11	0	0	4.3	SE								
HOUSTON U	12			31.7	22.8	27.2	0.7	36.7	7	14.4	30	17	0			160	63	59	8		0	0										
HOUSTON	15	1011.5	1014.2	32.2	21.7	26.9	0.4	36.7	7	12.8	30	17	0	20.6	73	49	- 59	12	8	7	0	0	4.1	ENE	13.9*	N	17	9	15	6	5.0	73
LAREDO	152	998.5	1013.7	35.6	22.8	29.0	0.8	40.0	9	14.4	30	27	0	18.3	59	40	- 33	22	3	3	0	0	3.9	ESE	11.2*	ENE	20	14	11	5	4.5	
LUBBOCK	988	905.5	1015.9	30.0	15.6	22.7	0.8	35.6	8	3.3	30	7	0	14.4	65	20	- 40	14	4	5	0	0	4.1	SE	11.6*	SSE	2	13	13	4	4.1	
MIDLAND	870	916.9	1014.1	31.1	17.8	24.6	0.4	36.1	8	7.2	30	12	0	13.3	54	10	- 36	3	6	6	0	0	3.7	SE	10.7*	NE	29	10	14	6	4.7	
PORT ARTHUR	5	1012.7	1014.2	31.7	21.7	26.7	1.3	37.2	7	14.4	30	15	0	21.1	77	461	337	335	10	10	0	0	3.4	ENE	18.8	SE	17	13	9	8	4.9	73
SAN ANGELO	580	948.4	1014.4	32.2	18.9	25.7	-0.1	38.3	7	7.2	30	17	0	15.0	57	27	- 40	12	4	4	0	0	2.3	SE	9.8*	N	29	12	11	7	5.0	
SAN ANTONIO	241	989.9	1014.5	33.3	21.1	27.3	1.4	37.8	7	13.9	30	18	0	17.8	61	28	- 60	15	7	4	0	0	3.6	N	15.2	N	12	13	10	7	4.6	75
VICTORIA	32	1009.6		32.8	21.7	27.4	1.2	36.7	9+	13.3	30	19	0			31	- 76	15	6	8	0	0	3.7		21.5Y		15	6	16	8	5.6	
WACO	152	994.8	1015.5	33.3	21.1	27.1	1.0	38.9	7+	11.1	30	18	0	17.2	60	21	- 49	15	7	6	0	0	4.8	NE	16.5*	NNW	29	16	6	8	4.4	
WICHITA FALLS	303	979.3	1015.6	32.8	18.9	25.8	0.9	40.6	11	8.3	30	17	0	16.7	62	59	-	18	7	4	0	0	3.7	ESE	11.2*	NNE	29	14	10	6	4.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

SEPTEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
UTAH																																
MILFORD	1533	846.4		28.9	8.9	18.9	1.6	34.4	12	4.4	25	8	0			31	21	17	5	5	0	0						19	4	7	3.4	
SALT LAKE CITY	1286	869.7	1016.0	28.3	11.7	19.9	1.6	35.0	12	6.7	24	5	0	8.9	56	27	14	18	6	5	0	0	4.3	SSE	16.1	S	5	14	10	6	4.1	78
WENDOVER	1291	871.9		26.7	13.9	20.5	1.2	34.4	12	10.0	14	3	0			15	7	9	6	6	0	0						18	5	7	3.6	
VERMONT																																
BURLINGTON	101	1004.7	1019.4	19.4	4.4	11.9	-3.6	26.7	3	- 3.9	24	0	5	6.7	70	36	- 48	13	7	1	0	0	3.7	N	17.0	NW	12	8	12	10	5.9	70
VIRGINIA																																
LYNCHBURG	289	994.0		25.6	12.8	19.3	-1.1	32.2	12+	4.4	25	2	0			97	12	47	8	0	0	0	2.8		8.9	NE	22	16	7	7	4.6	62
NORFOLK	8	1008.2	1018.8	23.3	15.0	19.3	-3.3	31.1	3	10.0	30+	0	0	15.0	77	174	67	132	13	0	0	0	4.8	NNE	15.6	NE	14	12	5	13	5.8	59
RICHMOND	49	1012.8	1019.0	25.0	12.2	18.6	-2.6	32.8	12	2.8	25+	2	0	13.9	78	81	- 11	30	10	0	0	0	3.5	NNE	10.7	S	29	15	5	10	5.0	58
ROANOKE	358	977.4	1019.5	25.6	12.2	18.9	-1.7	31.7	20	1.7	25	0	0	11.7	68	73	- 10	41	7	0	0	0	3.0	NE	8.0*	NNW	30+	13	11	6	4.7	
WASHINGTON																																
OLYMPIA	58	1007.0	1014.5	23.9	10.6	17.0	2.3	32.8	9	5.0	19	2	0	12.2	79	55	2	17	6	3	0	0	2.2	SSW	11.2*	W	16	9	7	14	6.0	
SEATTLE TACOMA	122	1000.8	1015.0	22.8	12.2	17.5	2.6	31.7	9	7.2	24	0	0	12.2	78	15	- 37	7	8	3	0	0	3.4	N	9.8*	SW	13	11	6	13	5.6	
SEATTLE U	4			22.2	13.9	18.1	1.8	31.1	9	10.0	24	0	0			18	- 24	5	8		0	0			15.6	SW	9					58
SPOKANE	718	945.9	1014.1	26.7	11.1	18.9	3.4	33.9	10+	5.0	19+	5	0	6.7	52	9	- 10	7	4	0	0	0	3.5	SW	15.6	SW	13	15	6	9	4.0	77
STAMPEDE PASS #	1206	880.4		18.3	8.9	13.6	2.6	27.8	9	2.8	17	0	0			42	- 70	19	10	1	0	0						14	3	13	5.1	
TATOOSH ISLAND	31	1011.7	1014.7	17.2	11.7	14.6	1.9	21.1	27+	10.0	19+	0	0	12.2	89	31	- 59	10	9	2	0	0	5.7	ENE	19.2	E	27	6	5	19	7.2	57
WALLA WALLA U	289			27.8	14.4	21.0	2.1	35.6	9	7.2	17	6	0			23	4		6	2	0	0										
YAKIMA	323	974.8	1013.4	28.3	8.9	18.6	2.3	33.9	9	3.3	18+	6	0	8.3	58	2	- 7	1	4	3	0	0	3.1	W	10.7*	WSW	13	18	4	8	3.7	
WEST INDIES																																
SAN JUAN P.R.	2	1011.3	1014.1	31.1	23.9	27.4	0.4	32.8	13	22.2	5	6	0	23.3	82	276	104	78	21	14	0	0	3.3	ENE	11.2	SE	26	0	16	14	6.9	56
SWAN ISLAND	9	1007.9		31.1	25.6	28.4	0.1	32.2	26+	23.3	17+	2	0			87	- 45	21	14	11	0	0						1	6	23	8.3	
WEST VIRGINIA																																
BECKLEY	763	932.2	1020.0	22.2	8.9	15.6		26.7	3	0.0	23	0	1	11.1	77	68		26	9	4	0	0	3.2	SSE	13.4*	W	3	9	9	12	5.9	
CHARLESTON	286	983.8	1019.3	25.0	11.1	18.1	-1.8	32.2	11	1.1	24	1	0	12.2	77	34	- 40	18	4	2	0	0	1.9	NE	13.0*	WNW	12	8	14	8	5.6	
ELKINS	600	951.0	1020.4	22.2	7.2	14.9		28.3	3	- 2.8	25+	0	3	10.6	83	61		21	8	3	0	0	2.1	NW	10.3*	NNW	3	6	13	11	6.1	
HUNTINGTON	252	989.4	1019.5	25.6	11.7	18.5		32.2	12+	2.8	25+	2	0	13.3	77	46	- 28	30	5	2	0	0	1.8	NNE	12.5*	NNW	12	7	14	9	5.7	
PARKERSBURG U	187			25.6	11.1	18.3	-1.8	31.1	12+	3.3	25	0	0			25	- 44	19	4	2	0	0	2.4		12.1	W	3					66
WISCONSIN																																
GREEN BAY	208	996.8	1019.7	21.1	8.3	14.7	-0.6	28.3	18	1.1	14	0	0	10.6	79	76	2	28	8	1	0	0	3.2	SW	15.2	N	12	6	12	12	6.2	57
LA CROSSE	199	994.5	1019.2	22.8	11.7	17.2	0.4	29.4	18	2.8	13	0	0	12.8	80	100	11	36	8	4	0	0	3.6	S	15.6*	NE	11	7	11	12	6.5	
MADISON	262	984.2	1019.5	22.8	8.3	15.7	-0.4	30.0	18	0.0	14	0	1	11.1	79	58	- 26	20	5	6	0	0	3.2	S	17.9	NW	12	6	11	13	6.3	49
MILWAUKEE	205	994.7	1019.8	21.1	11.1	16.2	0.5	30.0	18	4.4	14	0	0	12.2	79	45	- 24	19	7	2	0	0	4.4	NNE	20.1	NE	28	9	10	11	5.6	55
WYOMING																																
CASPER	1621	840.4	1015.7	26.1	9.4	17.8	2.4	31.1	6	5.0	15	0	0	4.4	48	8	- 14	3	6	4	0	0	4.5	WSW	13.0*	WNW	16+	14	5	11	4.5	
CHEYENNE	1867	817.7	1016.9	25.0	10.0	17.3	2.8	30.0	5	5.0	25	0	0	7.2	59	83	55	45	7	6	0	0	5.0	WNW	16.1	NW	1	14	10	6	4.4	78
LANDER	1696	834.9	1015.9	25.6	9.4	17.5	2.5	31.1	5	5.0	24+	0	0	6.1	52	5	- 21	2	7	4	0	0	2.6	WSW	16.1	W	15	13	10	7	4.2	65
SHERIDAN	1202	886.1		26.7	10.6	18.5	3.6	34.4	7	5.0	25	5	0			34	4	19	5	3	0	0	2.9	NW	16.5	S	10	10	10	10	5.2	68

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.) SEPTEMBER 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	4	4	18
Huntsville	9	9	12
Mobile	0	0	0
Montgomery	0	0	0
ALASKA			
Anchorage	383	817	1052
Annette	235	517	822
Barrow	1055	2796	2678
Barter Island	995	2531	2497
Bethel	492	1294	1325
Cold Bay	488	1363	1424
Cordova	417	1092	1279
Fairbanks	505	986	1145
Juneau	375	907	1122
King Salmon	410	1053	1148
Kotzebue	649	1624	1550
McGrath	560	1172	1179
Nome	626	1723	1670
St. Paul Is.	624	1797	1756
Shemya	514	1626	1553
Yakutat	383	1007	1159
ARIZONA			
Flagstaff	168	217	297
Phoenix (U)	0	0	
Phoenix	0	0	0
Prescott	3	3	27
Tucson	0	0	0
Winslow	0	0	0
Yuma	0	0	0
ARKANSAS			
Ft. Smith	10	10	12
Little Rock	4	4	9
Texarkana	2	2	0
CALIFORNIA			
Bakersfield	0	0	0
Bishop	21	22	48
Blue Canyon	113	254	173
Burbank	1	1	6
Eureka (U)	163	636	785
Fresno	2	2	0
Long Beach	0	0	9
Los Angeles (U)	0	0	6
Los Angeles	0	0	92
Mt. Shasta (R)	103	223	182
Oakland	12	123	148
Point Arguello (R)	91	443	550
Red Bluff	0	0	0
Sacramento (U)	0	0	0
Sacramento	0	0	0
Sandberg (R)	48	73	30
San Diego	0	0	30
San Francisco (U)	39	365	468
San Francisco	13	164	219
San Jose (U)	0	20	
Santa Catalina	8	24	
Santa Maria	34	239	288
Stockton	0	0	
COLORADO			
Alamosa	209	273	443
Colorado Springs	34	38	191
Denver	29	42	114
Grand Junction	4	6	30
Pueblo	5	5	54
CONNECTICUT			
Bridgeport	137	148	66
Hartford	179	201	129
Middletown	225	289	
New Haven	143	151	99
DELAWARE			
Wilmington	104	107	51
DIST. OF COLUMBIA			
Washington (U)	63	63	
Washington	70	70	33
FLORIDA			
Apalachicola (U)	0	0	0
Daytona Beach	0	0	0
Fort Myers	0	0	0
Jacksonville	0	0	0
Key West	0	0	0
Lakeland (U)	0	0	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	0	0	0
Pensacola (U)	0	0	0
Tallahassee	0	0	0
Tampa	0	0	0
West Palm Beach	0	0	0
GEORGIA			
Athens	22	22	12
Atlanta	19	19	18
Augusta	11	11	0
Columbus	3	3	0
Macon	5	5	0
Rome	18	18	24
Savannah	1	1	0
Thomasville (U)	2	2	0
IDAHO			
Boise	21	25	120
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	137	196	320
Idaho Falls 42NW(R)	140	186	338
Lewiston	45	48	123
Pocatello	53	61	180
ILLINOIS			
Cairo (U)	11	11	36
Chicago (Midway)	50	58	75
Chicago (O'Hare)	86	126	
Moline	83	99	108
Peoria	64	88	93
Rockford	95	114	129
Springfield	45	65	72
INDIANA			
Evansville	44	44	66
Ft. Wayne	72	94	114
Indianapolis	71	91	90
South Bend	79	126	117
IOWA			
Burlington	52	73	93
Des Moines	54	72	102
Dubuque	123	150	199
Sioux City	48	61	135
Waterloo	101	133	160
KANSAS			
Concordia	15	19	54
Dodge City	9	9	33
Goodland	45	45	87
Topeka	16	18	57
Wichita	9	9	33
KENTUCKY			
Lexington	55	56	54
Louisville	71	72	63
LOUISIANA			
Alexandria	3	3	
Baton Rouge	0	0	0
Lake Charles	0	0	0
New Orleans (Audubon Park)	0	0	
New Orleans	0	0	0
Shreveport	0	0	0
MAINE			
Caribou	417	648	529
Greenville (U)	442	688	
Portland	299	424	260
MARYLAND			
Baltimore (U)	68	68	27
Baltimore	95	97	48
Frederick	123	133	66
MASSACHUSETTS			
Blue Hill Obs. (R)	223	253	130
Boston	160	164	69
Nantucket	168	184	149
Pittsfield	321	474	303
Worcester	256	330	187
MICHIGAN			
Alpena	322	525	377
Detroit (City AP)	100	111	93
Detroit (M. Wayne Co.)	158	203	117
Detroit(Willow Run)	141	174	90
Escanaba (U)	266	402	389
Flint	190	272	172
Grand Rapids	135	179	172
Lansing	166	235	166
Marquette (U)	242	405	380
Muskegon	151	209	212
S. Ste. Marie	326	537	521
MINNESOTA			
Duluth	216	373	479
Internat. Falls	236	364	546
Minneapolis	129	162	233
Rochester	148	208	245
St. Cloud	141	177	300
MISSISSIPPI			
Jackson	3	3	0
Meridian	5	5	0
Vicksburg (U)	5	5	0
MISSOURI			
Columbia	30	37	54
Kansas City	10	11	39
St. Joseph	20	25	66
St. Louis (RFC)	13	24	36
St. Louis	33	42	51
Springfield	26	26	45
MONTANA			
Billings	61	80	223
Butte	210	422	
Glasgow	72	89	348
Great Falls	103	149	318
Havre	110	145	372
Helena	131	195	384
Kalispell	186	365	485
Miles City	34	39	186
Missoula	183	310	411
NEBRASKA			
Grand Island	77	89	87
Lincoln (U)	35	41	81
Norfolk	53	63	120
North Platte	65	66	129
Omaha	35	40	96
Omaha N. Omaha AP	54	65	139
Scottsbluff	46	46	138
Valentine	70	72	186
NEVADA			
Elko	113	196	268
Ely	152	207	305
Las Vegas	0	0	0
Reno	82	182	285
Tonopah	58	74	
Winnemucca	93	122	244
NEW HAMPSHIRE			
Concord	267	344	260
Mt. Washington Obs. (R)	779	1916	
NEW JERSEY			
Atlantic City	102	103	39
Atlantic City (U)	112	120	
Newark	108	108	39
Trenton (U)	134	135	57
NEW MEXICO			
Albuquerque	0	0	12
Clayton	15	16	72
Raton	51	61	163
Roswell	4	4	21
Silver City	0	0	
NEW YORK			
Albany	251	298	157
Binghamton	306	453	257
Buffalo	240	332	197
New York (U)	125	125	30
New York (LaGuardia)	83	83	27
Rochester	253	329	166
Schenectady	236	274	
Syracuse	240	297	166
NORTH CAROLINA			
Asheville (U)	51	55	48
Cape Hatteras (R)	8	8	0
Charlotte	24	24	12
Greensboro	64	66	33
Raleigh	57	57	21
Wilmington	17	17	0
Winston-Salem	58	60	21
NORTH DAKOTA			
Bismarck	139	168	272
Devils Lake (U)	164	206	366
Fargo	127	146	284
Grand Forks FAA	152	189	
Pembina	167	206	
Williston	93	117	
OHIO			
Akron	134	186	124
Cincinnati (U)	28	28	
Cincinnati	75	82	66
Cincinnati Obs.	43	44	54
Cleveland	152	214	157
Columbus	93	113	78
Columbus (U)	58	64	
Dayton	79	103	84
Mansfield	131	187	145
Sandusky (U)	89	100	72
Toledo	120	162	133
Youngstown	197	281	133
OKLAHOMA			
Oklahoma City	7	7	15
Tulsa	5	5	9
OREGON			
Astoria	121	377	514
Burns (U)	109	224	259
Eugene	44	140	197
Meacham	158	478	496
Medford	6	33	72
Pendleton	57	74	111
Portland (U)	19	60	103
Portland	41	137	167
Roseburg	29	94	143
Salem	43	180	167
Sexton Summit (R)	144	510	351
PENNSYLVANIA			
Allentown	157	169	90
Erie	173	221	127
Harrisburg	149	157	63
Philadelphia (U)	88	88	
Philadelphia	118	125	60
Pittsburgh (U)	86	97	60
Pittsburgh	139	182	114
Reading (U)	116	117	54
Scranton	175	206	181
Williamsport	179	206	120
RHODE ISLAND			
Block Island	162	178	94
Providence	173	187	112
SOUTH CAROLINA			
Charleston (U)	5	5	0
Charleston	2	2	0
Columbia	14	14	0
Florence	23	23	0
Greenville-Spartanburg	20	20	
SOUTH DAKOTA			
Huron	57	74	177
Pierre	63	67	
Rapid City	59	67	199
Sioux Falls	92	116	212
TENNESSEE			
Bristol	28	33	60
Chattanooga	10	10	24
Knoxville	18	18	30
Memphis (U)	8	8	12
Memphis	10	10	15
Nashville	28	28	30
Oak Ridge	24	25	39
TEXAS			
Abilene	2	2	0
Amarillo	11	11	30
Austin	0	0	0
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	2	2	0
Del Rio (U)	0	0	
El Paso	0	0	0
Fort Worth	0	0	0
Galveston (U)	0	0	0
Galveston	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	11	11	18
Midland	1	1	0
Port Arthur	0	0	0
San Angelo	3	3	0
San Antonio	0	0	0
Victoria	0	0	0
Waco	0	0	0
Wichita Falls	1	1	0
UTAH			
Milford	29	33	99
Salt Lake City	18	19	75
Wendover	21	21	48
VERMONT			
Burlington	343	491	230
VIRGINIA			
Lynchburg	58	60	51
Norfolk	44	44	0
Richmond	71	71	36
Roanoke	64	65	51
WASHINGTON			
Olympia	87	234	337
Seattle (U)	49	117	226
Seattle	42	83	221
Seattle-Tacoma	71	186	341
Spokane	77	140	242
Stampede Pass (R)	262	957	957
Tatoosh Island (R)	195	693	880
Walla Walla	35	37	
Walla Walla (U)	36	36	87
Yakima	63	124	156
WEST VIRGINIA			
Beckley	161	235	
Charleston	81	97	66
Elkins	192	281	
Huntington	69	87	42
Parkersburg (U)	72	83	60
WISCONSIN			
Green Bay	203	275	273
La Crosse	114	144	183
Madison	174	223	194
Milwaukee	135	193	186
WYOMING			
Casper	56	67	268
Cheyenne	76	89	313
Lander	76	90	274
Sheridan	52	67	307

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

HURRICANE CINDY

September 16-20, 1963

Compiled by George W. Cry
Marine Area Section, Climatology

Hurricane Cindy, the first in the Gulf of Mexico in 2 years, formed in a trough of low pressure located about 200 miles east-northeast of Brownsville, Tex., on the morning of September 16. Ship reports received around noon c.s.t., indicated that the circulation was of tropical storm strength and was intensifying rapidly. By 2:00 p.m. the central eye was developed sufficiently to be located about 200 miles east of Corpus Christi by the WSR-57 radar at Galveston. At the same hour, a report from the SS SABINE near the storm center indicated hurricane force winds. Cindy moved northward at an average speed of 8 m.p.h during the afternoon and night of the 16th, remaining relatively small in area and with no further increase in intensity, although most of the circulation was still over the warm Gulf waters.

Winds and tides along the coast from the Galveston area eastward increased during the evening, with winds reaching maximum values during the early morning hours of the 17th. Over the Gulf, highest sustained winds were estimated at 80 m.p.h., but the storm weakened to less than hurricane force over land. Highest gusts on the coast were 80 m.p.h., measured at the Bureau of Commercial Fisheries installation near the eastern tip of Galveston Island, and estimated at Gilchrist. The Weather Bureau Office at Galveston recorded a fastest mile of 50 m.p.h., at 2:15 a.m., and a peak gust of 74 m.p.h., at 2:16 a.m. on the 17th. In the Port Arthur area the highest gusts were from 40 to 50 m.p.h., while in Louisiana gusts were estimated as high as 60 m.p.h., at Grand Chenier and 45 m.p.h. at Cameron, but were generally in the 25 to 35 m.p.h. range.

The central eye of Cindy, some 20 miles in diameter, moved on shore around High Island, about midway between Galveston and Port Arthur. The Corps of Engineers there reported "light winds and near calm" between 7:30 and 11:00 a.m., c.s.t., on the 17th, and a low barometer reading of 29.44 inches (997 mb.) at 10:00 a.m. A slightly lower pressure, 29.41 inches (996 mb.), was recorded inland at Anahuac between 2:27 and 2:45 p.m.

The storm center became almost stationary for about 18 hours shortly after moving inland, then drifted very slowly westward and southwestward with slowly decreasing intensity through the Texas Coastal Plain on September 18 and 19. This unusual slow movement during the decay of the storm resulted in an extended period of heavy rainfall in the northeastern sector over extreme southeastern Texas and southwestern Louisiana. Storm rainfall totals were 15 to 20 inches in portions of Jefferson, Newton, and Orange Counties, Tex., and Calcasieu and Vermilion Parishes, La. The heaviest rain occurred at Deweyville, in southern Newton County: a 3 day total 23.50 inches, including 20.60 inches in 24 hours between the 7 a.m., c.s.t., observations on September 17 and 18.

Rainfall to the west and south of the almost stationary storm center during this period was relatively light. Galveston recorded only 3.64 inches on the 16th and 17th; Anahuac 2.63 inches for the same period; amounts were well under 2 inches in the Houston area.

Storm totals were generally 4 to 8 inches in Louisiana as far east as Terrebonne Parish where Houma received 7.90 inches during the 15th-17th. Moist air pushed northward by Cindy's circulation brought significant rainfall, ranging up to 5 inches or more locally, to much of southwest and central Oklahoma on September 16.

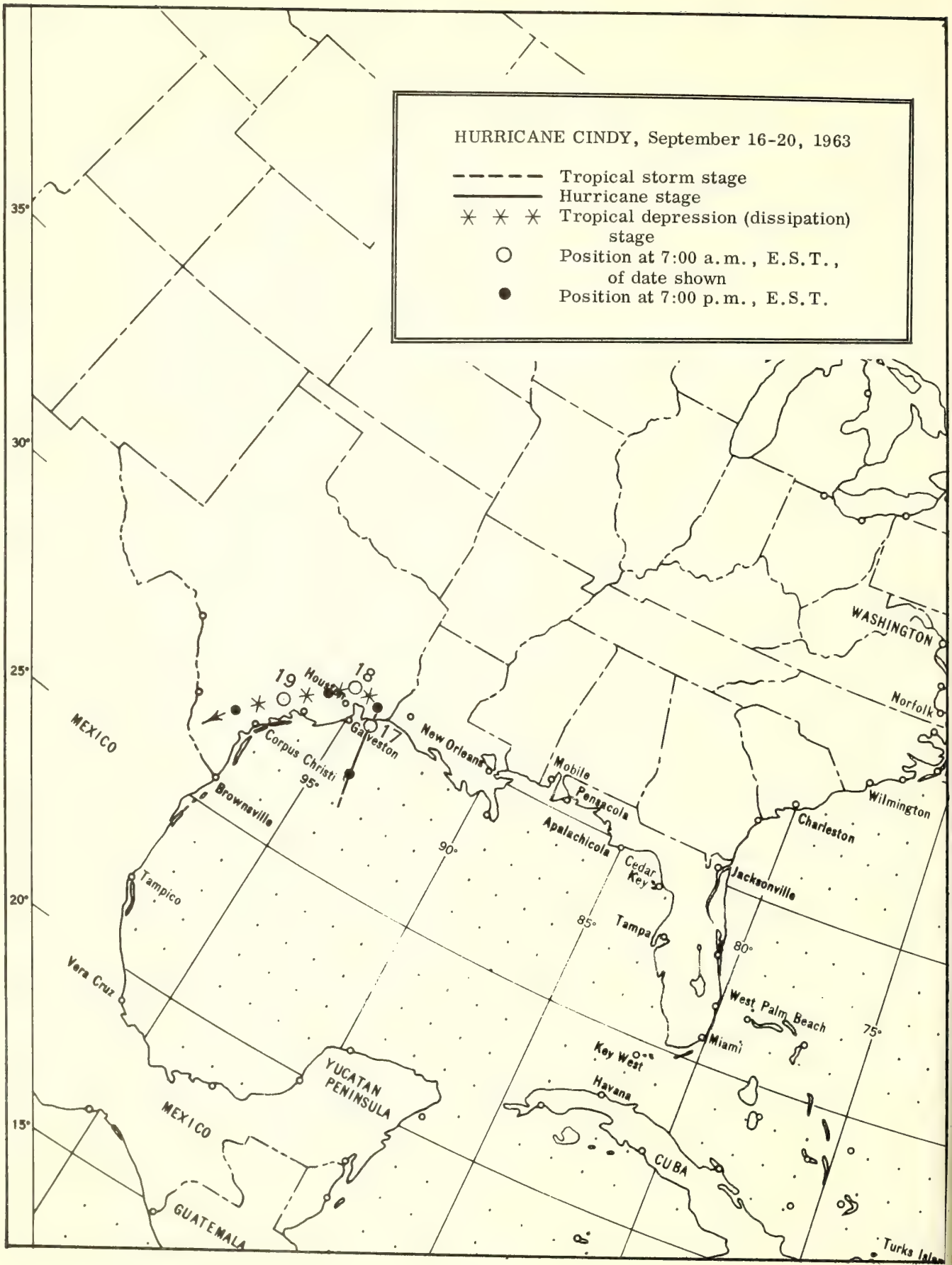
Since Cindy was a relatively small storm, barely of hurricane intensity, and developed near the coast, extremely high tides were not produced. Tides ranged generally from 3 to 5 feet (mean sea level) along the upper Texas and western Louisiana coasts. Except in Galveston Channel, no levels greater than 4 feet m.s.l., were recorded in Galveston Bay. Indeed during the afternoon and evening of the 17th tides were as much as 2 to 3 feet below normal in the upper reaches of the Bay and in the Houston Ship Channel due to the persistent strong northerly winds on the west side of the nearly stationary storm.

The highest reliable recorded tide in the Galveston area was 4.6 feet m.s.l. at Pier 21 in Galveston Channel. Along the Gulf side of the island tides averaged near 4.0 feet. Farther east, tides reached 3.8 feet m.s.l. at Sabine, Tex. In Louisiana reports were generally 3.5 to 4 feet, with highest values -- 5.5 to 6.0 feet -- south of Lake Charles at the mouth of the Calcasieu River.

Property damage from wind was minor, consisting of roof damage to beach homes. Only minor flooding and some slight damage occurred from tides, but several roads were impassable for short periods, and waves destroyed several piers and caused some damage to boats.

Considerable damage was produced by the flooding of streams and drainage canals and ponding of water in the areas of extremely heavy rainfall over the lower Sabine Basin in both Texas and Louisiana. The flood waters were most severe in the Port Arthur - Port Acres area of Jefferson County, Tex. Water entered about 4,000 homes in Jefferson, Orange, and Newton Counties, Tex., remaining in some areas for extended periods. Overall property damage -- mainly from the flooding -- was estimated at $11.7 million. Principal crop damage, estimated near $500,000 in Texas and $360,000 in Louisiana, was to unharvested rice. Fortunately most of the crop had already been combined, and rainfall in most areas was considered more beneficial than damaging to crops and ranges.

One man was drowned when he fell from a crew boat evacuating personnel from the offshore oil rigs south of Cameron, La., and two small twin sisters drowned at Port Acres on September 22 in the persistent flood waters still covering that section.


HURRICANE CINDY, September 16-20, 1963
Tropical storm stage
Hurricane stage
Tropical depression (dissipation) stage
Position at 7:00 a.m., E.S.T., of date shown
Position at 7:00 p.m., E.S.T.
35°
30°
25°
20°
15°
95°
90°
85°
80°
75°
19
18
17
Houston
Galveston
Corpus Christi
Brownsville
Tampico
Vera Cruz
MEXICO
YUCATAN PENINSULA
MEXICO
GUATEMALA
New Orleans
Mobile
Pensacola
Apalachicola
Cedar Key
Tampa
Key West
Havana
CUBA
Miami
West Palm Beach
Jacksonville
Charleston
Wilmington
Norfolk
WASHINGTON
Turks Island

TROPICAL CYCLONE DATA

HURRICANE CINDY
September 16-20, 1963

Station	Date Sept.	Pressure (inches)		Wind (miles per hour)				Highest Tide (feet)		Storm Rainfall (inches)	Remarks
		Low	Time+	Fastest Mile	Time+	Gusts	Time+	#	Time+		
TEXAS											
Anahuac	17	29.41	1427-1445			ENE 76	0820				
Galveston WBO	17	29.54	0529	NE 50	0215	NE 74	0216			3.64	
Galveston BCF	17	29.59	0545			NNE 80	0300				
Galveston	17							4.6	0310		Pier 21 - North side of Island.
Galveston	17							4.0	0300		17th St. Pier - Gulf side of Island.
High Island	17	29.44	1000	E 60-65	0700	E 69	0700	3.6	1600-1630	2.75	
Houston WBAS	17	29.73	1510	N 31	0530	NNW 46	0917			1.00	
Port Arthur WBAS	17	29.69	1700-1800			NE 42	0500			15.17	
Port Arthur Ship Ch.	17							3.3	1600		
Sabine	17					SE 75*		3.8	0345-0525		
San Leon	17	29.69	0600			N 65*	0500-0600	2.6	0500		
Texas City	17	29.59	0215			NW 60	0250	4.0	0415		
Total Storm Rainfalls											
Beaumont										15.62	
Beaumont 9W										18.71	
Deweyville										23.50	
Evadale										14.64	
Fannett 1S										20.15	
Kirbyville										11.85	
Kountze										14.00	
Orange										22.80	
Port Arthur-Lewis Dr.										17.42	
Vidor										17.00*	
Winnie 12SE										20.75	
LOUISIANA											
Cameron	17					45*		4.5	0900		Tide above normal.
Grand Chenier	17			ENE 60*	0130					5.50	
Jennings	17	29.80	0600	NE 35*	0830					5.62	
Lafayette FAA AP	17	29.91	1800	ENE 28	0900-1000					7.08	
Lake Charles WBAS	17	29.85	1800	ESE 23	1520	E 35	0730			4.67	Tide 5.5 to 6.0 feet above normal at mouth of Calcasieu River.
Total Storm Rainfalls											
Gueydan										7.79	
Hackberry										7.56	
Houma										7.90	
Pecan Island										20.25	
Sulphur Mines										9.77	
Vinton										18.30	

\+ All times are Central Standard
\# Above mean sea level
* Estimated

STORM SUMMARY

September 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								† DAMAGE				† DAMAGE				† DAMAGE			† DAMAGE			† DAMAGE			† DAMAGE			† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama *																													
Alaska N																													
Arizona						0	0	0	5	0	0	0	3	0	1	0	0									0	0	5	6
Arkansas										0	0	4	4	1	2	3	0												
California										0	0	3	0	0	0	3	3									0	0	4	7
Colorado						0	0	0	3																	0	0	5	3
Connecticut N																													
Delaware *																													
Florida	1	1	0	0	3					0	0	5	0	1	1	0	0												
Georgia	1	1	0	5	5					0	0	4	0																
Hawaii *																													
Idaho									4			4			2	5													
Illinois	1	1	0	0	4																								
Indiana						0	0	°5	C	0	0	4	0	1	0	0	0												
Iowa										0	0	4	0																
Kansas	5	5			4									1															
Kentucky									4			3		1		5													
Louisiana										1	0	4	5																
Maine										0	0	4	0																
Maryland														0	0	4	0												
Massachusetts	1	1	0	0	3					0	0	4	0	0	1	4	0												
Michigan *																													
Minnesota *																													
Mississippi																										0	0	0	?
Missouri														0	0	4	0												
Montana										0	2	0	0																
Nebraska														1	0	0	0												
Nevada *																													
New Hampshire										0	0	4	0																
New Jersey										1	0	0	0																
New Mexico *																													
New York	1	1	0	0	3					1	1	°5	C																
North Carolina	3	1	0	0	5																								
North Dakota *																													
Ohio	3	1	0	9	5	0	0	°2	C																				
Oklahoma	2	1	0	0	3	0	0	2	5	0	0	4	4	2	2	4	4												
Oregon						0	0	2	3	0	0	4	3	0	1	3	1									0	0	R 3	R 2
Pacific Area *																													
Pennsylvania	1	1	0	10	6					0	0	4	0	1	0	4	0												
Puerto Rico																										0	0	5	6
Rhode Island N																													
South Carolina	5	2	3	13	6									0	7	3	0												
South Dakota						0	0	0	5					0	0	4	0												
Tennessee						0	0	0	5	0	0	0	2	0	0	4	0												
Texas	6	4	0	0	4	0	0	?	?	0	4	?	?	0	1	4	0									0	0	H 7	H 6
Utah														1	1	4	0												
Vermont										0	0	4	0																
U.S. Virgin Is. *																													
Virginia *																													
Washington N																													
West Virginia *																													
Wisconsin	4	2	0	0	5																								
Wyoming																										0	0	°4	C

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
R Heavy rain.
H Includes Hurricane Cindy.
N No report received by printing deadline.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

SEPTEMBER 1963

Flooding during September in Continental United States was mostly minor. The third hurricane of the season, which moved inland west of Beaumont, Texas, produced only light flooding along the coastal areas of Texas and Louisiana.

MISSISSIPPI SYSTEM

Missouri Basin. --Flooding during September was light to moderate and localized on the upper Solomon River Basin from the lower portion of the North Fork near Downs, Kans., downstream on the main channel to Glasco, Kans. Stages on the lower Solomon rose to about three-fourths bankfull. Substantial within banks rises were widespread in the Republican River Basin, the lower portion on the South Fork of the Solomon River, and the upper Little Blue River which rose slightly above flood stage at Fairbury, Nebr. Rises approaching bankfull occurred on the main stem of the Republican River in Nebraska and Kansas. Sappa Creek rose to near flood stage at Oberlin, Kans., with a pronounced rise continuing downstream to the mouth. Runoff from 3- to 6-inch rainfall accumulations from the 21st to the 23d was retarded by comparatively dry topsoil. Rainfall duration permitted near maximum infiltration during most of the rain period. Losses were moderate on the upper Solomon River with negligible damages elsewhere.

Arkansas Basin.--Scattered thundershowers of varying intensities occurred throughout the Arkansas Basin for more than half the month. During this period, excessive precipitation occurred over a small area on the 1st, 4th, and 16th.

The heaviest center on the 1st was located in the upper Cimarron River Basin from Liberal, Kans., to Buffalo, Okla. The precipitation over the basin averaged 3.19 inches, with the heaviest official amount of 5.02 inches reported at Englewood, Kans. Unofficial amounts of up to 6.4 inches were measured. The precipitation fell in a short time on relatively dry soil and no flooding occurred. The crest downstream at Waynoka, Okla., was about 1 foot below flood stage.

Much of the rain in the west was reported on the mornings of the 2d and 3d and local lowland flooding occurred along the small streams in the Trousdale-Greensburg-Kingman, Kans., area. Kingman, on the Ninnescah, reported 4.05 inches on the morning of the 2d. Flooding was confined almost entirely to non-agricultural land and little loss resulted. Rattlesnake Creek (a tributary of the Arkansas) was reported to be higher than at any time since 1935 in the Trousdale area. These heavy rains over the headwaters of the Ninnescah resulted in bankfull or near bankfull downstream to near Peck.

The heaviest concentration on the 4th was along Eagle Chief Creek, Redrock Creek, and Salt Fork with an isolated unofficial report of 5 inches near Dover, Okla. The precipitation averaged 1.79 inches along Salt Fork with unofficial reports of 3 to 4 inches in the area and up to 7 inches near Carmen and Billings, Okla. County highways were temporarily closed in these areas. The Billings School was closed for the day due to flooding on Redrock Creek at road crossings. Minor flooding was reported on small streams.

A downpour occurred on the 16th near Kingfisher, Okla., causing rapid rises on Kingfisher and Uncle John Creeks, but crests were below flood stage. The precipitation averaged 1.64 inches. As this storm moved eastward, a heavy deluge occurred southwest of Guthrie, Okla., over Cottonwood Creek Basin, with an average of 3.72 inches. This storm produced 2 1/2 feet of flooding at Guthrie. Water seeped into many homes. Hundreds of persons left their homes. Approximately 50 city blocks from the southwest city limits to north Guthrie were flooded.

WEST GULF OF MEXICO DRAINAGE

Hurricane Cindy developed rapidly on the 16th and moved on shore just west of Beaumont, Tex., on the 17th. The hurricane halted briefly just north of Beaumont, and very heavy rainfall occurred in its northeast quadrant. Deweyville, Tex., on the Sabine River reported 23.50 inches of rainfall in 24 hours; Orange, Tex., 22.80 inches; Vinton, La., 11 miles northeast of Orange, 19.70 inches; Kirbyville, Tex., 11.85 inches; and Bon Wier, Tex., 5.64. Rainfall over the Calcasieu Basin in Louisiana ranged from near 10 inches in the western section of the lower portion to slightly over 1 inch over the extreme upper portion. Rainfall near the coast from east of the Calcasieu River eastward to Lafayette, La., averaged between 5 and 6 inches. Since the storm took a westward course instead of a northerly one, the heavy rains were confined to the areas near the coast.

Light flooding occurred on the Sabine River at Orange, Tex., on the 18th and at Deweyville, Tex., on the 19th and 20th. The river rose only 0.6 foot at Bon Wier, Tex., as the heavy rains did not extend very far above this point. Considerable flooding occurred over the lower Sabine Basin from the accumulation of water from the heavy rains. Homes, roads, and fields were flooded. Flooding from the river alone was not sufficient to cause any damages. The Calcasieu River reached bankfull at Lake Charles and near bankfull at Old Town Bay, La., on the 18th. It reached about half bankfull over the middle portion on the 19th and 20th and changed little in the upper portion.

The only flooding in the Neches River Basin occurred on the Pine Island Bayou at Voth, Tex., from the 18th to the 22d. Flooding was also reported from the Village Creek Basin. Local flooding occurred in western Port Arthur, especially the Port Acres section, which is only partially protected by levees. This area is drained by Taylor Bayou.

PACIFIC SLOPE DRAINAGE

Columbia Basin.--The weather was unusually warm over the entire Pacific Northwest. Several stations had record high temperatures for so late in the season, including Boise, Idaho, and Medford, Eugene, and Burns, Oreg. Most of the precipitation fell during one storm near the middle of the month. Slight rises were noted on the upper Columbia River above Grand Coulee and on the Snake River above Clarkston, Wash. By the end of the month most streams were back to near base flow.

FLOOD STAGE DATA

(All dates in September unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
MISSISSIPPI SYSTEM	*Ft.*			*Ft.*	
Missouri Basin					
Solomon: Downs, Kans.	18	22	23	21.7	22
Beloit, Kans.	20	24	25	21.9	24
Glasco, Kans.	22	25	25	22.25	25
Little Blue: Fairbury, Nebr.	10	23	23	10.4	23
Arkansas Basin					
Cottonwood Creek: Guthrie, Okla.	22	17	17	24.5	17
WEST GULF OF MEXICO DRAINAGE					
Sabine: Orange, Tex.	4	18	18	4.4	18
Deweyville, Tex.	14	19	20	14.3	19
Pine Island Bayou: Voth, Tex.	T 11	18	22	14.6	19

* Provisional
T Tentative

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1963

ALBANY, N. Y. 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	86	8.3	88	340	1.4
1000	30	168	10.0	82	358	3.1
950	30	598	10.0	68	340	6.2
900	30	1,045	8.7	64	320	6.0
850	30	1,517	7.6	59	308	8.2
800	30	2,016	6.0	52	305	9.5
750	30	2,538	3.7	47	302	11.5
700	30	3,101	1.3	43	295	14.4
650	30	3,687	- 1.7	42	292	16.5
600	30	4,328	- 5.2	43	287	18.8
550	30	5,001	- 9.1	38	285	22.7
500	30	5,738	-13.7		280	25.1
450	30	6,526	-18.9		279	28.0
400	30	7,399	-25.0		269	33.0
350	30	8,357	-31.8		273	35.0
300	30	9,429	-39.5		271	39.4
250	29	10,653	-47.9		271	42.9
200	29	12,098	-54.9		270	44.3
175	29	12,947	-56.9		272	40.6
150	29	13,920	-57.8		272	37.9
125	29	15,065	-59.0		274	31.5
100	29	16,463	-59.4		277	27.0
80	29	17,865	-57.7		276	18.3
70	29	18,716	-56.9		274	16.5
60	29	19,685	-56.2		276	13.2
50	29	20,848	-54.5		274	10.1
40	29	22,281	-52.6		272	10.3
30	29	24,151	-49.8		263	8.5
25	29	25,346	-48.4		263	10.1
20	27	26,813	-46.5		259	11.7
15	22	28,719	-44.4		269	11.3
10	5	31,426	-43.3			
7						
5						

ALBUQUERQUE, N. MEX. 842 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	16.9	64	62	1.2
1000	30	119				
950	30	568				
900	30	1,036				
850	30	1,535				
800	30	2,054	16.2	56	204	2.9
750	30	2,595	13.1	55	237	4.1
700	30	3,177	9.3	60	261	5.1
650	30	3,784	5.1	63	276	4.1
600	30	4,437	.1	63	270	2.1
550	30	5,123	- 4.0	49	268	1.6
500	30	5,876	- 8.4		247	2.9
450	30	6,681	-13.6		247	4.1
400	30	7,572	-20.0		247	4.5
350	30	8,549	-27.2		254	8.5
300	30	9,641	-35.4		263	10.9
250	30	10,886	-44.6		263	15.7
200	30	12,349	-53.8		268	23.3
175	30	13,197	-58.9		269	23.1
150	30	14,153	-64.0		270	19.0
125	30	15,257	-68.2		268	13.8
100	30	16,590	-69.5		278	6.2
80	30	17,931	-66.0		27	4.5
70	30	18,748	-63.4		63	6.0
60	30	19,698	-61.7		77	7.4
50	30	20,833	-59.3		82	8.2
40	29	22,240	-57.0		84	6.4
30	29	24,077	-53.3		84	6.4
25	28	25,254	-51.2		91	7.2
20	28	26,712	-49.1		82	7.8
15	25	28,613	-45.7		74	9.7
10	7	31,356	-43.0			
7						
5						

AMARILLO, TEXAS 895 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,095	16.4	82	199	7.0
1000	30	135				
950	30	579				
900	30	1,050				
850	30	1,537	18.3	63	208	14.2
800	30	2,054	15.6	60	221	12.2
750	30	2,595	12.3	56	249	6.6
700	30	3,175	8.5	56	323	3.9
650	30	3,779	4.7	52	13	1.9
600	30	4,432	.7	45	15	2.1
550	30	5,120	- 3.2	39	348	1.7
500	30	5,875	- 7.7		330	3.5
450	30	6,678	-13.1	33	311	3.7
400	30	7,575	-19.2		351	5.1
350	30	8,555	-26.1		327	7.6
300	30	9,651	-34.7		301	9.1
250	30	10,899	-44.1		289	12.0
200	30	12,364	-54.1		285	17.7
175	30	13,211	-59.0		290	19.4
150	30	14,167	-64.1		293	18.3
125	30	15,273	-67.8		295	16.5
100	30	16,609	-68.9		305	9.3
80	30	17,956	-65.5		337	2.1
70	30	18,778	-63.2		61	5.1
60	30	19,725	-61.2		68	7.2
50	30	20,863	-59.2		67	7.8
40	29	22,273	-55.9		77	6.0
30	28	24,120	-52.4		71	5.6
25	26	25,311	-50.4		81	6.8
20	24	26,778	-48.3		88	8.7
15	20	28,689	-44.6		69	13.4
10	8	31,437	-41.3			
7						
5						

ANCHORAGE, ALASKA 1000 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	29	9.2	87	149	1.0
1000	30	30			203	1.0
950	30	457	10.1	73	58	2.3
900	30	905	7.6	70	96	4.1
850	30	1,374	4.6	73	116	6.2
800	30	1,865	1.2	76	128	8.9
750	30	2,379	- 2.3	78	131	9.1
700	30	2,927	- 5.1	70	144	9.3
650	30	3,501	- 8.5	66	146	9.1
600	30	4,123	-12.3	63	143	9.1
550	30	4,776	-16.5	61	151	10.5
500	30	5,493	-21.4	55	159	9.9
450	30	6,252	-26.7	51	160	9.5
400	30	7,101	-33.0	53	168	8.4
350	30	8,027	-39.8		147	6.6
300	30	9,062	-47.7		163	6.4
250	30	10,245	-54.2		185	4.9
200	30	11,684	-50.7		227	10.1
175	30	12,555	-49.8		236	11.7
150	29	13,568	-49.9		239	14.0
125	29	14,759	-49.9		241	12.6
100	29	16,217	-50.0		244	13.6
80	29	17,675	-50.3		252	13.4
70	29	18,548	-50.8		254	12.2
60	29	19,549	-51.1		259	13.0
50	29	20,734	-51.6		263	12.4
40	29	22,181	-51.9		270	13.8
30	27	24,042	-51.9		279	14.0
25	26	25,223	-51.5		286	14.8
20	22	26,683	-50.8		287	14.0
15	19	28,566	-49.5		298	16.3
10	15	31,228	-47.5			
7						
5						

* ANNETTE, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	37	12.7	89	157	8.5
1000	29	93	12.5	87	159	8.5
950	29	522	10.7	85	163	16.7
900	29	973	8.2	83	172	19.6
850	29	1,444	5.5	82	181	19.0
800	29	1,939	2.7	80	188	19.2
750	29	2,458	- .1	68	195	20.0
700	29	3,009	- 3.2	57	201	20.2
650	29	3,590	- 6.1	51	207	21.6
600	29	4,216	- 9.8	45	208	23.9
550	29	4,870	-14.0	40	212	23.[illegible]
500	29	5,601	-18.9	42	213	24.1
450	29	6,371	-24.3	48	216	27.0
400	29	7,227	-30.4	47	223	29.5
350	29	8,164	-37.1	42	225	30.1
300	29	9,212	-44.7		230	35.0
250	29	10,412	-51.8		218	31.1
200	27	11,847	-53.5		234	29.1
175	26	12,702	-52.8		233	26.2
150	26	13,695	-53.1		240	25.6
125	23	14,869	-54.2		241	22.0
100	22	16,302	-54.3		243	15.7
80	22	17,733	-54.2		250	14.4
70	22	18,591	-54.5		263	17.2
60	22	19,575	-54.7		269	12.0
50	22	20,741	-55.0		265	9.3
40	22	22,164	-55.6		288	9.3
30	22	23,997	-55.3		302	9.1
25	21	25,159	-54.4		304	10.7
20	21	26,592	-53.3		306	9.7
15	20	28,452	-51.4		307	11.3
10	17	31,087	-48.7		310	12.4
7	16	33,460	-44.4		292	16.7
5	7	35,705	-41.2			

ATHENS, GA. 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	16.7	92	42	3.9
1000	30	155				
950	30	596	18.4	75	68	7.8
900	30	1,058	16.5	74	83	7.0
850	30	1,544	13.8	72	77	4.7
800	30	2,054	11.4	65	1	1.9
750	30	2,589	9.0	57	339	3.5
700	30	3,160	6.2	44	323	4.9
650	30	3,764	3.6		320	5.6
600	30	4,412	.4		314	7.0
550	29	5,100	- 3.3		303	9.1
500	29	5,855	- 8.2		302	10.1
450	29	6,659	-13.7		298	11.7
400	29	7,552	-19.6		288	15.0
350	29	8,530	-26.5		289	17.1
300	29	9,624	-35.0		285	19.6
250	29	10,870	-44.7		286	24.7
200	29	12,327	-55.3		285	26.2
175	29	13,169	-60.4		285	26.2
150	29	14,119	-64.2		293	23.9
125	29	15,227	-66.8		297	16.9
100	29	16,573	-66.8		309	12.0
80	29	17,932	-63.5		324	4.7
70	29	18,758	-61.9		359	3.7
60	29	19,713	-59.8		35	2.7
50	28	20,860	-56.9		65	4.9
40	28	22,281	-54.5		90	7.4
30	28	24,138	-51.1		86	11.1
25	27	25,329	-49.2		95	15.0
20	25	26,801	-46.9		91	14.6
15	24	28,717	-44.5		83	13.6
10	11	31,401	-39.6		72	13.0
7						
5						
4						

* BARROW, ALASKA 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	- 1.7	91	85	8.5
1000	30	113	- 2.5	93	93	11.8
950	30	524	- 2.1	71	100	14.0
900	30	951	- 1.9	57	109	11.8
850	30	1,404	- 3.2	53	114	8.9
800	30	1,883	- 4.7	46	138	5.6
750	30	2,390	- 7.2	45	172	2.9
700	30	2,924	-10.1	41	189	3.1
650	30	3,490	-13.2	39	211	3.7
600	30	4,098	-17.0	38	219	4.9
550	30	4,743	-21.3	38	234	6.6
500	30	5,443	-25.8	38	251	8.2
450	30	6,197	-31.1	38	254	11.5
400	30	7,025	-37.0	36	244	11.3
350	30	7,935	-43.7		247	12.4
300	30	8,955	-50.5		249	16.3
250	30	10,130	-55.1		263	18.1
200	29	11,564	-53.2		276	15.0
175	29	12,429	-51.5		266	15.2
150	29	13,431	-50.4		263	14.6
125	29	14,622	-50.1		257	15.0
100	29	16,080	-49.9		253	14.4
80	28	17,535	-50.3		258	14.8
70	28	18,409	-50.7		257	15.0
60	28	19,409	-51.1		256	15.2
50	28	20,593	-51.6		257	14.6
40	28	22,039	-51.9		265	15.5
30	28	23,902	-52.0		274	14.0
25	28	25,083	-51.9		278	15.2
20	27	26,535	-51.6		288	15.7
15	27	28,406	-50.7		296	15.2
10	24	31,077	-48.2		307	16.7
7	20	33,433	-46.0			
5	13	35,731	-43.2			
4	6	37,330	-40.9			

BARTER IS., ALASKA 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	15	- .7	85	82	7.6
1000	29	118	- 1.1	83	91	9.3
950	29	528	- .7	67	105	14.0
900	29	959	- .6	48	118	8.5
850	29	1,415	- 1.9	42	128	5.1
800	29	1,895	- 3.9	39	141	2.7
750	29	2,401	- 6.6	39	19	1.2
700	29	2,937	- 9.6	39	320	2.9
650	29	3,503	-12.7	36	300	3.9
600	29	4,112	-16.4		294	7.2
550	29	4,757	-20.5		294	9.5
500	29	5,460	-25.1		302	10.1
450	29	6,214	-30.5		305	11.3
400	29	7,045	-36.4		299	13.4
350	29	7,958	-42.6		295	17.7
300	29	8,983	-49.4		292	21.0
250	29	10,160	-55.1		293	21.8
200	29	11,589	-51.8		278	19.8
175	29	12,456	-50.7		276	18.8
150	29	13,462	-49.9		270	19.0
125	29	14,653	-49.6		271	17.3
100	29	16,113	-49.5		275	15.7
80	29	17,573	-49.8		273	16.1
70	28	18,453	-50.3		280	16.1
60	27	19,447	-50.7		279	14.0
50	27	20,633	-51.0		277	14.4
40	24	22,061	-51.5		279	16.5
30	21	23,917	-51.8		281	15.3
25	18	25,099	-51.6		287	15.7
20	18	26,546	-51.6		291	16.7
15	13	28,412	-50.9		296	16.1
10						
7						
5						
4						

BETHEL, ALASKA 998 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	39	7.1	94	350	2.7
1000	30	21			315	4.3
950	30	445	8.1	77	71	6.0
900	30	890	5.4	74	112	4.7
850	30	1,355	2.7	71	130	4.9
800	30	1,843	- .2	69	134	4.3
750	30	2,357	- 3.5	67	123	5.4
700	30	2,900	- 6.5	63	121	6.6
650	30	3,474	- 9.7	57	125	6.0
600	30	4,090	-13.2	51	141	7.0
550	30	4,745	-17.6	46	145	6.4
500	30	5,455	-22.2	47	149	7.4
450	30	6,214	-27.6	43	163	6.6
400	30	7,058	-33.9	40	175	6.9
350	30	7,981	-40.3		170	6.6
300	30	9,017	-46.8		192	4.7
250	30	10,210	-52.0		234	6.8
200	30	11,654	-50.5		242	12.2
175	30	12,528	-49.1		238	13.8
150	30	13,540	-48.7		237	14.0
125	30	14,738	-48.6		237	14.2
100	30	16,205	-48.8		243	14.2
80	29	17,668	-49.2		247	12.0
70	28	18,542	-49.4		244	12.8
60	26	19,550	-49.4		248	14.2
50	25	20,742	-49.6		255	13.2
40	24	22,199	-50.1		268	13.8
30	22	24,082	-50.3		267	14.6
25	20	25,277	-50.0		276	14.4
20	17	26,755	-49.5		282	12.2
15	11	28,660	-48.5		286	11.1
10						
7						
5						
4						

BISMARCK, N. DAK. 958 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	505	9.2	95	81	2.7
1000	30	142				
950	30	577	11.3	81	91	3.7
900	30	1,029	15.0	59	206	2.3
850	30	1,512	13.4	54	282	3.5
800	30	2,020	10.7	51	291	6.8
750	30	2,554	8.0	46	294	9.5
700	30	3,123	5.3	43	289	12.6
650	30	3,724	2.0	40	287	14.4
600	30	4,367	- 2.1	39	285	17.3
550	30	5,047	- 6.1	38	289	18.1
500	30	5,793	-11.0	33	289	19.6
450	30	6,586	-16.6		286	22.0
400	30	7,471	-22.8		286	25.1
350	30	8,435	-30.3		285	29.1
300	30	9,512	-38.6		283	33.6
250	30	10,740	-47.9		281	38.5
200	30	12,181	-56.6		282	43.7
175	30	13,024	-58.7		284	43.9
150	30	13,989	-59.8		285	43.3
125	30	15,124	-61.3		289	36.3
100	29	16,510	-61.1		293	30.1
80	29	17,899	-59.9		298	21.8
70	29	18,742	-59.5		304	16.7
60	29	19,700	-58.7		303	14.0
50	29	20,847	-57.9		316	11.8
40	27	22,261	-56.4		317	10.3
30	27	24,100	-53.4		304	10.5
25	27	25,279	-51.1		296	10.1
20	24	26,713	-49.1		285	14.0
15	21	28,601	-46.1		280	17.1
10	7	31,257	-44.7			
7						
5						
4						

BOISE, IDAHO 916 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	868	16.7	54	138	5.1
1000	30	111				
950	30	552				
900	30	1,018	18.8	46	133	5.2
850	30	1,507	17.5	41	154	4.7
800	30	2,022	14.4	41	179	4.9
750	30	2,563	10.6	44	210	6.6
700	30	3,135	6.7	45	230	9.9
650	30	3,738	2.4	47	233	12.6
600	30	4,382	- 2.0	47	238	16.3
550	30	5,066	- 6.5	47	235	17.5
500	30	5,808	-11.3	41	234	19.2
450	30	6,605	-16.8	37	236	20.4
400	30	7,485	-23.0		238	20.6
350	30	8,447	-30.5		237	22.7
300	30	9,524	-38.8		235	26.0
250	30	10,752	-47.7		240	28.7
200	30	12,201	-54.4		239	34.8
175	30	13,052	-56.9		243	32.4
150	30	14,022	-59.5		242	29.7
125	30	15,158	-61.5		243	24.7
100	30	16,538	-61.9		245	16.9
80	28	17,919	-60.4		249	9.5
70	28	18,758	-59.5		266	5.1
60	27	19,720	-59.3		266	3.3
50	27	20,864	-58.5		297	2.5
40	25	22,273	-56.7		310	2.1
30	25	24,109	-53.8		313	5.4
25	23	25,292	-51.5		300	6.8
20	19	26,743	-49.3		280	9.5
15	11	28,621	-46.3			
10						
7						
5						
4						

* BROWNSVILLE, TEXAS 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	7	23.9	89	19	1.0
1000	30	114	25.5	80	82	1.0
950	30	563	22.9	79	128	5.4
900	30	1,036	20.1	70	108	6.4
850	30	1,528	17.0	70	80	4.7
800	30	2,043	14.3	64	55	5.6
750	30	2,583	11.5	57	52	6.4
700	30	3,161	8.6	52	45	5.4
650	30	3,763	5.4	46	56	5.1
600	30	4,421	2.0	39	48	3.3
550	30	5,110	- 1.6	34	30	1.6
500	30	5,872	- 6.2	29	30	1.6
450	30	6,682	-11.3	29	89	.6
400	30	7,584	-17.4	31	320	1.0
350	29	8,569	-24.1	31	251	1.7
300	29	9,674	-32.6	29	267	2.5
250	29	10,932	-42.6		305	4.9
200	29	12,401	-54.0		304	5.1
175	29	13,246	-60.0		323	3.9
150	29	14,194	-66.0		318	5.6
125	27	15,286	-71.5		344	7.4
100	26	16,598	-72.1		26	9.3
80	26	17,929	-67.3		66	12.8
70	26	18,742	-65.2		80	14.2
60	26	19,683	-62.7		90	14.0
50	26	20,815	-59.8		86	20.4
40	26	22,217	-57.4		90	26.4
30	26	24,053	-53.2		88	28.6
25	25	25,236	-50.6		83	28.6
20	22	26,702	-47.6		85	27.0
15	22	28,622	-43.2		82	27.6
10	19	31,378	-39.4		93	28.2
7	16	33,856	-34.3		104	20.6
5	11	36,246	-30.4			
4						

BUFFALO, N. Y. 995 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	218	9.5	80	161	2.7
1000	30	176				
950	30	605	11.5	68	231	3.5
900	30	1,056	9.7	67	255	5.1
850	30	1,530	7.9	62	290	6.8
800	30	2,029	6.6	49	288	[illegible].9
750	30	2,555	4.4	45	291	12.8
700	30	3,117	1.9	41	303	17.3
650	30	3,708	- 1.4	39	297	17.9
600	30	4,345	- 4.8		297	20.0
550	30	5,019	- 9.0		299	22.0
500	30	5,757	-13.8	38	297	25.1
450	30	6,546	-18.9		297	26.4
400	30	7,418	-25.1		295	29.3
350	30	8,375	-32.0		293	31.3
300	30	9,446	-39.9		296	34.6
250	30	10,668	-48.9		293	38.5
200	30	12,107	-55.8		292	41.2
175	30	12,954	-57.2		289	41.6
150	28	13,925	-58.8		287	37.9
125	28	15,068	-59.3		283	33.6
100	28	16,465	-59.3		287	27.6
80	28	17,866	-58.2		288	18.3
70	28	18,715	-57.5		289	14.2
60	28	19,685	-56.4		288	13.4
50	28	20,948	-54.6		285	9.5
40	27	22,281	-52.8		276	8.5
30	26	24,150	-49.8		271	7.6
25	26	25,348	-48.4		273	5.4
20	22	26,819	-45.5		276	7.8
15	13	28,756	-43.3		269	5.8
10						
7						
5						
4						

* 1/ BURRWOOD, LA. 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	3	25.7	81	76	5.2
1000	30	124	25.3	76	71	6.6
950	30	575	22.1	75	74	8.2
900	30	1,043	19.2	72	88	7.8
850	30	1,533	16.4	67	103	6.6
800	30	2,048	13.7	63	85	5.6
750	30	2,587	10.9	56	66	5.2
700	30	3,164	8.0	54	42	4.1
650	30	3,768	5.0	50	14	3.3
600	30	4,422	1.6	45	26	3.3
550	30	5,111	- 2.4	43	5	1.6
500	30	5,869	- 6.9	40	345	2.7
450	30	6,681	-11.9	37	292	3.3
400	30	7,577	-18.1	36	299	4.3
350	30	8,560	-24.9		295	5.6
300	30	9,662	-33.2		302	9.5
250	30	10,917	-43.0		291	13.6
200	30	12,383	-54.3		281	17.3
175	30	13,227	-60.0		284	16.9
150	30	14,177	-65.3		300	14.8
125	30	15,274	-69.6		316	12.0
100	29	16,604	-69.0		3	7.0
80	29	17,951	-65.3		67	7.4
70	29	18,772	-63.2		81	8.4
60	29	19,720	-60.9		74	10.1
50	29	20,861	-57.9		85	15.3
40	29	22,277	-55.1		89	19.0
30	29	24,128	-51.8		90	22.7
25	29	25,316	-49.4		93	22.7
20	29	26,788	-46.7		82	20.6
15	29	28,707	-43.3		85	24.1
10	25	31,463	-38.0		93	21.4
7	19	33,931	-33.2		107	12.6
5	7	36,174	-30.7			
4						

* CANTON IS., PACIFIC AREA 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	27.4	79	88	7.4
1000	30	94	26.6	76	88	8.2
950	30	542	22.9	81	90	12.2
900	30	1,017	19.9	75	96	14.0
850	30	1,509	17.0	71	99	14.8
800	30	2,025	14.6	55	102	13.4
750	30	2,567	12.7	41	97	12.0
700	30	3,146	9.6	41	90	12.6
650	30	3,752	6.2	33	88	14.0
600	30	4,409	2.5	24	87	17.3
550	30	5,105	- 1.6	23	87	20.2
500	30	5,860	- 5.8	18	87	22.1
450	30	6,677	-10.3	15	90	21.8
400	30	7,577	-15.8	12	94	21.2
350	30	8,569	-22.6	11	99	19.6
300	30	9,683	-31.2	12	94	18.8
250	30	10,949	-41.5		97	16.7
200	30	12,422	-53.9		107	13.6
175	30	13,267	-60.8		106	8.4
150	30	14,209	-68.4		109	4.3
125	30	15,280	-76.0		98	5.7
100	30	16,552	-79.2		89	12.8
80	30	17,834	-74.6		89	23.7
70	29	18,620	-67.9		88	33.0
60	29	19,560	-62.0		89	27.8
50	29	20,705	-55.9		94	9.9
40	29	22,131	-54.2		277	9.5
30	29	23,988	-51.5		270	17.5
25	29	25,172	-51.0		270	21.0
20	29	26,630	-49.1		268	24.9
15	28	28,530	-46.0		275	32.1
10	27	31,244	-43.2		271	32.1
7	26	33,661	-41.0		269	28.0
5	22	35,967	-37.0		287	14.4
4	12	37,522	-33.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1963

CAPE HATTERAS, N. C. — 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	20.0	87	21	6.6
1000	30	140	20.2	81	24	9.5
950	30	578	17.7	79	25	11.3
900	30	1,043	15.0	76	25	5.1
850	30	1,525	12.5	73	354	4.7
800	30	2,033	10.8	63	299	5.2
750	30	2,568	8.7	56	275	7.0
700	30	3,139	6.1	48	260	10.3
650	30	3,735	3.2	40	259	10.5
600	30	4,389	.0		266	12.2
550	30	5,074	- 4.1		265	15.0
500	30	5,827	- 8.3		266	15.0
450	30	6,630	-13.7		264	18.3
400	30	7,523	-20.0		265	18.3
350	30	8,499	-26.9		262	23.5
300	30	9,594	-35.1		260	28.6
250	30	10,839	-44.8		257	36.1
200	30	12,296	-55.4		263	40.2
175	30	13,139	-59.8		266	40.0
150	30	14,094	-63.3		272	33.6
125	30	15,206	-65.6		275	23.5
100	30	16,565	-64.7		279	13.4
80	30	17,935	-61.8		283	7.0
70	29	18,764	-60.0		289	4.7
60	29	19,730	-58.3		307	2.1
50	29	20,884	-55.5		36	2.5
40	29	22,317	-52.5		99	7.0
30	29	24,186	-49.5		90	8.0
25	29	25,384	-47.8		95	11.3
20	28	26,864	-45.9		87	11.7
15	28	28,789	-43.2		88	13.0
10	26	31,552	-38.4		85	12.6
7	23	34,024	-33.4		98	8.7
5	18	36,417	-29.4			

CARIBOU, ME. — 996 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	191	6.0	93	294	2.9
1000	30	154			279	1.9
950	30	578	8.1	69	293	6.4
900	30	1,024	6.1	64	295	9.9
850	30	1,490	4.1	58	288	10.5
800	30	1,982	2.3	53	280	14.2
750	30	2,499	.3	48	280	16.3
700	30	3,054	- 1.6	44	275	18.8
650	30	3,639	- 4.2	40	269	22.0
600	30	4,269	- 7.8	38	266	25.6
550	30	4,936	-11.9	38	261	28.2
500	30	5,664	-16.4	35	261	32.4
450	30	6,444	-21.6	35	258	35.9
400	30	7,308	-27.5	36	256	38.7
350	30	8,256	-34.2		254	40.4
300	30	9,317	-41.8		253	46.8
250	30	10,532	-49.3		250	52.3
200	30	11,974	-54.9		254	54.8
175	30	12,827	-55.0		260	46.6
150	30	13,812	-55.3		262	42.9
125	30	14,973	-55.9		262	36.3
100	30	16,393	-55.7		264	31.5
80	29	17,820	-54.6		265	22.9
70	29	18,682	-54.0		267	19.8
60	29	19,668	-53.3		263	15.2
50	29	20,844	-52.6		263	13.8
40	29	22,288	-51.0		257	12.4
30	28	24,173	-48.6		251	11.7
25	25	25,386	-47.3		254	10.3
20	24	26,871	-45.2		254	10.7
15	22	28,802	-42.6		270	8.9
10	20	31,571	-38.6		261	8.5
7	14	34,059	-33.7		272	14.0
5	6	36,447	-31.1			

CHARLESTON, S. C. — 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	18.8	89	5	5.4
1000	30	145	20.1	83	26	8.4
950	30	585	19.6	73	52	10.3
900	30	1,053	17.3	66	55	8.0
850	30	1,540	14.6	64	45	4.9
800	30	2,052	12.3	55	3	1.9
750	30	2,589	9.9	49	319	2.5
700	30	3,163	7.4	39	276	3.5
650	30	3,767	4.0	41	280	5.1
600	30	4,418	.8	36	273	5.6
550	30	5,107	- 3.0		278	7.6
500	30	5,863	- 7.6		279	9.9
450	30	6,670	-13.2		284	12.2
400	30	7,565	-19.1		288	12.8
350	30	8,545	-26.2		283	16.1
300	30	9,641	-34.6		276	17.7
250	30	10,890	-44.3		272	22.3
200	29	12,351	-55.5		279	25.4
175	29	13,192	-60.8		281	28.2
150	29	14,140	-65.1		285	22.0
125	29	15,242	-67.8		292	16.3
100	29	16,586	-66.4		305	8.5
80	29	17,947	-63.5		304	5.4
70	29	18,780	-61.3		347	3.3
60	29	19,733	-58.9		60	4.5
50	29	20,883	-57.0		72	7.4
40	28	22,304	-54.3		92	10.5
30	28	24,162	-51.0		91	15.2
25	27	25,354	-49.0		92	16.3
20	26	26,827	-46.5		83	15.5
15	21	28,758	-43.1		86	22.5
10	9	31,559	-37.0			

*** COLD BAY, ALASKA — 999 MB**

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	8.6	88	219	1.9
1000	30	20			281	3.3
950	30	441	6.2	86	271	3.1
900	30	884	3.6	88	294	2.7
850	30	1,347	1.4	81	266	1.6
800	30	1,835	- .6	73	229	2.7
750	30	2,347	- 3.3	70	250	3.7
700	30	2,892	- 6.2	66	258	4.7
650	30	3,467	- 9.6	60	258	6.0
600	30	4,084	-13.1	53	250	8.2
550	30	4,737	-17.0	50	264	7.4
500	30	5,451	-21.7	49	269	8.0
450	30	6,211	-27.1	46	254	10.3
400	30	7,060	-33.2	40	259	12.2
350	30	7,985	-39.7		259	15.2
300	30	9,025	-45.7		256	19.2
250	29	10,235	-49.8		252	20.2
200	29	11,697	-49.1		256	24.3
175	29	12,573	-49.1		251	24.1
150	28	13,580	-49.4		255	25.1
125	28	14,773	-49.9		253	20.0
100	28	16,231	-50.0		247	16.9
80	28	17,687	-50.6		249	14.0
70	28	18,555	-50.6		247	11.5
60	28	19,561	-51.0		247	11.7
50	28	20,746	-51.5		250	9.3
40	28	22,194	-51.5		250	8.5
30	27	24,064	-51.3		272	7.8
25	27	25,248	-51.2		290	6.4
20	27	26,699	-50.8		287	7.2
15	27	28,577	-49.6		299	6.4
10	23	31,233	-47.2		304	9.9
7	23	33,609	-44.4		310	12.4
5	17	35,876	-40.7		290	8.9
4	8	37,451	-38.3			

COLUMBIA, MO. — 990 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	15.9	89	124	2.3
1000	30	150				
950	30	587	18.4	67	191	6.6
900	30	1,052	16.1	66	231	6.6
850	30	1,527	13.6	67	269	5.2
800	30	2,046	12.0	54	284	6.0
750	30	2,580	9.3	48	293	7.2
700	30	3,155	6.4	43	300	9.3
650	30	3,755	2.7	44	302	9.9
600	30	4,403	- 1.1	39	292	10.3
550	30	5,086	- 5.4	35	297	11.3
500	30	5,836	- 9.6		306	11.1
450	30	6,634	-15.0		307	13.6
400	30	7,523	-21.3		306	14.6
350	30	8,494	-28.2		309	18.6
300	30	9,582	-36.3		306	23.5
250	30	10,821	-45.7		302	30.9
200	30	12,275	-55.2		297	35.4
175	29	13,115	-59.3		301	38.1
150	29	14,073	-62.2		304	32.8
125	29	15,192	-64.7		305	26.6
100	29	16,553	-64.3		309	19.0
80	29	17,921	-62.9		324	12.2
70	29	18,743	-61.6		341	9.1
60	29	19,704	-60.0		5	7.6
50	29	20,847	-57.7		11	5.8
40	29	22,265	-54.8		331	3.7
30	27	24,116	-51.3		295	4.3
25	25	25,299	-48.9		287	4.1
20	24	26,771	-46.8		273	3.3
15	16	28,675	-44.7			

DAYTON, OHIO — 984 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	11.5	89	43	1.9
1000	30	164				
950	30	598	16.1	64	181	1.4
900	30	1,057	13.8	60	304	3.9
850	30	1,537	11.4	57	306	5.2
800	30	2,042	9.6	45	301	6.6
750	30	2,574	7.5	36	300	8.4
700	30	3,141	4.9	31	303	10.5
650	30	3,739	1.9		304	11.8
600	30	4,384	- 2.0		305	13.8
550	30	5,061	- 6.1		308	16.1
500	30	5,811	-10.8		303	18.6
450	30	6,604	-16.1		302	20.4
400	30	7,490	-22.4		300	22.3
350	30	8,457	-29.5		297	25.3
300	30	9,538	-37.8		295	29.3
250	30	10,771	-47.0		295	35.7
200	30	12,217	-55.6		295	40.8
175	30	13,061	-58.4		291	40.2
150	30	14,024	-60.9		293	35.9
125	30	15,150	-63.3		291	30.9
100	30	16,521	-62.7		298	22.9
80	30	17,901	-61.1		300	14.2
70	30	18,737	-59.8		301	10.1
60	30	19,700	-58.5		303	8.9
50	30	20,852	-56.7		302	6.2
40	30	22,275	-53.8		292	5.6
30	29	24,131	-50.5		273	4.3
25	29	25,326	-48.5		281	4.5
20	29	26,800	-46.6		269	3.5
15	25	28,724	-44.0		281	3.9
10	12	31,464	-41.6		322	2.7

DEL RIO, TEXAS — 978 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	28	314	22.5	76	94	4.1
1000	28	124				
950	28	574	22.7	72	126	8.9
900	28	1,041	20.1	71	154	10.9
850	28	1,533	17.1	72	150	8.7
800	28	2,049	13.9	71	124	5.8
750	28	2,586	11.0	64	99	6.6
700	28	3,165	8.2	54	83	7.6
650	28	3,770	5.3	43	79	9.1
600	28	4,424	1.5	42	82	6.8
550	28	5,111	- 2.5	40	48	3.3
500	28	5,872	- 6.9	38	52	3.1
450	28	6,683	-12.0		65	2.3
400	28	7,580	-18.0		343	1.7
350	28	8,566	-24.7		311	5.2
300	28	9,671	-32.8		287	6.6
250	28	10,931	-42.2		283	10.5
200	28	12,404	-53.5		308	15.2
175	28	13,252	-59.3		312	15.2
150	28	14,205	-65.1		314	13.2
125	28	15,303	-70.1		325	8.4
100	28	16,619	-72.6		353	6.0
80	27	17,947	-67.7		60	10.1
70	27	18,759	-65.1		73	10.9
60	27	19,702	-62.3		80	12.2
50	27	20,834	-59.7		84	16.1
40	26	22,237	-57.0		86	18.5
30	26	24,073	-53.6		85	20.8
25	24	25,251	-51.5		84	22.9
20	25	26,707	-48.6		84	23.1
15	22	28,609	-45.8		81	23.1
10	11	31,333	-42.0			

DENVER, COLO. — 842 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,611	12.0	77	206	2.9
1000	30	135				
950	30	574				
900	30	1,040				
850	30	1,527				
800	30	2,043	16.6	54	305	4.3
750	30	2,588	14.2	45	311	4.7
700	30	3,170	9.9	46	312	3.7
650	30	3,777	5.2	51	286	4.7
600	30	4,429	.5	49	268	5.6
550	30	5,115	- 4.3	45	272	9.5
500	30	5,867	- 8.9		274	11.3
450	30	6,671	-14.2		278	11.8
400	30	7,559	-20.6		273	14.2
350	30	8,533	-27.9		263	15.0
300	30	9,621	-36.3		261	20.0
250	30	10,861	-45.8		266	25.1
200	30	12,316	-54.9		266	29.1
175	30	13,161	-58.9		271	30.9
150	30	14,119	-62.4		278	26.6
125	30	15,236	-65.3		277	20.0
100	30	16,590	-66.2		292	10.5
80	30	17,951	-63.3		331	5.2
70	30	18,775	-61.5		350	4.7
60	30	19,732	-60.5		21	4.9
50	28	20,872	-59.2		31	4.7
40	28	22,280	-56.6		355	4.9
30	28	24,122	-52.6		311	4.1
25	27	25,304	-50.1		302	4.9
20	27	26,769	-47.6		295	5.2
15	25	28,674	-44.7		287	7.2
10	12	31,410	-41.4			

DODGE CITY, KANS. — 927 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	792	17.2	87	184	5.8
1000	29	139				
950	29	581				
900	29	1,045	19.3	69	197	13.8
850	29	1,537	18.4	60	221	15.3
800	29	2,056	15.9	52	241	11.8
750	29	2,598	12.3	53	258	9.7
700	29	3,177	8.4	54	273	7.2
650	29	3,783	4.5	52	296	6.0
600	29	4,434	.2	45	293	5.8
550	29	5,122	- 3.5		298	5.4
500	29	5,875	- 8.1		300	7.8
450	29	6,682	-13.2		300	10.1
400	29	7,575	-19.4		299	11.7
350	29	8,554	-26.4		293	13.4
300	29	9,649	-35.0		287	17.3
250	29	10,894	-44.9		279	21.6
200	29	12,352	-55.0		278	26.8
175	29	13,196	-59.4		285	28.4
150	29	14,152	-63.0		288	23.5
125	28	15,265	-66.9		291	19.4
100	28	16,609	-67.0		305	12.6
80	28	17,967	-63.9		342	6.0
70	28	18,788	-62.6		14	6.8
60	28	19,742	-61.1		27	6.8
50	28	20,880	-58.8		45	7.2
40	28	22,293	-55.5		33	3.7
30	27	24,144	-52.1		10	2.5
25	23	25,333	-50.1		15	1.2
20	21	26,806	-47.2		16	5.8
15	15	28,690	-45.0		47	1.6
10	5	31,361	-41.7			

EL PASO, TEXAS — 885 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,193	19.1	67	52	3.1
1000	30	120				
950	30	570				
900	30	1,044				
850	30	1,536	19.1	56	107	5.8
800	30	2,055	16.2	56	126	7.4
750	30	2,595	12.8	57	108	6.8
700	30	3,178	8.8	58	83	8.4
650	30	3,782	4.6	58	82	9.9
600	30	4,436	.4	54	83	8.4
550	30	5,121	- 3.7	42	89	6.0
500	30	5,877	- 7.8		96	3.7
450	30	6,682	-13.0		116	1.7
400	30	7,578	-19.3		252	2.5
350	30	8,557	-26.1		252	4.7
300	30	9,655	-34.0		262	8.4
250	30	10,907	-43.2		259	15.5
200	30	12,377	-53.5		269	23.1
175	30	13,225	-59.1		264	20.0
150	30	14,178	-64.8		271	18.6
125	30	15,275	-70.1		279	11.3
100	30	16,596	-70.8		295	4.7
80	30	17,931	-66.8		57	7.6
70	29	18,747	-64.3		76	10.5
60	29	19,686	-62.1		84	11.8
50	29	20,819	-59.5		86	13.0
40	29	22,226	-56.4		89	13.2
30	29	24,065	-53.4		87	15.7
25	28	25,245	-50.8		85	16.9
20	28	26,708	-47.6		81	18.6
15	24	28,622	-44.6		79	21.4

FLY, NEV. — 812 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	8.8	68	182	7.0
1000	30	142				
950	30	584				
900	30	1,045				
850	30	1,524				
800	30	2,032	13.2	53	182	8.5
750	30	2,578	12.6	44	181	9.7
700	30	3,151	8.7	44	214	11.5
650	30	3,760	4.4	44	219	12.0
600	30	4,405	- .5	46	215	12.4
550	30	5,091	- 4.8	37	216	13.2
500	30	5,838	- 9.3		229	15.2
450	30	6,641	-14.8		234	17.9
400	30	7,524	-21.6		240	17.7
350	30	8,493	-29.2		235	17.3
300	30	9,575	-38.0		232	19.4
250	30	10,807	-46.4		233	19.8
200	30	12,262	-54.3		236	25.8
175	30	13,111	-57.6		234	23.5
150	30	14,075	-61.3		238	22.7
125	30	15,199	-63.7		246	15.7
100	30	16,565	-64.0		235	8.9
80	30	17,934	-62.6		216	3.9
70	29	18,771	-61.4		156	1.0
60	29	19,718	-60.5		60	2.5
50	29	20,857	-59.2		64	4.9
40	28	22,264	-56.9		52	3.1
30	27	24,103	-53.3		353	1.6
25	24	25,281	-51.0		329	2.1
20	23	26,745	-47.7		324	1.9
15	17	28,661	-45.7		47	1.7
10	7	31,397	-42.2			

*** FAIRBANKS, ALASKA — 991 MB**

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	135	5.0	73	357	5.4
1000	29	62				
950	29	484	6.9	57	74	11.8
900	29	926	5.2	57	116	8.7
850	29	1,391	2.7	63	134	6.2
800	29	1,880	.2	61	151	5.8
750	29	2,393	- 2.7	53	152	4.9
700	29	2,939	- 6.2	52	169	4.9
650	29	3,510	- 9.5	46	185	3.9
600	29	4,129	-13.3	41	200	4.9
550	29	4,782	-17.6	38	219	4.3
500	29	5,494	-22.3	39	220	4.7
450	29	6,254	-27.7	38	231	6.0
400	29	7,098	-33.8	40	233	8.0
350	29	8,021	-40.8		235	6.8
300	29	9,053	-48.4		240	8.0
250	29	10,231	-55.9		280	7.4
200	29	11,655	-52.9		253	11.3
175	29	12,520	-51.4		251	12.6
150	29	13,521	-51.3		251	12.6
125	28	14,706	-50.8		250	13.0
100	28	16,160	-50.5		253	14.0
80	28	17,613	-50.9		259	13.8
70	28	18,484	-51.2		253	13.6
60	28	19,483	-51.5		261	14.8
50	28	20,665	-51.9		267	13.6
40	28	22,111	-52.0		266	14.4
30	26	23,970	-52.1		275	15.0
25	25	25,147	-51.7		285	15.3
20	23	26,597	-51.4		285	16.3
15	23	28,468	-50.5		296	16.3
10	22	31,127	-48.2		297	18.5
7	19	33,492	-44.9		295	23.5
5	13	35,758	-42.2		301	25.1
4	9	37,284	-40.0			

FLINT, MICH. — 993 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	234	9.8	92	222	1.0
1000	30	176				
950	30	607	13.0	74	266	2.7
900	30	1,060	10.9	69	308	5.6
850	30	1,535	9.2	59	307	7.8
800	30	2,037	7.9	47	295	8.9
750	30	2,569	5.7	42	289	11.3
700	30	3,130	3.2	35	291	12.4
650	30	3,722	.1	35	294	15.7
600	30	4,364	- 3.4	31	294	18.8
550	30	5,041	- 7.5	30	294	19.8
500	30	5,783	-12.0		294	23.3
450	30	6,575	-17.5		299	26.6
400	30	7,452	-24.0		299	28.7
350	30	8,413	-31.0		303	34.8
300	30	9,488	-39.2		299	32.2
250	30	10,712	-48.5		297	39.0
200	30	12,151	-56.0		297	44.5
175	30	12,998	-57.3		296	43.1
150	30	13,969	-58.7		295	40.0
125	30	15,108	-60.4		291	35.2
100	30	16,498	-59.9		295	28.4
80	30	17,896	-58.5		300	20.2
70	30	18,739	-57.8		301	15.5
60	30	19,712	-56.6		301	11.8
50	30	20,872	-55.1		291	8.5
40	30	22,303	-53.2		286	8.0
30	30	24,170	-50.1		284	9.3
25	29	25,363	-48.3		279	10.3
20	29	26,841	-45.9		272	9.7
15	22	28,787	-43.1		267	10.3
10	5	31,525	-40.5			

FORT WORTH, TEXAS — 996 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	180	21.2	77	45	.6
1000	30	142				
950	30	591	21.9	68	165	5.4
900	30	1,058	19.8	67	161	4.3
850	30	1,548	16.7	69	132	2.5
800	30	2,063	14.0	61	72	2.1
750	30	2,600	10.9	59	46	3.7
700	30	3,179	7.6	54	32	5.8
650	30	3,783	4.1	51	40	6.2
600	30	4,433	.1	50	39	4.9
550	30	5,118	- 3.8	49	24	3.7
500	30	5,873	- 8.1	39	354	3.1
450	30	6,679	-13.3		327	5.2
400	30	7,572	-19.0		331	5.6
350	30	8,552	-25.9		316	7.6
300	30	9,651	-34.0		312	10.3
250	30	10,904	-43.4		308	14.6
200	30	12,370	-54.2		306	18.1
175	30	13,216	-59.6		304	17.1
150	30	14,169	-64.5		299	16.7
125	30	15,271	-68.6		314	12.8
100	30	16,603	-69.2		334	7.0
80	30	17,945	-66.1		30	7.6
70	30	18,768	-63.1		67	8.2
60	30	19,713	-61.2		70	8.0
50	30	20,852	-58.3		80	8.5
40	30	22,264	-56.1		85	9.7
30	29	24,111	-52.4		84	14.2
25	28	25,295	-50.0		86	15.3
20	28	26,761	-47.6		83	16.7
15	25	28,670	-44.4		82	20.4
10	17	31,408	-40.6		86	17.1

GLASGOW, MONT. — 935 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	696	12.7	76	100	5.8
1000	30	123				
950	30	557				
900	30	1,017	16.1	58	163	5.6
850	30	1,503	14.9	50	227	6.4
800	30	2,013	11.8	50	256	8.4
750	30	2,547	8.6	46	267	10.1
700	30	3,117	4.9	41	276	12.2
650	30	3,714	1.1	42	276	15.7
600	30	4,357	- 2.8	40	275	18.5
550	30	5,036	- 6.8	38	275	20.8
500	30	5,779	-11.5		276	20.8
450	30	6,571	-16.9		275	23.5
400	30	7,452	-23.3		275	23.9
350	30	8,415	-31.0		273	26.4
300	30	9,489	-39.6		278	30.7
250	30	10,711	-48.9		270	34.2
200	30	12,148	-56.6		276	40.4
175	30	12,992	-57.5		276	38.9
150	29	13,968	-59.0		280	35.7
125	29	15,105	-60.8		285	32.8
100	29	16,492	-60.6		288	28.2
80	28	17,879	-59.6		295	20.6
70	28	18,716	-59.1		301	17.5
60	27	19,684	-58.6		305	14.0
50	27	20,829	-58.1		311	11.3
40	26	22,234	-57.1		316	10.9
30	25	24,062	-55.0		321	9.3
25	23	25,242	-52.7		308	10.5
20	23	26,690	-50.2		298	12.8
15	21	28,597	-46.1		285	15.0
10	12	31,350	-41.5			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1963

GRAND JUNCTION, COLO. 855 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	15.0	54	125	4.5
1000	30	123				
950	30	562				
900	30	1,032				
850	30	1,525	16.5	50	125	4.9
800	30	2,043	16.5	44	135	6.8
750	30	2,590	13.8	45	177	4.5
700	30	3,168	9.7	48	220	6.6
650	30	3,776	5.0	51	229	8.4
600	30	4,427	.4	49	231	9.7
550	30	5,113	- 4.3	44	238	10.9
500	30	5,864	- 9.0	35	248	13.0
450	30	6,668	-14.4		248	14.6
400	30	7,554	-21.2		248	15.0
350	30	8,526	-28.4		251	16.7
300	30	9,612	-36.5		241	20.8
250	30	10,851	-45.7		247	26.8
200	30	12,305	-54.5		253	29.7
175	30	13,152	-58.4		258	28.2
150	30	14,112	-62.5		264	25.3
125	30	15,227	-65.9		265	17.1
100	30	16,577	-66.0		269	8.9
80	30	17,935	-64.4		305	2.9
70	30	18,760	-62.9		24	1.7
60	30	19,707	-61.7		50	3.9
50	29	20,839	-59.6		45	2.5
40	29	22,241	-57.4		23	3.1
30	29	24,073	-53.8		353	2.7
25	28	25,255	-51.4		276	1.4
20	28	26,713	-48.8		259	3.1
15	27	28,615	-46.0		286	4.3
10	27	31,332	-42.3		254	2.7
7	27	33,772	-38.9		241	4.7
5	25	36,098	-35.4		202	1.0

GREAT FALLS, MONT. 889 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,123	11.7	63	226	5.6
1000	30	120				
950	30	556				
900	30	1,017				
850	30	1,500	15.7	48	233	8.4
800	30	2,012	13.0	48	222	4.7
750	30	2,549	9.6	47	264	9.9
700	30	3,120	5.7	48	260	14.0
650	30	3,721	1.9	49	260	16.5
600	30	4,364	- 2.3	43	261	20.4
550	30	5,045	- 6.6	42	263	22.5
500	30	5,789	-11.2		259	21.8
450	30	6,586	-16.6		258	23.3
400	30	7,466	-22.9		257	23.3
350	30	8,430	-30.4		256	23.9
300	30	9,507	-38.8		256	25.8
250	30	10,734	-47.8		255	30.1
200	30	12,179	-55.4		260	35.4
175	30	13,028	-56.8		258	38.5
150	30	14,001	-58.3		262	34.8
125	30	15,144	-60.2		267	29.1
100	30	16,533	-60.2		270	23.7
80	30	17,928	-59.2		271	17.3
70	30	18,768	-58.8		279	15.7
60	30	19,734	-58.7		288	11.8
50	30	20,883	-57.9		306	8.9
40	30	22,292	-56.9		303	7.6
30	30	24,125	-54.6		308	7.8
25	30	25,297	-53.0		292	9.5
20	29	26,746	-50.8		278	11.3
15	28	28,632	-47.4		280	14.8
10	26	31,349	-42.0		269	19.8
7	26	33,785	-39.2		262	25.8
5	25	36,085	-36.3			

GREEN BAY, WIS. 994 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	210	9.9	90	329	2.1
1000	30	161				
950	30	593	12.6	73	284	4.1
900	30	1,043	10.3	72	296	4.9
850	30	1,519	9.5	55	287	6.8
800	30	2,020	7.5	50	283	8.0
750	30	2,550	5.1	50	288	11.1
700	30	3,111	2.6	45	295	13.2
650	30	3,703	- .6		293	16.7
600	30	4,342	- 4.2	40	296	21.2
550	30	5,017	- 8.0	40	298	23.5
500	30	5,759	-12.4	35	296	25.6
450	30	6,547	-17.7		299	28.0
400	30	7,427	-23.9		301	30.5
350	30	8,387	-31.2		301	32.6
300	30	9,461	-39.6		302	34.6
250	30	10,682	-49.0		304	39.6
200	30	12,120	-56.8		305	47.2
175	30	12,961	-57.5		304	47.0
150	30	13,931	-59.1		302	39.6
125	30	15,068	-60.7		303	34.4
100	30	16,458	-60.2		301	29.7
80	30	17,854	-58.9		307	20.8
70	30	18,693	-58.2		307	17.3
60	30	19,664	-57.3		307	14.4
50	30	20,820	-55.7		306	11.1
40	30	22,247	-53.9		297	9.1
30	27	24,100	-50.7		276	8.9
25	26	25,288	-48.6		268	9.9
20	22	26,761	-45.9		265	13.4
15	15	28,650	-43.7			
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GREENSBORO, N. C. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	273	14.0	92	3	2.9
1000	30	167				
950	30	603	16.1	76	15	5.6
900	30	1,062	14.3	72	15	5.2
850	30	1,544	12.2	71	349	4.9
800	30	2,051	9.8	66	326	6.6
750	30	2,587	7.8	52	318	8.0
700	30	3,153	5.5	42	312	8.4
650	30	3,751	2.5	39	303	10.1
600	30	4,399	- .9		292	12.4
550	30	5,084	- 4.7		288	13.8
500	30	5,835	- 8.9		284	16.3
450	30	6,638	-14.5		285	17.7
400	30	7,526	-20.6		279	20.8
350	30	8,500	-27.5		277	25.6
300	30	9,591	-35.8		276	29.7
250	30	10,832	-45.6		275	35.0
200	30	12,286	-55.6		279	37.9
175	30	13,128	-60.0		282	38.1
150	30	14,082	-63.1		283	31.1
125	30	15,195	-65.7		283	23.5
100	30	16,548	-65.7		291	16.1
80	30	17,912	-63.4		301	9.7
70	30	18,742	-61.3		302	6.6
60	30	19,697	-59.5		300	3.1
50	30	20,845	-57.1		330	2.7
40	30	22,267	-54.1		97	3.1
30	27	24,129	-51.2		79	5.2
25	26	25,320	-49.3		83	7.6
20	21	26,780	-47.4		80	8.2
15	11	28,708	-44.2			
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GUAM, MARIANA IS. 997 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	111	25.1	95	99	1.4
1000	30	86				
950	30	540	24.3	84	103	5.2
900	30	1,011	21.6	84	102	6.0
850	30	1,507	19.0	82	97	7.2
800	30	2,027	16.3	79	95	7.0
750	30	2,575	13.6	75	92	9.5
700	30	3,154	10.6	70	95	10.5
650	30	3,770	7.1	67	97	11.3
600	30	4,424	3.2	68	93	11.8
550	30	5,121	- .9	66	[illegible]	11.8
500	30	5,880	- 5.4	60	101	14.8
450	30	6,698	-10.2	54	98	[illegible]
400	30	7,600	-15.7	50	96	15.0
350	30	8,594	-22.3	50	91	13.6
300	30	9,708	-30.5	49	94	13.4
250	30	10,976	-40.8		88	12.8
200	30	12,452	-53.4		81	10.3
175	30	13,297	-60.7		75	[illegible]
150	30	14,238	-68.5		66	13.4
125	29	15,311	-75.7		74	22.1
100	28	16,585	-77.0		84	28.4
80	27	17,883	-71.9		80	24.0
70	26	18,673	-68.4		89	35.7
60	25	19,608	-64.9		91	35.5
50	25	20,730	-60.9		89	28.7
40	24	22,133	-55.9		92	17.3
30	24	23,980	-53.2		51	5.2
25	24	25,160	-51.2		26	2.7
20	23	26,618	-48.8		51	1.4
15	23	28,522	-46.1		33	3.1
10	21	31,232	-42.6		75	17.1
7	15	33,656	-39.9		84	19.7
5	8	35,945	-36.7			

HILO, HAWAII 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	21.9	88	235	5.2
1000	30	130	23.1	82	241	2.3
950	30	573	20.3	84	77	4.7
900	30	1,043	17.3	87	67	6.6
850	30	1,530	14.8	85	66	6.2
800	30	2,043	12.9	71	69	6.6
750	30	2,584	10.6	53	77	6.8
700	30	3,157	8.8	40	81	5.8
650	30	3,765	6.1	35	85	4.9
600	30	4,420	2.3	36	93	3.9
550	30	5,113	- 1.9	35	149	2.7
500	30	5,870	- 6.5	35	192	3.3
450	30	6,684	-11.5	28	223	5.2
400	30	7,581	-17.4		238	8.4
350	30	8,567	-24.7		253	12.4
300	30	9,670	-33.2		256	17.3
250	30	10,926	-42.8		256	23.1
200	29	12,392	-54.3		257	23.7
175	28	13,234	-60.5		254	22.1
150	28	14,181	-65.9		244	15.9
125	28	15,274	-70.8		241	7.0
100	28	16,582	-73.1		85	7.6
80	28	17,903	-69.2		87	17.1
70	28	18,703	-67.0		88	21.8
60	28	19,640	-64.2		89	25.1
50	28	20,762	-61.6		89	26.6
40	28	22,153	-58.7		87	27.6
30	28	23,978	-54.0		90	26.4
25	27	25,159	-51.6		92	24.5
20	27	26,618	-48.7		93	24.5
15	26	28,523	-45.2		88	23.5
10	22	31,246	-42.0		96	23.9
7	9	33,653	-39.6			
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HUNTINGTON, W. VA. 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	12.7	96	70	1.0
1000	30	168				
950	30	606	16.2	68	234	.4
900	30	1,063	14.2	63	325	3.1
850	30	1,544	12.0	58	313	6.0
800	30	2,050	9.8	48	311	6.6
750	30	2,582	7.6	42	313	8.0
700	30	3,151	5.1	35	309	9.7
650	30	3,749	2.1		311	11.7
600	30	4,395	- 1.4		307	12.8
550	30	5,075	- 5.5		306	14.6
500	30	5,826	-10.1		304	16.3
450	30	6,623	-15.5		298	18.5
400	30	7,510	-21.7		302	21.0
350	30	8,480	-28.4		301	24.5
300	30	9,567	-36.4		296	31.1
250	30	10,804	-46.1		287	37.9
200	30	12,257	-55.0		287	41.2
175	30	13,103	-58.8		286	39.6
150	30	14,063	-61.9		286	34.4
125	30	15,186	-63.5		292	28.0
100	30	16,555	-63.5		295	20.0
80	30	17,931	-61.7		298	13.4
70	30	18,763	-60.6		306	9.1
60	29	19,725	-58.5		324	5.8
50	29	20,877	-56.3		323	4.3
40	28	22,304	-53.7		304	3.5
30	28	24,166	-50.5		291	1.9
25	28	25,360	-48.6		317	1.2
20	26	26,834	-46.7		35	2.9
15	23	28,773	-43.9		84	3.5
10	9	31,498	-40.9			
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* INTERNAT. FALLS, MINN. 975 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	360	9.7	89	192	1.9
1000	30	151				
950	30	580	11.4	77	215	6.[illegible]
900	30	1,032	10.5	70	260	12.4
850	30	1,507	9.5	52	281	12.0
800	30	2,008	7.4	45	285	15.0
750	30	2,533	4.5	49	279	16.7
700	30	3,096	1.5	43	288	18.1
650	30	3,682	- 1.7	42	289	20.8
600	30	4,322	- 5.2	36	294	25.3
550	30	5,010	- 8.7	27	295	26.2
500	30	5,734	-13.3	27	292	29.7
450	30	6,519	-18.8	31	291	32.2
400	30	7,396	-25.0	31	293	35.9
350	29	8,351	-32.5	33	291	38.7
300	29	9,420	-40.6		293	43.5
250	29	10,638	-49.6		292	44.9
200	28	12,068	-57.7		294	48.2
175	28	12,909	-58.4		292	49.3
150	28	13,877	-58.9		293	44.3
125	28	15,019	-59.7		295	39.6
100	28	16,415	-58.8		297	31.5
80	28	17,819	-58.0		301	25.6
70	28	18,659	-57.8		304	23.9
60	28	19,634	-57.3		306	20.6
50	28	20,787	-56.9		312	15.9
40	28	22,206	-55.4		306	13.6
30	28	24,050	-53.1		305	10.1
25	27	25,228	-51.1		294	11.3
20	23	26,678	-48.7		280	11.5
15	22	28,590	-45.1		279	13.8
10	20	31,325	-40.5		272	14.4
7	14	33,755	-37.3		270	17.9
5	9	36,057	-33.6			

JACKSON, MISS. 1005 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	94	19.3	87	71	2.9
1000	30	137	20.0	83	83	4.5
950	30	580	21.0	69	112	7.2
900	30	1,049	18.6	69	101	5.8
850	30	1,538	15.9	62	55	2.1
800	30	2,052	13.4	60	16	2.9
750	30	2,593	10.7	52	17	2.9
700	30	3,165	7.7	49	25	3.9
650	30	3,768	4.6	45	12	3.7
600	30	4,422	.7	41	351	4.1
550	30	5,109	- 3.1	37	339	3.5
500	30	5,866	- 7.6		306	3.3
450	30	6,672	-12.8		297	5.6
400	30	7,569	-18.6		279	8.0
350	30	8,551	-25.6		273	9.7
300	30	9,649	-34.0		280	13.0
250	29	10,897	-43.6		282	15.5
200	29	12,360	-54.3		291	17.3
175	29	13,205	-59.6		296	17.7
150	29	14,156	-64.5		300	17.9
125	29	15,258	-68.2		319	16.3
100	29	16,595	-68.1		337	9.7
80	29	17,945	-65.0		32	7.2
70	29	18,767	-62.7		59	5.8
60	29	19,717	-60.6		63	6.2
50	29	20,861	-58.2		70	8.4
40	29	22,273	-55.1		86	11.3
30	29	24,123	-52.0		84	15.0
25	29	25,308	-50.1		85	16.5
20	29	26,774	-48.0		87	17.5
15	26	28,684	-45.4		81	19.2
10	12	31,403	-41.4			
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JACKSONVILLE, FLA. 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	21.9	94	8	3.7
1000	30	137	22.5	88	21	6.2
950	30	584	20.9	80	62	10.7
900	30	1,052	18.2	76	76	8.9
850	30	1,540	15.5	68	85	6.2
800	30	2,054	12.9	64	86	3.9
750	30	2,593	10.2	60	97	7.5
700	29	3,169	7.1	57	23	1.6
650	29	3,769	4.1	51	302	2.1
600	29	4,424	.7	47	290	4.1
550	29	5,110	- 3.2	43	292	4.7
500	29	5,868	- 7.5	39	277	6.0
450	29	6,676	-12.5		294	9.7
400	29	7,573	-18.3		289	11.8
350	29	8,556	-25.4		281	12.0
300	29	9,656	-33.8		278	15.0
250	29	10,908	-43.7		274	19.5
200	29	12,370	-54.8		278	22.3
175	29	13,212	-60.5		279	23.3
150	29	14,159	-66.0		288	21.4
125	29	15,257	-68.1		299	13.2
100	29	16,596	-67.3		324	6.6
80	29	17,951	-63.7		36	3.5
70	29	18,779	-62.2		63	5.2
60	29	19,730	-59.6		70	9.1
50	29	20,877	-56.8		86	13.6
40	29	22,299	-54.1		94	17.5
30	27	24,159	-51.0		92	21.6
25	27	25,351	-48.6		90	22.9
20	26	26,824	-46.1		84	22.3
15	25	28,753	-42.3		83	24.1
10	23	31,530	-37.1		94	21.8
7	12	34,051	-33.3			
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JOHNSTON IS., PACIFIC AREA 1013 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	3	26.8	81	87	11.7
1000	29	118	25.8	82	84	14.0
950	29	570	22.1	83	82	16.9
900	29	1,038	18.8	82	88	17.3
850	29	1,528	15.9	80	87	15.9
800	29	2,042	13.7	68	83	14.6
750	29	2,578	11.4	54	85	13.6
700	29	3,158	8.7	45	78	11.7
650	29	3,760	5.4	40	78	11.5
600	29	4,419	2.2	31	65	9.5
550	29	5,107	- 1.6		63	8.2
500	29	5,870	- 5.9		65	7.0
450	29	6,677	-11.1		52	6.6
400	29	7,582	-17.4		30	2.7
350	29	8,568	-24.7		292	4.9
300	29	9,671	-33.1		283	10.1
250	29	10,926	-43.0		271	14.8
200	29	12,391	-55.0		256	20.6
175	29	13,231	-61.4		265	20.6
150	28	14,174	-67.3		276	16.9
125	27	15,260	-72.2		287	7.6
100	27	16,561	-74.8		92	7.8
80	26	17,869	-70.1		83	21.0
70	26	18,669	-67.6		83	27.6
60	26	19,600	-64.9		90	30.5
50	24	20,722	-62.2		91	30.9
40	24	22,112	-58.6		89	30.9
30	23	23,943	-53.3		87	22.1
25	23	25,124	-51.1		89	16.5
20	23	26,583	-49.1		90	15.9
15	22	28,486	-45.3		86	19.8
10	19	31,214	-41.3		93	24.1
7	7	33,612	-39.2			
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KING SALMON, ALASKA 1000 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	8.6	90	70	3.3
1000	30	15			97	3.5
950	30	439	9.0	78	95	4.9
900	30	887	6.2	77	110	5.1
850	30	1,354	3.4	76	119	4.3
800	30	1,844	.5	77	124	3.3
750	30	2,357	- 2.5	78	137	3.1
700	30	2,904	- 5.7	74	136	3.9
650	30	3,481	- 9.2	65	127	5.1
600	30	4,097	-13.0	59	135	5.2
550	30	4,753	-16.9	56	140	5.8
500	30	5,464	-21.6	51	152	7.2
450	30	6,228	-27.0	47	172	7.0
400	30	7,072	-33.0	44	179	5.4
350	30	7,997	-39.7		180	5.6
300	30	9,036	-46.6		206	2.1
250	30	10,230	-51.6		248	6.4
200	30	11,684	-49.3		256	11.8
175	30	12,560	-48.7		258	13.6
150	30	13,573	-48.8		254	14.0
125	30	14,769	-49.1		255	12.4
100	29	16,233	-49.4		256	12.8
80	29	17,696	-49.4		250	12.4
70	29	18,566	-49.8		252	12.2
60	29	19,577	-50.2		257	11.8
50	28	20,765	-50.5		262	10.7
40	27	22,222	-50.9		268	10.3
30	27	24,094	-51.0		277	10.7
25	27	25,280	-50.6		286	11.1
20	24	26,739	-49.9		291	10.9
15	15	28,619	-49.2		284	8.2
10	6	31,235	-48.5			
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‡ KOROR, CAROLINE IS. 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	28.3	82	254	4.3
1000	30	92	27.5	81	256	5.8
950	30	541	23.7	81	251	11.8
900	30	1,018	21.0	78	255	13.0
850	30	1,513	18.5	76	266	10.3
800	30	2,032	15.6	75	275	9.9
750	30	2,576	12.7	74	279	8.4
700	30	3,155	9.8	70	293	5.8
650	30	3,764	6.5	69	318	2.7
600	30	4,422	2.5	69	346	.6
550	30	5,117	- 1.4	66	120	2.3
500	30	5,876	- 5.5	61	112	4.3
450	30	6,691	-10.2	52	112	4.9
400	30	7,596	-15.8	46	102	9.7
350	30	8,589	-22.5	41	89	14.8
300	30	9,702	-30.8	33	82	18.5
250	30	10,970	-40.8		79	23.5
200	30	12,447	-53.3		69	30.7
175	30	13,293	-60.4		67	33.2
150	30	14,236	-67.9		69	33.2
125	30	15,314	-74.3		75	28.4
100	30	15,597	-77.9		82	25.4
80	30	17,889	-72.1		85	39.6
70	30	18,683	-67.8		86	41.0
60	29	19,621	-62.5		88	32.6
50	28	20,760	-57.6		90	13.4
40	27	22,184	-54.2		280	6.0
30	26	24,044	-51.4		265	15.9
25	25	25,235	-49.8		264	18.3
20	24	26,701	-47.1		253	13.8
15	23	28,613	-45.9		254	15.3
10	18	31,342	-40.9		233	4.7
7	7	33,800	-40.0			
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KOTZEBUE, ALASKA 1007 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	4.6	80	64	5.2
1000	30	62	5.8	66	78	7.6
950	30	480	4.7	56	109	7.8
900	30	921	2.7	53	105	6.8
850	30	1,381	.3	53	111	7.4
800	30	1,866	- 2.1	54	123	5.2
750	30	2,371	- 4.5	48	137	3.7
700	30	2,917	- 7.7	47	154	5.4
650	30	3,488	-11.3	46	167	5.2
600	30	4,100	-15.0	43	182	5.8
550	30	4,748	-19.3	44	182	6.8
500	30	5,456	-23.9	41	196	7.0
450	30	6,209	-29.3	37	194	7.0
400	30	7,049	-35.2		206	9.1
350	30	7,966	-41.9		204	8.0
300	30	8,994	-49.0		215	14.0
250	30	10,173	-55.4		214	16.3
200	30	11,597	-53.2		220	14.0
175	30	12,461	-51.2		216	12.6
150	30	13,465	-50.5		224	13.2
125	30	14,656	-49.9		230	12.2
100	30	16,116	-49.8		237	13.4
80	30	17,575	-50.0		242	14.8
70	30	18,449	-50.2		245	13.4
60	30	19,452	-50.6		243	14.0
50	30	20,639	-51.1		249	14.2
40	30	22,088	-51.6		255	15.3
30	30	23,956	-51.3		261	14.2
25	30	25,141	-51.0		259	15.3
20	30	26,594	-50.7		267	16.1
15	29	28,468	-49.8		279	16.5
10	22	31,141	-47.5		278	17.5
7	12	33,490	-46.5			
5	5	35,765	-44.7			

LAKE CHARLES, LA. 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	21.7	92	55	4.5
1000	30	129	23.2	82	68	6.2
950	30	578	22.1	72	102	6.8
900	30	1,047	19.2	71	111	5.8
850	30	1,538	16.3	68	113	6.4
800	30	2,052	13.7	63	108	4.9
750	30	2,590	11.0	55	78	4.9
700	30	3,167	7.8	50	77	6.0
650	30	3,771	4.6	42	86	5.2
600	30	4,424	1.1	40	90	5.1
550	30	5,117	- 2.5	34	68	5.1
500	30	5,871	- 6.9	32	29	1.4
450	30	6,683	-12.3	30	301	1.4
400	30	7,578	-18.2		288	3.1
350	30	8,561	-25.2		264	5.4
300	30	9,663	-33.2		271	8.9
250	30	10,918	-43.0		280	12.8
200	30	12,387	-54.1		281	15.0
175	30	13,232	-59.8		285	14.4
150	30	14,183	-64.8		303	11.8
125	30	15,284	-68.9		316	9.3
100	30	16,615	-68.8		5	7.2
80	30	17,964	-64.7		51	8.5
70	30	18,790	-62.7		70	8.4
60	30	19,740	-60.2		72	9.5
50	30	20,883	-57.9		80	12.4
40	30	22,299	-55.1		90	15.9
30	30	24,152	-51.3		89	18.6
25	29	25,342	-48.9		89	19.8
20	29	26,816	-46.2		83	21.0
15	25	28,740	-42.5		81	23.1
10	11	31,542	-37.0			
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	LANDER, WYO. 833 MB				Wind		LAS VEGAS, NEV. 937 MB				Wind		* LIHUE, HAWAII 1012 MB				Wind		LITTLE ROCK, ARK. 1009 MB				Wind		MCGRATH, ALASKA 993 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,696	11.5	66	285	2.3	30	660	21.8	45	250	3.9	29	36	24.3	80	47	7.4	30	79	18.5	92	24	2.1	30	103	5.1	84	303	1.6
1000	30	131					30	91					29	141	23.8	80	48	10.5	30	151	23.0	85	67	2.9	30	40				
950	30	567					30	539					29	591	20.2	87	66	14.6	30	595	19.9	68	112	4.5	30	463	7.1	66	61	7.8
900	30	1,021					30	1,016	24.6	36	325	.8	29	1,054	17.2	85	70	15.9	30	1,060	17.4	69	102	3.1	30	906	5.6	63	85	8.0
850	30	1,520					30	1,514	21.4	17	91	.4	29	1,541	14.8	78	75	14.8	30	1,547	14.9	68	71	1.6	30	1,372	3.5	65	96	6.6
800	30	2,033	14.3	47	296	2.9	30	2,036	17.8	41	164	4.9	29	2,053	13.2	59	76	16.1	30	2,059	12.7	58	14	2.1	29	1,864	.9	60	97	6.8
750	30	2,571	11.6	46	264	4.1	30	2,577	13.6	43	172	7.0	29	2,594	11.2	35	77	15.3	30	2,595	10.1	54	360	2.5	29	2,376	- 2.2	58	107	6.6
700	30	3,150	7.9	47	256	6.6	30	3,161	9.1	46	178	8.7	29	3,168	8.8	27	75	11.5	30	3,172	7.0	48	335	3.5	29	2,926	- 5.3	53	123	5.8
650	30	3,750	3.2	50	258	10.9	30	3,765	5.0	42	185	10.7	29	3,777	5.4	26	70	9.1	30	3,774	3.7	43	338	4.1	29	3,500	- 8.7	50	136	7.6
600	30	4,401	- 1.1	49	255	15.9	30	4,420	.6	36	197	11.8	29	4,427	1.5	27	71	8.2	30	4,425	- .2	39	325	4.5	29	4,121	-12.7	50	142	6.6
550	30	5,083	- 5.4	42	256	18.3	30	5,101	- 3.8		210	11.1	29	5,116	- 2.6	26	73	7.4	30	5,110	- 4.0	31	313	5.2	29	4,773	-17.1	48	140	7.4
500	30	5,832	-10.3		253	18.6	30	5,859	- 8.8		213	11.1	29	5,873	- 7.0	25	60	4.5	30	5,864	- 8.5	30	291	5.1	29	5,489	-21.8	45	145	7.6
450	30	6,633	-15.9		257	20.2	30	6,658	-14.4		217	13.2	29	6,681	-12.6	25	54	1.7	30	6,669	-13.8		292	7.6	29	6,243	-27.0	40	146	7.8
400	30	7,514	-22.2		257	24.1	30	7,551	-21.0		223	15.2	29	7,576	-18.5	20	251	1.9	30	7,561	-20.0		292	10.1	29	7,096	-33.0	36	142	8.2
350	30	8,481	-29.7		258	26.6	30	8,523	-28.4		220	18.8	29	8,557	-25.8	20	264	5.6	30	8,538	-26.7		296	12.0	29	8,023	-39.6		145	8.0
300	30	9,561	-38.2		250	28.9	30	9,610	-36.6		221	20.8	29	9,656	-34.2	18	260	11.1	30	9,634	-34.6		300	14.0	29	9,060	-47.2		125	6.8
250	30	10,792	-46.9		255	34.4	30	10,850	-44.9		226	26.6	29	10,906	-43.7		260	17.3	30	10,884	-43.7		299	18.5	29	10,245	-54.6		137	4.5
200	30	12,242	-55.4		256	40.6	29	12,315	-53.3		232	31.5	28	12,371	-54.1		252	22.0	30	12,350	-54.2		304	20.4	29	11,677	-51.4		217	5.4
175	30	13,088	-67.8		259	40.6	29	13,167	-57.3		235	31.5	28	13,217	-59.6		251	17.7	30	13,196	-59.1		307	20.4	29	12,548	-49.9		225	6.8
150	30	14,053	-61.1		260	35.7	29	14,132	-60.9		237	27.4	28	14,169	-64.9		242	12.0	30	14,153	-63.4		306	19.8	28	13,558	-49.5		245	9.1
125	30	15,179	-63.5		265	27.2	29	15,255	-64.7		246	19.6	27	15,266	-69.5		222	6.4	30	15,263	-66.9		312	17.3	28	14,752	-49.3		233	7.4
100	30	16,546	-63.4		273	17.3	29	16,611	-65.6		226	9.1	27	16,587	-72.0		88	6.8	30	16,609	-67.0		320	9.9	28	16,214	-49.2		246	10.5
80	30	17,922	-61.7		285	9.9	29	17,974	-63.6		190	2.7	26	17,913	-68.6		83	14.4	30	17,962	-66.5		4	6.4	28	17,676	-49.6		247	11.3
70	30	18,752	-61.3		297	6.0	29	18,796	-61.7		100	3.3	26	18,716	-66.3		85	17.3	30	18,788	-62.3		30	6.2	28	18,547	-49.8		248	11.5
60	30	19,708	-60.3		322	5.2	27	19,754	-61.4		80	3.3	26	19,656	-63.5		86	21.6	29	19,742	-60.6		51	6.2	27	19,561	-50.1		252	11.3
50	30	20,848	-59.1		342	6.0	25	20,894	-57.9		77	4.3	26	20,782	-61.0		87	25.4	28	20,881	-58.2		55	5.2	27	20,749	-50.5		258	12.2
40	30	22,253	-57.0		357	5.2	22	22,313	-55.7		76	8.2	26	22,178	-58.3		89	29.1	28	22,296	-55.2		80	5.4	27	22,203	-50.7		263	12.0
30	30	24,088	-53.7		314	5.4	22	24,160	-51.9		77	4.1	25	24,004	-54.4		87	28.6	27	24,150	-51.5		82	8.0	27	24,078	-50.5		273	11.7
25	29	25,264	-51.6		314	7.6	19	25,342	-49.9		71	5.1	25	25,178	-52.1		87	28.9	27	25,339	-49.5		82	8.9	26	25,271	-50.3		279	13.4
20	29	26,721	-48.5		293	8.0	18	26,811	-47.4		79	7.8	25	26,635	-48.9		89	26.6	27	26,808	-47.2		85	9.7	24	26,719	-49.9		283	15.5
15	22	28,643	-44.9		273	6.4	11	28,712	-44.7				24	28,534	-46.1		86	23.7	23	28,719	-44.3		77	11.5	16	28,609	-49.3			
10	5	31,385	-42.2										23	31,256	-41.5		90	25.3	15	31,456	-40.7									
7													23	33,706	-37.8		91	26.8												
5													18	36,037	-34.0		94	27.8												
4													7	37,621	-31.6															

Standard pressure surface (mb.)	‡ MAJURO, MARSHALL IS. 1010 MB						MARCUS IS., N. PACIFIC 1013 MB						MEDFORD, OREG. 968 MB						MERIDA, MEXICO 1012 MB						* MIAMI, FLA. 1013 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	3	29.4	75	66	2.1	29	9	27.5	83	90	7.4	30	401	14.2	75	221	.4	30	11	22.9	97	104	4.8	30	4	24.8	92	13	1.0
1000	30	94	28.2	74	74	3.9	29	121	26.9	82	102	8.0	30	129					30	113	24.1	92	107	7.8	30	116	25.8	81	139	1.2
950	30	540	24.0	77	79	4.5	29	571	23.9	82	112	8.2	30	564	16.0	68	297	1.6	30	562	23.1	86	126	11.7	30	566	23.0	80	181	5.2
900	30	1,021	20.9	76	86	6.4	29	1,047	21.1	81	113	6.6	30	1,020	15.7	62	244	1.2	30	1,036	20.5	81	126	11.7	30	1,039	20.3	73	190	8.2
850	30	1,515	18.2	75	87	7.6	29	1,542	18.1	78	122	7.0	30	1,504	14.3	57	156	3.9	30	1,529	17.9	76	124	9.3	30	1,531	17.5	70	197	8.2
800	30	2,033	15.7	72	92	8.4	29	2,060	15.6	71	117	6.6	30	2,015	11.8	54	188	8.5	30	2,047	15.2	72	122	8.5	30	2,048	14.5	68	203	7.4
750	30	2,573	13.3	65	92	8.5	29	2,609	13.1	60	118	7.2	30	2,551	8.5	50	206	12.8	30	2,584	12.2	67	130	8.5	30	2,589	11.7	67	205	8.2
700	30	3,159	10.3	57	90	9.3	29	3,185	10.1	51	116	7.2	30	3,119	5.1	42	208	15.5	30	3,170	9.2	65	125	8.5	30	3,167	8.7	55	205	8.7
650	30	3,767	6.8	55	90	11.5	29	3,797	6.4	48	117	7.2	30	3,715	1.9	33	208	17.1	30	3,774	5.9	65	120	8.5	30	3,772	5.3	54	212	8.5
600	30	4,428	3.0	54	90	12.0	29	4,451	2.5	46	102	7.4	30	4,362	- 2.2	34	210	17.1	30	4,435	2.3	64	113	8.2	30	4,427	1.7	46	213	8.5
550	30	5,121	- .7	49	92	14.0	29	5,145	- 1.5	44	111	6.2	30	5,038	- 6.7	32	213	19.0	30	5,122	- 1.6	60	95	9.1	30	5,115	- 2.3	42	217	6.8
500	30	5,886	- 4.8	44	89	14.2	29	5,903	- 5.9	40	98	5.4	30	5,785	-11.7		215	18.8	30	5,889	- 5.9	54	92	7.2	30	5,875	- 6.7	43	230	4.3
450	30	6,705	- 9.4	40	92	13.0	29	6,718	-10.8	39	96	6.2	30	6,581	-16.9		224	18.3	30	6,701	-10.8	45	76	7.4	30	6,683	-11.5	39	241	4.1
400	30	7,612	-14.9	32	94	13.2	29	7,620	-16.6		97	7.8	30	7,460	-23.2		234	16.7	30	7,606	-16.2	40	57	6.8	30	7,586	-17.3	36	268	3.7
350	30	8,611	-21.4		98	12.6	29	8,610	-23.5		85	8.0	30	8,424	-30.6		232	22.3	30	8,597	-23.2	37	54	3.5	30	8,573	-24.2	32	267	4.5
300	30	9,729	-29.8		99	10.1	29	9,719	-31.8		63	8.4	30	9,501	-38.7		239	22.1	30	9,707	-31.3		5	1.7	30	9,678	-32.6	29	280	8.6
250	30	11,001	-40.2		108	8.5	29	10,981	-42.0		57	8.5	30	10,729	-47.4		243	23.7	30	10,970	-41.5		289	5.1	30	10,936	-42.8		278	8.4
200	30	12,484	-52.7		117	8.0	29	12,453	-53.9		45	8.4	30	12,182	-53.7		240	25.4	30	12,442	-54.1		295	9.7	30	12,401	-55.0		302	13.0
175	30	13,932	-60.0		102	5.8	29	13,298	-60.2		34	9.1	30	13,034	-56.8		239	25.1	30	13,285	-61.1		292	12.6	30	13,242	-61.4		314	15.9
150	30	14,277	-67.5		89	7.2	29	14,246	-66.4		46	11.6	30	14,006	-68.8		239	26.4	30	14,225	-68.1		305	9.5	29	14,185	-67.6		328	15.2
125	30	15,357	-74.3		98	11.7	29	15,334	-71.8		52	14.6	30	15,145	-80.9		239	22.1	30	15,104	-73.1		10	9.3	28	15,170	-72.2		339	10.7
100	30	16,643	-77.1		89	18.1	29	16,638	-74.8		56	15.0	30	16,531	-61.0		236	19.8	30	16,610	-71.6		57	12.6	28	16,589	-69.0		28	5.4
80	29	17,941	-71.9		86	33.2	28	17,947	-70.3		88	14.6	30	17,021	-40.1		232	8.4	30	17,943	-67.3		84	19.0	28	17,936	-66.2		83	8.2
70	27	18,734	-67.3		90	41.6	28	18,747	-66.7		85	14.8	30	18,756	-59.1		212	5.8	30	18,751	-65.4		82	20.6	28	18,756	-63.9		84	9.5
60	27	19,676	-61.2		93	34.8	28	19,685	-63.9		85	18.8	29	19,721	-58.5		204	3.3	30	19,695	-62.7		79	21.0	28	19,697	-61.9		81	16.1
50	25	20,827	-55.7		93	8.2	27	20,809	-61.2		87	21.4	29	20,867	-58.1		182	1.0	30	20,826	-60.0		78	28.4	28	20,833	-59.0		88	23.1
40	25	22,256	-53.0		275	8.0	27	22,204	-58.4		87	26.6	29	22,276	-56.9		24	1.2	30	22,229	-57.3		81	29.9	28	22,239	-56.4		93	25.8
30	25	24,121	-50.2		265	20.0	27	24,029	-54.3		88	29.1	29	24,108	-54.4		318	3.3	30	24,069	-52.0		86	26.2	26	24,076	-52.8		87	28.0
25	25	25,317	-48.7		265	23.5	27	25,204	-51.8		86	31.1	29	25,282	-52.1		300	4.9	29	25,257	-48.8		81	24.7	26	25,259	-50.1		90	27.8
20	20	26,799	-45.7		263	23.7	26	26,661	-48.6		86	30.9	29	26,734	-49.9		286	5.1	29	26,733	-46.0		82	23.5	26	26,726	-47.1		89	25.8
15	17	28,728	-44.2		268	23.5	26	28,568	-45.4		91	28.2	29	28,630	-46.6		275	8.7	28	28,660	-42.8		72	22.9	26	28,648	-43.3		84	26.2
10	8	31,431	-39.6				24	31,292	-41.9		82	26.6	28	31,331	-43.7		270	11.1	14	31,416	-39.5				26	31,405	-38.9		90	26.4
7							24	33,727	-39.2		80	32.2	24	33,746	-40.5		246	12.4							21	33,894	-34.8		99	23.9
5							21	36,035	-36.8				20	36,064	-38.1		251	13.0							10	36,282	-30.6			

Standard pressure surface (mb.)	* MIDLAND, TEXAS 917 MB						MONTGOMERY, ALA. 1010 MB						NANTUCKET, MASS. 1017 MB						NASHVILLE, TENN. 996 MB						N. Y. INT. AP., IDLEWILD 1019 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	874	18.0	78	86	2.1	30	61	19.0	86	52	3.9	30	14	13.7	86	14	4.3	30	177	16.1	88	65	1.7	30	5	14.3	81	345	4.7
1000	30	127					30	145	19.8	81	61	5.6	30	157	13.6	82	18	3.5	30	149					30	166	14.2	75	352	7.0
950	30	575					30	589	19.9	71	88	10.7	30	588	12.2	75	359	6.4	30	589	18.6	64	125	3.3	30	597	12.6	70	14	7.4
900	30	1,040	20.8	61	144	6.2	30	1,055	18.0	71	89	7.6	30	1,042	11.1	64	340	4.3	30	1,050	15.9	62	160	.4	30	1,052	11.1	65	357	6.4
850	30	1,533	18.3	60	173	10.9	30	1,543	15.3	67	75	5.1	30	1,519	9.8	57	283	7.2	30	1,534	13.6	58	333	3.7	30	1,528	9.6	60	316	7.4
800	30	2,051	15.1	60	154	6.0	30	2,055	13.1	54	46	3.5	30	2,022	7.6	50	270	11.5	30	2,043	11.3	50	323	5.1	30	2,030	7.6	55	295	8.9
750	30	2,593	11.9	56	117	5.4	30	2,596	10.6	53	23	3.7	30	2,547	5.1	47	263	13.6	30	2,581	9.0	44	327	6.8	30	2,559	5.1	52	288	11.1
700	30	3,170	8.7	48	91	5.6	30	3,169	7.5	49	18	4.3	30	3,112	2.4	44	260	16.5	30	3,149	6.3	39	329	7.8	30	3,121	2.7	42	283	13.8
650	30	3,777	4.9	49	77	5.8	30	3,777	4.5	42	7	3.9	30	3,701	- .9	45	257	18.5	30	3,752	3.1	38	325	7.2	30	3,718	.0	37	280	16.7
600	30	4,428	1.0	48	67	5.2	30	4,424	1.1	40	335	2.7	30	4,343	- 4.1	34	259	21.0	30	4,398	- .3		322	8.4	30	4,356	- 3.4		276	19.0
550	30	5,117	- 3.3	47	66	3.5	30	5,118	- 2.9	40	311	4.1	30	5,016	- 7.9		254	24.1	30	5,082	- 4.3		305	9.3	30	5,035	- 7.4		278	22.3
500	30	5,871	- 7.4	36	66	4.1	30	5,869	- 7.1		303	4.7	30	5,760	-12.5	37	252	28.0	30	5,833	- 9.1		308	10.1	30	5,775	-12.1		278	25.8
450	30	6,681	-12.5	31	59	1.4	30	6,685	-12.2		304	7.2	30	6,550	-17.7		247	33.6	30	6,637	-14.4		304	13.0	30	6,570	-17.4		273	28.6
400	30	7,571	-18.5	31	309	2.3	30	7,574	-18.2		299	10.7	30	7,429	-23.8		248	36.1	30	7,523	-20.2		298	16.1	30	7,446	-23.4		270	33.8
350	30	8,557	-25.2	30	286	5.4	30	8,558	-25.3		291	12.4	30	8,391	-30.7		248	40.8	30	8,499	-27.2		291	20.4	30	8,410	-30.0		269	40.6
300	30	9,658	-33.5	29	301	8.4	30	9,658	-33.7		286	14.6	30	9,468	-38.5		247	42.2	30	9,591	-36.2		280	23.7	30	9,490	-38.2		268	44.9
250	30	10,912	-42.9		286	13.0	30	10,912	-43.5		282	17.5	30	10,696	-47.8		247	48.0	30	10,836	-44.7		290	27.0	30	10,720	-47.6		268	47.6
200	29	12,381	-53.6		298	19.4	30	12,376	-55.0		286	20.6	30	12,137	-56.9		250	52.4	30	12,295	-54.9		298	32.2	30	12,166	-55.6		265	48.8
175	29	13,229	-59.1		296	19.6	30	13,220	-60.3		291	20.8	30	12,977	-59.2		256	49.9	30	13,139	-59.5		301	31.7	30	13,011	-57.3		268	47.8
150	29	14,183	-64.8		294	18.1	30	14,171	-64.7		289	19.2	30	13,941	-59.6		261	44.3	30	14,095	-63.2		304	30.1	29	13,980	-59.6		270	44.1
125	29	15,282	-69.6		297	13.6	30	15,274	-68.1		306	15.2	30	15,076	-61.4		265	33.8	30	15,209	-65.4		308	22.0	28	15,121	-60.9		272	34.2
100	29	16,605	-70.7		321	6.0	30	16,615	-67.6		320	9.1	30	16,460	-60.5		265	22.9	30	16,565	-65.9		312	15.2	28	16,507	-60.6		275	26.6
80	29	17,939	-66.6		39	7.4	30	17,966	-65.0		14	6.2	29	17,851	-59.1		270	18.8	30	17,928	-63.5		329	8.7	28	17,900	-59.0		274	16.3
70	29	18,758	-64.2		70	8.4	29	18,789	-62.6		38	4.5	29	18,692	-57.6		270	14.6	29	18,754	-62.1		341	5.8	28	18,744	-57.8		275	14.0
60	28	19,695	-62.3		81	9.7	29	19,737	-60.8		50	5.2	29	19,666	-56.3		264	12.6	28	19,706	-59.9		352	3.9	28	19,714	-56.6		273	10.9
50	28	20,826	-60.1		73	10.9	29	20,878	-58.0		70	6.8	29	20,829	-54.6		264	8.2	28	20,850	-57.9		29	2.1	28	20,874	-55.3		270	9.8
40	26	22,226	-57.2		88	13.4	28	22,296	-55.3		87	10.5	29	22,263	-52.4		246	7.8	28	22,267	-54.9		59	.6	27	22,309	-52.8		269	6.8
30	25	24,061	-53.7		83	14.0	27	24,145	-52.5		92	15.3	26	24,135	-49.4		262	4.5	28	24,120	-51.4		74	3.9	26	24,181	-49.8		271	4.5
25	24	25,239	-51.8		87	15.9	26	25,328	-50.3		92	18.1	26	25,333	-47.7		255	1.7	28	25,308	-49.5		76	6.4	23	25,387	-48.0		272	2.1
20	24	26,694	-48.7		85	16.9	21	26,803	-47.5		87	17.1	25	26,817	-45.8		313	1.0	28	26,777	-47.3		87	8.5	20	26,863	-46.1		12	1.2
15	23	28,608	-44.9		85	19.6	13	28,714	-45.6		81	17.9	25	28,743	-43.0		127	1.2	28	28,689	-44.8		83	7.8	14	28,777	-44.4		6	.6
10	21	31,339	-39.9		86	18.5							23	31,506	-38.5		259	5.2	21	31,402	-42.1		60	5.4	5	31,505	-42.0			
7	18	33,802	-36.3		96	18.5							23	33,990	-34.5		273	3.5	17	33,837	-39.0		89	7.2						
5	13	36,157	-31.6		105	14.0							5	36,309	-31.0				13	36,164	-36.7									
4	5	37,666	-30.0																											

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	NOME, ALASKA 1005 MB						NORFOLK, VA. 1018 MB						NORTH PLATTE, NEBR. 919 MB						* OAKLAND, CALIF. 1012 MB						OKLAHOMA CITY, OKLA. 972 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	7	5.0	79	30	6.4	30	9	16.8	86	14	3.9	30	848	13.8	93	121	2.5	30	6	15.1	83	2	1.2	30	392	18.7	85	135	3.7
1000	30	45			44	6.8	30	160	17.9	78	1	5.6	30	131					30	111	15.5	81	307	1.4	30	143			195	
950	30	466	5.8	66	82	7.4	30	598	16.0	73	4	8.5	30	570					30	554	17.7	56	290	4.3	30	588	20.4	72	167	8.7
900	30	907	3.5	66	102	5.8	30	1,057	13.5	72	12	8.7	30	1,028	16.0	83	190	3.5	30	1,012	19.0	34	285	3.5	30	1,055	19.1	65	195	9.1
850	30	1,370	1.3	60	109	4.0	30	1,537	11.1	71	359	7.2	30	1,515	16.4	68	220	8.4	30	1,501	17.2	29	210	5.2	30	1,544	16.3	66	221	5.2
800	30	1,856	- 1.2	57	142	4.1	30	2,042	9.2	62	326	6.6	30	2,031	15.1	55	246	8.0	30	2,015	14.6	27	195	8.0	30	2,059	13.5	61	277	3.7
750	30	2,364	- 4.0	53	142	4.1	30	2,574	7.3	53	301	8.4	30	2,575	11.9	50	270	8.5	30	2,554	11.2	31	193	12.4	30	2,594	10.8	57	332	3.3
700	30	2,910	- 6.9	53	139	3.9	30	3,142	4.9	46	288	9.7	30	3,149	7.9	51	276	9.3	30	3,130	7.7	32	194	13.4	30	3,173	7.2	58	344	4.3
650	30	3,481	-10.3	51	161	5.2	30	3,738	2.0	39	276	12.2	30	3,755	3.6	50	286	10.1	30	3,730	4.0	31	195	12.8	30	3,776	3.6	54	345	3.9
600	30	4,097	-14.1	42	168	5.6	30	4,386	- 1.4	36	273	14.6	30	4,401	- .3	47	294	13.2	30	4,383	- .2	30	199	13.6	30	4,425	- .4	50	143	3.7
550	30	4,746	-18.6	42	179	5.2	30	5,067	- 5.2		274	16.5	30	5,086	- 4.5	40	298	14.4	30	5,064	- 4.8	27	209	14.6	30	5,107	- 4.1	44	207	3.1
500	30	5,455	-23.3	38	158	6.2	30	5,818	- 9.5		270	20.0	30	5,836	- 9.2		291	14.0	30	5,818	- 9.7	28	214	16.1	30	5,863	- 8.4		318	5.1
450	30	6,208	-28.6	36	162	7.8	30	6,617	-14.8		267	19.8	30	6,647	-14.8		285	16.3	30	6,616	-15.5	28	216	17.1	30	6,667	-13.4		318	6.0
400	30	7,052	-34.4		172	9.9	30	7,506	-21.2		266	25.8	30	7,574	-21.1		286	17.3	30	7,503	-22.1	29	219	17.7	30	7,560	-19.7		316	10.3
350	30	7,972	-41.1		185	10.5	30	8,478	-28.2		269	28.4	30	8,495	-28.5		290	19.6	30	8,471	-29.4	30	226	17.1	30	8,538	-26.7		320	12.4
300	30	9,004	-48.3		195	13.4	30	9,564	-36.5		266	33.0	30	9,581	-36.9		286	22.3	30	9,553	-37.8	29	232	16.9	30	9,632	-34.9		317	15.3
250	30	10,188	-54.1		201	13.2	30	10,801	-46.0		262	38.9	30	10,816	-46.6		285	28.2	30	10,787	-46.2		231	19.8	30	10,879	-44.4		313	17.9
200	30	11,620	-51.9		213	12.6	30	12,251	-55.8		270	44.5	30	12,265	-55.6		283	34.2	29	12,244	-53.9		235	23.3	30	12,340	-54.5		300	21.0
175	30	12,489	-49.8		227	12.6	30	13,093	-59.5		269	46.0	30	13,107	-59.5		289	32.8	29	13,095	-57.2		232	23.1	30	13,185	-59.7		301	21.8
150	30	13,498	-49.6		230	12.0	30	14,050	-62.3		275	36.3	30	14,064	-62.5		291	29.5	29	14,065	-59.7		232	20.4	30	14,138	-64.3		302	21.4
125	30	14,692	-49.1		235	12.2	30	15,168	-64.3		275	27.4	30	15,182	-64.9		293	22.9	29	15,196	-62.6		233	18.5	30	15,243	-67.4		304	16.9
100	30	16,155	-49.2		244	12.6	30	16,532	-64.1		282	18.5	30	16,540	-65.0		296	17.5	26	16,566	-62.8		234	13.4	30	16,584	-67.8		311	9.3
80	30	17,618	-49.4		241	13.4	30	17,910	-61.1		292	9.5	30	17,906	-63.3		319	10.5	25	17,945	-61.6		211	6.2	30	17,933	-65.3		15	6.0
70	29	18,497	-49.6		244	14.2	29	18,752	-59.8		283	6.6	30	18,732	-62.0		333	8.7	25	18,777	-60.6		177	3.9	30	18,755	-63.1		44	6.4
60	29	19,499	-49.9		249	14.0	28	19,711	-57.8		298	3.3	30	19,685	-61.0		350	7.0	25	19,737	-59.4		112	3.1	30	19,703	-60.9		47	6.8
50	29	20,690	-50.0		253	14.4	28	20,868	-55.3		28	1.6	30	20,824	-58.9		349	4.7	24	20,880	-58.0		95	2.7	30	20,842	-58.5		55	5.8
40	29	22,145	-50.5		261	14.8	27	22,296	-52.9		89	3.3	30	22,233	-56.6		344	6.2	23	22,293	-56.4		76	3.5	30	22,254	-55.6		82	4.7
30	27	24,018	-50.7		264	15.5	25	24,166	-49.7		87	7.2	30	24,076	-52.7		304	4.7	23	24,131	-53.6		80	3.3	28	24,109	-51.7		79	6.0
25	25	25,212	-50.4		270	15.3	25	25,364	-48.0		90	8.0	29	25,258	-50.5		290	5.8	22	25,310	-51.5		54	2.9	26	25,302	-50.2		71	8.0
20	23	26,667	-49.6		269	14.2	23	26,866	-45.8		90	9.7	29	26,723	-47.6		289	6.2	22	26,768	-48.5		70	4.1	24	26,766	-47.6		76	10.3
15	17	28,589	-48.5		287	17.7	11	28,794	-43.1				27	28,626	-45.0		294	6.4	22	28,671	-46.3		70	5.8	18	28,686	-43.9		74	13.6
10	6	31,280	-47.4										25	31,354	-41.6		277	5.8	19	31,381	-42.9		100	3.7	6	31,419	-41.6			
7													24	33,793	-38.1		273	9.3	17	33,816	-38.6		127	3.7						
5													20	36,105	-35.0				13	36,121	-35.4		256	5.1						
4																			6	37,719	-36.4									

Standard pressure surface (mb.)	OLYMPIA, WASH. 1007 MB						OMAHA, NEBR. 971 MB						PEORIA, ILL. 996 MB						PITTSBURGH, PA. 970 MB						‡ PONAPE, CAROLINE IS. 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	58	12.1	91	203	1.7	30	403	15.2	90	150	3.5	30	200	13.0	90	93	1.9	30	353	10.5	82	57	1.7	30	39	29.1	77	266	.6
1000	30	118	13.4	84	188	1.2	30	147					30	168					30	170					30	85	28.4	77	239	1.0
950	30	555	14.6	70	213	.8	30	586	16.9	79	183	7.0	30	602	16.6	71	203	3.7	30	599	13.3	73	139	.6	30	533	24.3	79	208	.2
900	30	1,009	13.9	56	209	2.5	30	1,047	16.4	69	233	8.5	30	1,065	14.3	67	237	3.1	30	1,055	11.9	60	207	5.2	30	1,014	21.2	81	117	2.3
850	30	1,490	12.2	48	216	5.8	30	1,533	14.9	61	266	8.9	30	1,547	12.5	57	286	3.7	30	1,532	10.0	58	306	7.0	30	1,508	18.5	79	99	2.7
800	30	1,996	9.8	41	211	8.7	30	2,045	12.8	52	281	9.9	30	2,054	10.8	47	293	6.2	30	2,035	8.2	49	303	8.2	30	2,028	15.9	75	90	3.3
750	30	2,527	7.3	37	205	10.3	30	2,582	9.8	50	292	11.3	30	2,587	8.8	39	295	8.9	30	2,564	6.0	41	299	10.1	30	2,570	13.2	73	97	4.9
700	30	3,095	4.1	38	205	13.8	30	3,155	6.5	50	291	12.6	30	3,159	5.9	37	297	10.7	30	3,129	3.1	38	296	13.2	30	3,154	10.2	69	103	7.6
650	30	3,690	.3	41	209	16.1	30	3,751	2.9	44	292	13.0	30	3,758	2.7	37	298	13.0	30	3,721	.1	37	300	14.8	30	3,761	6.8	68	90	9.3
600	30	4,332	- 3.9	41	214	16.5	30	4,403	- 1.1	43	292	14.4	30	4,405	- 2.9		296	15.5	30	4,365	- 2.9		299	16.7	30	4,423	3.1	62	97	13.4
550	30	5,005	- 8.2	41	218	19.0	30	5,085	- 4.8	40	298	15.5	30	5,089	- 5.4		300	15.3	30	5,040	- 7.0		302	18.6	30	5,115	- .9	61	99	13.8
500	30	5,768	-12.9	37	233	19.6	30	5,837	- 9.6		300	18.1	30	5,836	-10.1		304	16.7	30	5,788	-11.6		300	21.4	30	5,881	- 4.9	55	94	16.1
450	30	6,534	-18.3		227	22.0	30	6,638	-15.0		299	19.0	30	6,632	-15.2		300	18.1	30	6,580	-17.0		299	24.1	30	6,698	- 9.3	50	95	16.3
400	30	7,415	-24.6		231	22.5	30	7,524	-21.4		298	23.5	30	7,520	-21.6		303	20.8	30	7,462	-23.1		296	27.2	30	7,608	-14.6	43	96	15.9
350	30	8,372	-31.5		232	25.6	30	8,493	-28.6		300	23.9	30	8,489	-28.7		304	23.5	30	8,426	-30.5		296	29.1	30	8,606	-21.5	38	92	15.5
300	30	9,443	-39.9		232	27.2	30	9,580	-36.8		299	27.8	30	9,574	-37.0		304	28.9	30	9,504	-38.3		295	33.8	30	9,724	-29.7		90	14.4
250	30	10,665	-48.4		228	26.8	30	10,818	-46.0		299	33.8	30	10,810	-46.1		303	34.4	30	10,734	-47.4		293	41.2	30	10,997	-40.1		77	13.2
200	30	12,110	-58.3		236	31.9	30	12,271	-55.4		297	41.2	30	12,263	-55.6		303	40.4	30	12,181	-55.4		288	45.8	29	12,479	-53.7		63	15.2
175	30	12,964	-55.6		235	33.4	30	13,115	-59.1		300	42.0	30	13,108	-58.6		301	41.0	30	13,038	-57.6		283	45.1	29	13,327	-56.9		65	15.2
150	30	13,941	-57.1		238	29.7	30	14,074	-62.2		301	36.9	30	14,071	-60.7		301	37.3	30	13,996	-59.8		283	42.5	29	14,273	-67.4		73	13.4
125	30	15,090	-58.1		237	25.3	30	15,195	-63.7		304	28.2	30	15,197	-63.2		301	29.9	30	15,130	-61.9		287	36.3	29	15,359	-74.0		90	15.9
100	30	16,494	-57.9		239	19.0	30	16,561	-63.8		306	22.0	30	16,570	-63.0		304	23.1	30	16,510	-61.7		289	25.3	29	16,639	-74.6		92	18.6
80	29	17,905	-57.2		239	11.8	30	17,934	-62.5		320	15.0	30	17,898	-61.2		313	16.1	30	17,898	-60.1		291	17.7	29	17,935	-72.1		88	21.3
70	29	18,748	-56.8		243	9.7	30	18,758	-61.5		330	12.2	30	18,780	-59.8		316	11.5	30	18,734	-58.8		293	13.0	29	18,728	-67.2		89	38.3
60	29	19,724	-56.8		255	7.2	30	19,719	-59.7		352	9.1	30	19,746	-58.5		324	7.6	30	19,704	-57.5		292	9.3	29	19,668	-61.4		89	35.0
50	29	20,880	-57.0		283	4.9	30	20,863	-57.9		360	6.2	30	20,895	-57.0		325	6.0	30	20,860	-55.7		299	6.6	29	20,810	-56.7		90	14.4
40	29	22,296	-55.9		322	3.7	29	22,278	-55.3		346	4.7	30	22,316	-54.5		321	4.7	29	22,290	-52.7		291	6.4	28	22,234	-54.1		247	8.7
30	28	24,136	-53.7		314	4.9	28	24,129	-51.8		305	4.3	29	24,175	-50.7		283	4.7	29	24,159	-49.9		263	4.7	27	24,096	-50.7		266	18.3
25	28	25,311	-51.9		313	5.1	27	25,319	-49.1		284	6.2	29	25,368	-48.8		281	6.0	28	25,357	-47.9		261	4.1	23	25,285	-49.1		242	22.1
20	25	26,773	-49.8		314	6.4	27	26,791	-46.9		274	6.6	29	26,842	-46.5		286	5.8	28	26,835	-46.2		261	3.5	23	26,756	-47.0		243	18.8
15	14	28,630	-46.6		312	8.5	24	28,696	-44.5		299	7.6	29	28,761	-44.3		289	4.9	28	28,756	-43.9		279	1.7	17	28,665	-45.0		240	21.0
10	7	31,318	-43.2				10	31,408	-41.5				27	31,502	-40.7		287	3.9	28	31,502	-39.9		283	3.3	10	31,389	-41.8			
7													24	33,948	-37.6		288	7.0	26	33,960	-37.2		288	7.8						
5													21	36,277	-34.6		287	8.0	23	36,299	-34.8									

Standard pressure surface (mb.)	PORTLAND, ME. 1018 MB						RAPID CITY, S. DAK. 907 MB						ST. CLOUD, MINN. 980 MB						ST. PAUL IS., ALASKA 1002 MB						SALEM, OREG. 1008 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	20	9.8	85	340	4.5	29	966	14.2	75	306	1.0	30	316	12.2	90	149	1.6	30	10	4.5	89	359	5.4	28	61	13.5	92	205	1.7
1000	30	165	11.3	74	4	5.1	29	132					30	145					30	25			14	5.1	28	125	14.5	85	243	1.2
950	30	594	10.2	66	355	6.4	29	569					30	580	14.1	82	233	5.6	30	444	4.3	86	27	7.0	28	563	15.6	72	328	1.0
900	30	1,042	8.6	60	339	6.0	29	1,032	15.6	69	215	1.4	30	1,033	12.9	73	259	8.5	30	883	1.9	83	45	6.4	28	1,021	15.3	59	215	2.9
850	30	1,514	6.9	56	304	7.8	29	1,519	16.0	56	234	4.7	30	1,513	11.6	62	265	10.1	30	1,343	.3	72	51	4.3	28	1,504	13.2	55	212	7.6
800	30	2,011	5.0	51	290	8.4	29	2,032	13.9	53	275	5.2	30	2,019	9.4	59	275	9.9	30	1,828	- 1.5	61	53	3.3	28	2,012	11.4	47	209	10.3
750	30	2,535	3.0	48	277	12.2	29	2,569	10.8	52	274	8.9	30	2,551	7.1	55	279	11.1	30	2,341	- 4.0	56	65	2.1	28	2,547	8.4	47	208	13.2
700	30	3,092	.5	44	277	14.4	29	3,145	7.4	48	284	10.1	30	3,117	4.2	50	285	13.0	30	2,882	- 6.9	52	76	1.9	28	3,116	5.0	40	210	15.2
650	30	3,677	- 2.6	44	274	15.9	29	3,746	3.0	50	286	12.4	30	3,713	1.0	47	291	14.8	30	3,457	-10.2	50	96	1.6	28	3,714	1.7	39	209	16.5
600	30	4,315	- 6.2	47	270	19.0	29	4,394	- 1.3	47	285	14.4	30	4,357	- 2.8	45	293	17.7	30	4,070	-13.6	46	145	1.4	28	4,358	- 2.3	37	211	18.3
550	30	4,984	-10.0	45	263	24.7	29	5,072	- 5.6	39	278	16.5	30	5,033	- 6.7	41	297	19.4	30	4,721	-17.6	38	283	1.6	28	5,035	- 6.7		215	18.3
500	30	5,721	-14.4	42	260	30.5	29	5,822	-10.6		278	19.0	30	5,780	-11.4	40	297	21.6	30	5,435	-22.3	37	239	4.3	28	5,781	-11.9		219	19.0
450	30	6,505	-19.7	37	260	32.2	29	6,617	-15.7		278	21.6	30	6,572	-16.9	38	298	24.5	30	6,197	-27.7	37	264	4.3	28	6,574	-17.3		227	21.4
400	30	7,379	-25.8		257	35.9	29	7,503	-21.9		277	22.9	30	7,455	-23.2		298	28.4	30	7,038	-33.6		253	5.2	28	7,453	-23.6		237	23.1
350	30	8,333	-32.6		256	41.0	29	8,471	-29.2		275	26.8	30	8,418	-30.8		298	30.1	30	7,962	-40.1		247	6.4	28	8,415	-30.8		228	24.7
300	30	9,402	-40.0		252	48.2	29	9,554	-37.7		274	32.4	30	9,494	-39.1		296	32.4	30	8,999	-46.4		261	9.1	28	9,490	-39.0		226	28.0
250	30	10,624	-48.4		251	50.5	29	10,786	-47.1		274	35.5	30	10,718	-48.7		297	38.3	30	10,196	-50.8		265	13.0	28	10,717	-47.6		236	31.1
200	30	12,067	-55.5		253	50.9	29	12,234	-55.6		275	41.8	30	12,159	-56.2		298	47.8	30	11,648	-49.9		257	15.5	28	12,166	-54.6		227	33.8
175	30	12,914	-56.8		257	46.6	29	13,079	-58.3		280	40.8	30	13,001	-58.9		297	47.6	29	12,523	-49.0		257	18.6	28	13,016	-56.7		236	34.2
150	30	13,884	-57.6		263	39.8	29	14,043	-61.0		279	37.3	30	13,965	-60.3		299	47.8	29	13,535	-48.7		258	19.6	28	13,989	-58.3		237	32.2
125	30	15,036	-58.8		262	33.2	29	15,170	-63.0		282	30.1	30	15,009	-61.3		299	38.3	29	14,733	-48.9		258	17.1	28	15,130	-59.9		239	26.6
100	30	16,437	-58.1		267	25.8	29	16,542	-63.0		286	23.1	29	16,483	-61.3		301	29.9	29	16,197	-50.1		248	16.9	28	16,525	-59.3		236	17.5
80	30	17,845	-57.1		270	17.7	29	17,920	-61.5		293	15.2	29	17,870	-60.5		306	23.1	29	17,660	-49.5		253	14.4	28	17,926	-58.6		227	11.5
70	30	18,694	-56.0		270	14.4	29	18,754	-61.0		299	12.6	29	18,705	-59.6		309	18.8	29	18,543	-49.7		252	12.8	28	18,770	-57.9		218	8.2
60	30	19,676	-55.2		264	11.7	29	19,709	-59.9		316	10.3	29	19,670	-58.6		314	15.2	29	19,562	-49.9		247	12.8	28	19,738	-57.6		242	4.7
50	29	20,840	-53.7		264	11.1	29	20,851	-58.7		318	8.0	29	20,819	-57.3		319	13.4	28	20,735	-50.0		252	11.7	28	20,889	-57.5		276	1.4
40	28	22,283	-51.5		253	8.5	29	22,257	-57.1		317	6.6	29	22,234	-55.9		314	9.5	25	22,198	-50.1		256	10.5	27	22,306	-56.8		5	2.9
30	25	24,168	-48.6		249	9.5	29	24,092	-53.5		304	8.5	29	24,070	-52.7		304	8.2	22	24,076	-50.0		266	11.8	27	24,141	-53.7		337	4.0
25	21	25,367	-46.8		249	9.7	29	25,272	-51.0		298	9.0	27	25,258	-50.9		286	9.7	19	25,261	-49.8		282	11.1	27	25,317	-52.0		419	4.0
20	15	26,863	-45.2		250	7.8	28	26,728	-48.6		284	11.3	27	26,720	-48.2		281	13.2	17	26,727	-40.5		279	10.7	26	26,762	-49.5		396	6.2
15							23	28,617	-45.8		277	17.5	27	28,630	-45.1		279	14.4	11	28,620	-49.2				24	28,650	-46.4		207	8.0
10							6	31,324	-42.1				16	31,345	-41.9									8	31,312	-43.1			
7													5	33,729	-40.4														

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SALT LAKE CITY, UTAH — 874 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,288	14.1	71	150	7.2
1000	30	131				
950	30	576				
900	30	1,041				
850	30	1,523	18.7	50	163	9.3
800	30	2,043	16.9	42	177	10.7
750	30	2,591	13.4	43	196	8.2
700	30	3,167	9.1	47	217	10.1
650	30	3,775	4.6	50	232	11.5
600	30	4,424	- .1	52	245	11.3
550	30	5,112	- 5.1	48	243	13.6
500	30	5,857	-10.0	43	234	14.2
450	30	6,665	-15.1	33	239	16.1
400	30	7,544	-21.6		246	18.3
350	30	8,513	-29.0		250	21.0
300	30	9,597	-37.4		243	24.3
250	30	10,834	-45.7		243	27.6
200	30	12,292	-53.9		245	28.4
175	30	13,142	-57.5		246	27.4
150	30	14,107	-61.1		249	26.2
125	30	15,232	-63.4		255	21.2
100	30	16,599	-64.1		255	13.6
80	30	17,971	-62.5		264	6.0
70	29	18,808	-61.7		283	1.9
60	28	19,755	-60.6		18	2.5
50	28	20,894	-59.2		28	2.5
40	25	22,299	-57.2		338	2.1
30	24	24,139	-53.6		288	3.1
25	21	25,335	-50.9		298	3.9
20	19	26,782	-49.3		282	6.2
15	16	28,677	-46.4		289	5.1
10						
7						
5						

SAN ANTONIO, TEXAS — 987 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	243	22.1	81	6	2.7
1000	30	129				
950	30	579	21.7	75	123	2.3
900	30	1,046	19.2	69	124	5.6
850	30	1,537	16.5	68	95	6.0
800	30	2,052	13.9	64	73	5.6
750	30	2,594	11.1	55	60	7.0
700	30	3,168	8.0	50	54	7.6
650	30	3,774	4.7	46	55	7.6
600	30	4,426	1.2	41	58	7.2
550	30	5,114	- 2.8	36	58	4.5
500	30	5,873	- 6.7		16	3.9
450	30	6,684	-11.7		7	2.7
400	30	7,582	-18.0		2	6.6
350	30	8,566	-24.9		296	5.4
300	30	9,669	-33.0		300	8.5
250	30	10,925	-43.0		297	12.0
200	30	12,393	-54.2		302	14.6
175	30	13,238	-59.9		299	13.2
150	30	14,188	-65.4		315	13.6
125	30	15,284	-70.1		319	10.7
100	30	16,602	-71.7		355	7.8
80	30	17,929	-67.5		39	9.3
70	29	18,743	-64.8		71	10.9
60	28	19,683	-62.0		81	12.0
50	28	20,817	-59.5		70	14.8
40	27	22,218	-57.0		86	18.5
30	26	24,057	-52.9		84	20.8
25	25	25,236	-50.8		87	22.9
20	24	26,695	-48.2		84	23.1
15	18	28,596	-44.5		70	22.1
10						
7						
5						

SAN DIEGO, CALIF. — 996 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	124	19.4	84	19	1.6
1000	30	93				
950	30	542	22.1	59	32	1.9
900	30	1,009	22.9	40	121	1.2
850	30	1,505	20.2	34	158	4.1
800	30	2,025	17.1	35	160	5.8
750	30	2,568	13.5	36	162	8.2
700	30	3,150	9.7	36	165	9.9
650	30	3,756	5.8	34	171	10.9
600	30	4,412	1.5		179	11.5
550	30	5,099	- 3.0		184	11.1
500	30	5,856	- 8.1		196	11.1
450	30	6,660	-13.7		200	12.6
400	30	7,552	-20.4		209	13.6
350	30	8,527	-27.8		209	15.7
300	30	9,617	-36.0		220	17.9
250	30	10,862	-44.2		229	25.6
200	30	12,331	-52.9		230	30.5
175	30	13,183	-57.5		234	31.7
150	30	14,147	-62.1		236	28.9
125	30	15,263	-66.3		238	20.6
100	29	16,608	-67.7		227	7.0
80	29	17,959	-65.1		120	4.1
70	29	18,781	-63.5		93	7.6
60	29	19,726	-61.4		93	10.1
50	27	20,865	-58.9		98	10.7
40	27	22,275	-55.8		89	10.9
30	27	24,119	-52.5		83	11.3
25	24	25,299	-50.8		89	14.0
20	20	26,768	-48.3		91	15.3
15	14	28,660	-45.0		84	14.6
10						
7						
5						

SAN JUAN, P. R. — 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	6	25.5	88	120	2.9
1000	30	122	25.4	85	106	8.7
950	30	576	22.9	82	101	14.8
900	30	1,044	20.1	79	100	15.3
850	30	1,536	17.5	75	96	16.7
800	30	2,053	14.7	69	98	14.0
750	30	2,594	12.1	59	103	11.8
700	30	3,174	9.1	51	102	12.6
650	30	3,780	5.4	53	99	9.9
600	30	4,435	1.5	47	107	8.5
550	30	5,123	- 2.7	44	108	8.0
500	30	5,881	- 7.0	38	97	7.2
450	30	6,688	-12.1	36	97	6.2
400	30	7,586	-18.3	35	114	3.1
350	30	8,569	-25.4		133	2.7
300	30	9,669	-33.8		179	.6
250	30	10,920	-43.8		269	4.3
200	30	12,381	-55.4		278	8.7
175	30	13,222	-61.0		280	8.5
150	30	14,167	-66.4		290	6.2
125	30	15,262	-69.2		43	2.3
100	30	16,585	-71.3		77	11.3
80	30	17,913	-68.2		83	19.8
70	30	18,725	-65.7		86	25.1
60	30	19,662	-62.9		88	26.6
50	29	20,789	-60.2		90	28.0
40	28	22,192	-56.2		92	27.2
30	27	24,043	-51.0		91	23.9
25	25	25,231	-48.3		97	17.9
20	25	26,707	-46.3		94	15.3
15	23	28,627	-42.9		81	13.6
10	20	31,384	-39.1		81	18.3
7	16	33,870	-34.7		90	27.2
5	7	36,208	-32.5			

SANTA MONICA, CALIF. — 1007 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	20.0	79	64	2.7
1000	30	98	20.6	76	67	2.3
950	30	544	23.2	53	82	4.5
900	30	1,016	22.7	36	104	4.1
850	30	1,510	19.9	36	152	5.1
800	30	2,030	16.6	36	159	7.0
750	30	2,575	13.1	33	161	8.7
700	30	3,152	9.3	35	168	7.8
650	30	3,758	5.5		176	7.6
600	30	4,411	1.2		191	8.4
550	30	5,100	- 3.6		202	8.7
500	30	5,852	- 8.7		197	9.5
450	30	6,652	-14.3		202	10.7
400	30	7,543	-21.0		209	11.7
350	30	8,515	-28.6		205	16.3
300	30	9,601	-36.7		214	20.8
250	30	10,842	-44.9		225	25.4
200	30	12,305	-53.5		232	29.1
175	30	13,156	-57.6		232	29.5
150	30	14,118	-62.2		235	27.0
125	30	15,235	-65.3		233	21.6
100	30	16,585	-66.7		227	10.1
80	30	17,939	-65.0		125	3.1
70	30	18,761	-63.2		91	5.8
60	30	19,709	-61.1		95	9.3
50	30	20,847	-59.2		93	9.5
40	29	22,250	-56.6		80	10.3
30	29	24,090	-53.2		84	9.7
25	28	25,767	-51.0		80	14.0
20	25	26,728	-48.4		87	13.0
15	19	28,630	-46.1		92	13.8
10	10	31,334	-41.7			
7						
5						

SAULT STE. MARIE, MICH. — 993 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	221	8.6	92	54	3.3
1000	30	164				
950	30	590	9.8	76	222	2.1
900	30	1,039	7.7	73	274	6.4
850	30	1,510	6.9	56	288	9.5
800	30	2,007	5.8	48	289	12.4
750	30	2,531	3.6	42	289	15.2
700	30	3,091	.9	41	290	17.5
650	30	3,681	- 2.2	40	290	20.0
600	30	4,315	- 5.7	39	293	23.7
550	30	4,988	- 9.8	38	296	25.8
500	30	5,722	-14.2		295	28.4
450	30	6,505	-19.6	35	298	30.9
400	30	7,378	-25.7	37	296	35.9
350	30	8,331	-32.7	35	298	40.0
300	30	9,399	-40.6		300	42.2
250	30	10,616	-49.6		300	46.6
200	30	12,049	-56.9		299	48.0
175	30	12,893	-57.3		298	46.4
150	30	13,866	-57.9		296	45.1
125	30	15,014	-58.3		294	39.0
100	30	16,419	-57.9		296	31.5
80	29	17,830	-57.2		297	23.7
70	29	18,680	-56.3		297	20.6
60	29	19,656	-56.2		297	17.1
50	29	20,816	-55.4		297	14.6
40	29	22,244	-53.7		299	11.8
30	29	24,106	-50.9		284	11.5
25	29	25,297	-49.2		278	10.9
20	29	26,769	-47.1		270	13.4
15	28	28,676	-44.4		270	16.5
10	27	31,417	-40.8		270	18.3
7	27	33,862	-38.2		274	21.0
5	24	36,195	-34.8			

SHEMYA, ALASKA — 1001 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	8.2	91	28	2.5
1000	30	47			56	2.1
950	30	465	5.7	87	8	1.2
900	30	910	3.4	85	298	2.1
850	30	1,373	1.7	80	308	2.7
800	30	1,860	- .5	77	305	3.7
750	30	2,376	- 2.6	68	310	4.7
700	30	2,919	- 5.6	63	292	6.8
650	30	3,495	- 8.6	50	274	9.3
600	30	4,115	-12.0	47	272	9.1
550	30	4,770	-16.2	47	270	10.7
500	30	5,487	-21.0	48	270	13.0
450	30	6,248	-26.5	44	270	16.3
400	30	7,098	-32.6	45	266	18.1
350	30	8,025	-39.5		260	20.2
300	30	9,063	-47.0		261	25.6
250	30	10,258	-50.6		260	30.3
200	30	11,714	-49.8		267	36.3
175	30	12,586	-50.1		267	35.0
150	30	13,593	-50.4		267	32.4
125	30	14,781	-50.6		264	28.7
100	30	16,236	-50.8		259	21.8
80	29	17,682	-50.7		256	17.3
70	29	18,550	-50.9		245	14.8
60	28	19,557	-51.1		247	13.8
50	27	20,742	-51.1		239	12.4
40	26	22,196	-50.6		241	9.9
30	24	24,073	-50.2		246	6.8
25	22	25,271	-49.7		248	7.4
20	20	26,735	-49.3		243	6.4
15	14	28,613	-48.1		224	5.8
10						
7						
5						

*** SHREVEPORT, LA. — 1008 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	79	21.4	88	48	3.3
1000	30	148	21.8	82	65	4.3
950	30	597	21.3	67	123	6.0
900	30	1,063	18.7	66	118	4.7
850	30	1,552	15.7	67	81	2.3
800	30	2,065	13.4	55	55	3.9
750	30	2,605	10.4	53	57	5.2
700	30	3,177	7.1	51	43	4.1
650	30	3,782	3.5	46	41	3.3
600	30	4,429	.0	36	17	1.9
550	30	5,115	- 3.6	29	345	1.2
500	30	5,868	- 8.1	25	297	3.1
450	30	6,674	-13.4	25	283	4.1
400	30	7,565	-19.5	25	284	5.6
350	30	8,544	-26.6	22	288	8.4
300	30	9,639	-34.7	22	296	11.7
250	30	10,887	-43.8		301	14.0
200	30	12,352	-54.3		303	16.7
175	30	13,196	-59.9		305	17.7
150	30	14,148	-64.5		299	15.7
125	30	15,251	-68.6		307	12.2
100	30	16,584	-69.0		339	8.5
80	29	17,929	-65.6		38	6.6
70	28	18,752	-63.4		59	7.0
60	28	19,694	-61.2		69	8.4
50	28	20,832	-58.8		80	9.3
40	28	22,241	-56.0		76	10.9
30	28	24,084	-52.6		83	13.6
25	26	25,272	-50.4		86	15.5
20	25	26,735	-47.7		84	16.7
15	25	28,647	-44.7		82	19.8
10	25	31,386	-40.0		88	16.9
7	20	33,856	-36.2		108	12.0
5	5	36,217	-32.6			

SPOKANE, WASH. — 932 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	722	12.8	66	130	3.5
1000	30	119				
950	30	557				
900	30	1,015	17.1	52	183	5.2
850	30	1,501	15.3	45	210	7.8
800	30	2,012	12.0	44	224	7.6
750	30	2,545	8.3	47	239	9.5
700	30	3,116	4.6	46	238	12.2
650	30	3,709	.6	44	240	15.0
600	30	4,353	- 3.5	43	242	16.5
550	30	5,031	- 7.6	37	242	18.1
500	30	5,772	-12.4	37	243	19.6
450	30	6,562	-17.8	36	238	22.3
400	30	7,439	-24.2	35	238	22.3
350	30	8,398	-31.6		242	24.3
300	30	9,469	-40.2		242	28.2
250	30	10,689	-48.7		240	32.1
200	30	12,133	-54.5		246	33.4
175	30	12,984	-55.9		248	33.0
150	30	13,962	-57.5		248	30.7
125	30	15,107	-59.2		250	26.4
100	30	16,505	-58.9		254	21.4
80	30	17,908	-58.1		261	14.6
70	30	18,747	-57.9		269	11.3
60	30	19,721	-57.7		280	8.2
50	30	20,872	-57.4		299	7.0
40	30	22,285	-56.4		320	5.2
30	30	24,122	-53.6		313	6.4
25	30	25,300	-51.8		310	7.4
20	27	26,757	-48.9		291	9.7
15	14	28,643	-46.0		280	16.1
10						
7						
5						

SWAN ISLAND, W. I. — 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	10	27.4	84	134	9.3
1000	30	96	27.0	83	127	9.9
950	30	544	24.1	81	127	12.2
900	30	1,022	21.3	78	127	13.8
850	30	1,516	19.5	74	121	11.8
800	30	2,035	15.7	69	127	12.4
750	30	2,576	12.8	65	122	12.6
700	30	3,158	9.5	61	126	11.7
650	30	3,767	5.9	60	124	11.5
600	30	4,421	2.3	60	123	10.7
550	30	5,115	- 1.7	55	114	9.5
500	30	5,873	- 6.0	52	112	8.4
450	30	6,588	-10.9	51	104	8.4
400	30	7,587	-16.6	48	92	6.8
350	30	8,578	-23.3	41	66	4.5
300	30	9,687	-31.5	35	42	7.0
250	30	10,950	-41.7		15	8.5
200	30	12,421	-54.3		8	10.3
175	30	13,263	-61.4		356	11.1
150	30	14,202	-68.8		[illegible]	13.4
125	30	15,275	-74.8		25	11.5
100	30	16,578	-72.8		74	15.5
80	30	17,899	-69.1		87	23.5
70	30	18,706	-66.7		91	25.3
60	30	19,641	-64.0		88	27.0
50	30	20,764	-61.5		89	29.3
40	30	22,164	-56.7		89	24.9
30	27	24,015	-51.6		90	15.9
25	27	25,205	-49.1		80	13.0
20	26	26,678	-46.6		76	12.2
15	13	28,579	-42.7		77	16.1
10						
7						
5						

TAMPA, FLA. — 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	8	23.0	93	70	6.4
1000	30	124	23.8	86	75	7.8
950	30	570	22.1	77	97	7.6
900	30	1,043	19.5	75	107	5.8
850	30	1,534	16.6	72	123	4.3
800	30	2,049	13.7	71	155	3.9
750	30	2,586	10.8	68	192	3.9
700	30	3,164	8.0	58	200	3.5
650	30	3,770	5.0	47	217	4.1
600	30	4,423	1.8	40	241	3.9
550	30	5,111	- 2.2	38	264	3.5
500	30	5,872	- 6.7	37	261	5.1
450	30	6,680	-11.8	33	268	6.0
400	30	7,582	-17.8	33	276	6.0
350	30	8,566	-25.0		263	9.3
300	30	9,667	-33.3		259	11.3
250	30	10,920	-43.2		268	14.0
200	30	12,382	-55.0		277	18.1
175	30	13,222	-61.3		281	19.6
150	30	14,164	-67.2		289	16.5
125	30	15,251	-70.8		311	10.1
100	30	16,575	-68.9		353	4.5
80	30	17,920	-65.6		74	5.8
70	30	18,740	-63.3		76	6.8
60	30	19,688	-60.8		78	12.4
50	30	20,826	-59.0		85	17.3
40	29	22,233	-56.0		90	21.4
30	27	24,084	-51.7		89	23.7
25	27	25,272	-49.4		88	21.2
20	23	26,726	-46.5		83	22.3
15	10	28,649	-42.6			
10						
7						
5						
4						

*** TATOOSH IS., WASH — 1011 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	13.4	92	93	5.4
1000	30	119	14.5	83	94	5.8
950	30	555	14.1	67	168	3.5
900	30	1,010	12.3	60	204	6.4
850	30	1,487	10.1	53	204	7.6
800	30	1,989	7.9	49	210	9.3
750	30	2,516	5.5	45	211	13.0
700	30	3,081	2.4	44	214	15.3
650	30	3,671	- 1.2	45	218	19.0
600	30	4,310	- 4.9	45	221	21.0
550	30	4,983	- 9.3	46	224	20.8
500	30	5,720	-14.1	42	223	22.3
450	30	6,505	-19.2	41	227	23.5
400	30	7,378	-25.5	41	227	26.0
350	30	8,332	-32.8	41	228	27.2
300	30	9,399	-41.0		231	30.1
250	30	10,614	-49.9		238	32.2
200	30	12,052	-55.1		239	33.0
175	29	12,906	-56.3		239	34.0
150	29	13,882	-57.1		235	33.0
125	29	15,032	-58.1		237	28.2
100	29	16,437	-57.8		239	20.6
80	29	17,847	-57.0		243	16.1
70	29	18,694	-56.7		248	15.0
60	29	19,669	-56.8		259	10.9
50	29	20,823	-57.0		270	8.0
40	29	22,237	-56.4		290	5.8
30	29	24,068	-54.9		315	6.6
25	29	25,237	-53.6		326	6.4
20	27	26,689	-51.2		314	7.6
15	27	28,570	-48.3		296	8.9
10	23	31,266	-44.1		276	13.4
7	21	33,705	-39.7		275	16.5
5	17	36,039	-36.0		257	13.6
4	8	37,633	-33.2			

TOPEKA, KANS. — 986 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	269	16.9	86	107	3.3
1000	30	149				
950	30	588	18.7	72	183	5.8
900	30	1,054	17.5	66	221	6.4
850	30	1,542	15.4	62	264	6.4
800	30	2,054	13.0	52	279	7.0
750	30	2,589	10.2	49	286	8.0
700	30	3,165	6.8	42	287	7.6
650	30	3,765	2.9	38	289	8.2
600	30	4,415	- .9	34	292	9.1
550	30	5,099	- 4.5		295	9.7
500	30	5,850	- 9.0		302	10.5
450	30	6,654	-14.6		308	10.7
400	30	7,541	-21.0		301	12.6
350	30	8,514	-27.8		303	17.5
300	30	9,603	-36.0		302	21.2
250	30	10,847	-45.4		299	25.1
200	30	12,301	-54.8		297	32.6
175	30	13,144	-59.1		297	32.4
150	30	14,104	-62.7		299	29.7
125	30	15,218	-65.6		302	21.2
100	30	16,572	-65.5		306	14.6
80	30	17,937	-63.6		321	9.7
70	30	18,762	-62.1		329	8.5
60	30	19,717	-60.3		346	6.8
50	30	20,858	-58.4		359	5.2
40	30	22,272	-55.3		335	3.7
30	30	24,123	-51.9		324	2.5
25	27	25,314	-49.4		310	1.9
20	23	26,760	-47.1		278	3.7
15	12	28,695	-44.7			
10						
7						
5						
4						

‡ TRUK, CAROLINE IS. — 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	2	28.5	80	234	3.1
1000	30	89	27.7	80	235	3.5
950	30	537	24.2	82	244	5.4
900	30	1,016	21.5	81	245	4.7
850	30	1,512	18.6	79	244	2.5
800	30	2,032	16.1	77	220	2.5
750	30	2,578	13.5	73	151	1.7
700	30	3,159	10.4	70	128	4.1
650	30	3,771	6.7	69	125	6.0
600	30	4,428	2.8	69	113	10.9
550	29	5,124	- 1.0	67	104	11.3
500	29	5,885	- 5.0	60	98	12.0
450	29	6,702	- 9.5	51	95	13.6
400	29	7,610	-14.7	41	102	12.4
350	29	8,608	-21.5		99	12.2
300	29	9,727	-29.7		95	15.7
250	29	11,000	-40.2		81	17.9
200	29	12,481	-52.8		79	19.8
175	29	13,329	-60.0		80	18.6
150	29	14,275	-67.6		80	20.6
125	28	15,351	-74.3		80	18.1
100	28	16,637	-76.9		86	21.6
80	28	17,939	-70.8		92	31.9
70	28	18,737	-66.3		95	36.9
60	28	19,684	-61.1		95	32.1
50	28	20,829	-56.6		98	17.3
40	28	22,257	-52.8		318	2.1
30	28	24,125	-50.1		265	10.5
25	28	25,321	-48.0		272	12.8
20	28	26,799	-46.1		269	11.7
15	28	28,718	-44.3		275	10.5
10	20	31,437	-41.2		272	9.5
7	7	33,845	-39.6			
5						
4						

TUCSON, ARIZ. — 923 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	789	23.0	53	144	7.0
1000	30	85				
950	30	533				
900	30	1,012	24.8	45	130	8.9
850	30	1,512	22.2	44	120	8.9
800	30	2,036	18.6	47	122	10.3
750	30	2,584	14.6	51	125	10.3
700	30	3,167	10.3	54	137	9.7
650	30	3,776	5.8	51	132	8.2
600	30	4,430	1.2	45	136	5.6
550	30	5,119	- 3.0		132	3.7
500	30	5,874	- 7.8		134	2.7
450	30	6,682	-13.4		140	3.5
400	30	7,574	-19.4		209	5.1
350	30	8,552	-26.6		218	9.3
300	30	9,648	-34.5		226	14.0
250	29	10,900	-43.1		239	19.4
200	29	12,373	-52.7		247	27.8
175	29	13,224	-58.4		248	26.4
150	29	14,181	-63.7		247	23.9
125	29	15,285	-68.6		257	15.5
100	29	16,614	-70.1		276	3.3
80	29	17,953	-66.2		77	5.6
70	29	18,777	-63.9		75	8.9
60	28	19,716	-61.7		82	11.8
50	28	20,852	-59.2		83	12.6
40	28	22,260	-56.1		88	12.6
30	28	24,103	-52.7		88	14.6
25	28	25,285	-50.3		87	15.2
20	27	26,748	-47.7		84	15.5
15	25	28,658	-44.7		81	16.5
10	22	31,399	-38.9		87	14.0
7	12	33,880	-34.2		107	11.3
5	6	36,204	-31.8			
4						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SEPTEMBER 1963

Standard pressure surface (mb.)	*2/WAKE IS., PACIFIC AREA 1013 MB						WASHINGTON, D. C. 1010 MB						WINNEMUCCA, NEV. 870 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	5	28.0	80	81	8.0	30	84	11.1	92	348	2.5	30	1,310	10.3	96	135	2.5
1000	30	119	27.0	81	85	11.7	30	167	13.3	84	357	3.7	30	129				
950	30	570	23.3	83	92	15.5	30	603	14.0	71	358	5.4	30	565				
900	30	1,043	20.5	74	95	15.2	30	1,056	11.9	68	349	6.4	30	1,026				
850	30	1,536	17.7	72	96	14.6	30	1,533	10.4	61	331	6.4	30	1,508	16.9	43	117	1.9
800	30	2,053	15.2	66	93	13.0	30	2,037	8.5	55	318	8.4	30	2,024	15.5	40	202	3.7
750	30	2,595	12.7	58	89	12.4	30	2,568	6.2	50	299	8.9	30	2,566	11.8	40	218	7.0
700	30	3,177	9.8	51	84	11.5	30	3,132	3.9	44	299	10.5	30	3,141	7.5	42	213	9.3
650	30	3,785	6.3	47	84	11.3	30	3,729	1.2	44	294	12.4	30	3,743	3.2	43	216	11.8
600	30	4,443	2.7	40	86	10.1	30	4,372	- 2.1	42	293	14.0	30	4,391	- 1.2	42	215	14.2
550	30	5,138	- 1.5	34	78	9.5	30	5,054	- 6.2	36	292	17.1	30	5,071	- 6.3	43	219	14.8
500	30	5,895	- 6.0	29	71	8.7	30	5,798	-10.8		286	19.8	30	5,818	-10.8	32	228	16.3
450	30	6,705	-11.2	29	71	8.2	30	6,595	-16.2		283	24.9	30	6,615	-16.4		231	19.2
400	30	7,606	-17.1	29	64	8.7	30	7,478	-21.8		280	25.6	30	7,496	-22.8		229	20.4
350	30	8,594	-24.3	28	58	8.2	30	8,446	-28.9		273	30.1	30	8,460	-30.4		228	22.3
300	30	9,698	-32.9	26	51	6.4	30	9,530	-37.3		274	32.1	30	9,536	-38.9		226	22.3
250	30	10,954	-43.0		29	6.0	30	10,764	-46.8		274	37.7	30	10,762	-47.9		228	23.3
200	30	12,419	-56.8		343	7.0	30	12,214	-55.3		276	42.9	30	12,209	-55.1		234	27.4
175	28	13,260	-60.7		360	7.6	30	13,059	-58.5		274	39.6	30	13,056	-58.0		234	26.2
150	27	14,206	-66.8		10	6.2	30	14,021	-61.0		276	38.5	30	14,019	-61.3		233	25.4
125	26	15,291	-71.8		50	8.0	30	15,149	-62.6		280	29.5	30	15,144	-63.1		237	21.4
100	25	16,598	-73.5		76	15.2	30	16,522	-63.0		286	22.0	30	16,513	-63.8		230	12.0
80	25	17,912	-70.0		85	24.5	30	17,903	-60.8		282	14.2	30	17,885	-62.4		233	7.2
70	23	18,712	-67.3		89	26.6	29	18,744	-59.8		280	10.7	30	18,720	-60.9		204	3.1
60	22	19,646	-64.3		90	28.2	29	19,704	-58.2		282	8.2	29	19,675	-60.4		148	1.4
50	21	20,770	-61.5		87	29.5	29	20,856	-56.1		288	5.2	28	20,810	-59.7		56	1.7
40	21	22,164	-58.0		86	32.4	29	22,284	-53.5		264	5.1	28	22,211	-57.9		51	3.3
30	21	23,995	-54.4		85	29.7	29	24,149	-50.2		255	2.9	27	24,047	-54.1		327	3.1
25	20	25,168	-52.0		88	29.1	27	25,341	-48.8		252	2.1	27	25,223	-51.8		287	3.3
20	20	26,626	-48.1		92	26.8	25	26,813	-46.9		254	2.7	26	26,677	-48.6		279	5.6
15	19	28,533	-44.9		89	26.4	12	28,739	-44.6				20	28,556	-45.8		268	13.2
10	16	31,252	-41.1		87	28.6												
7	13	33,692	-37.7		90	29.7												
5	10	36,016	-33.5															

Standard pressure surface (mb.)	WINSLOW, ARIZ. 854 MB						YAKUTAT, ALASKA 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	1,492	14.9	74	173	2.9	30	12	9.7	98	98	3.3
1000	30	130					30	52			104	4.7
950	30	575					30	475	9.3	82	116	11.5
900	30	1,040					30	927	6.7	82	128	11.7
850	30	1,534	15.7	69	167	2.7	30	1,395	4.0	81	132	11.7
800	30	2,053	17.8	44	194	4.5	30	1,885	1.0	82	141	12.0
750	30	2,598	14.2	48	198	7.2	30	2,397	- 1.9	77	153	10.9
700	30	3,181	9.9	50	197	8.5	30	2,949	- 4.9	73	161	11.2
650	30	3,789	5.1	53	192	9.1	30	3,523	- 8.0	66	168	11.4
600	30	4,441	.8	40	196	8.2	30	4,146	-11.7	63	176	11.6
550	30	5,128	- 3.3		220	8.0	30	4,803	-15.9	56	182	14.6
500	30	5,882	- 8.1		225	8.4	30	5,522	-20.8	51	181	15.3
450	30	6,688	-13.7		242	7.8	30	6,284	-26.2	51	189	17.9
400	30	7,578	-20.4		239	9.1	30	7,135	-32.6	47	192	18.6
350	30	8,552	-27.5		239	12.6	30	8,062	-39.8		194	20.2
300	30	9,642	-35.6		232	15.0	30	9,098	-47.6		202	21.6
250	30	10,886	-44.4		232	22.5	30	10,287	-52.4		212	25.8
200	30	12,350	-53.8		241	27.4	30	11,732	-50.7		223	23.3
175	30	13,198	-58.3		246	28.2	30	12,603	-50.0		230	20.4
150	30	14,158	-62.8		250	24.9	30	13,609	-50.6		233	21.4
125	30	15,269	-66.8		257	15.5	30	14,797	-50.5		237	18.5
100	30	16,607	-68.8		261	3.9	28	16,256	-51.2		238	18.6
80	30	17,952	-65.7		68	2.9	28	17,708	-51.2		249	16.5
70	29	18,774	-63.8		78	4.7	28	18,576	-51.5		256	15.2
60	29	19,718	-61.7		81	7.2	28	19,573	-51.8		260	12.4
50	29	20,853	-59.5		78	8.7	28	20,753	-52.5		265	12.6
40	29	22,258	-56.9		73	8.2	28	22,192	-53.1		268	11.3
30	28	24,096	-53.3		88	7.4	27	24,043	-52.7		281	11.1
25	27	25,276	-51.2		95	7.2	25	25,225	-52.4		288	12.2
20	23	26,733	-49.3		80	7.2	22	26,670	-51.8		285	10.3
15	17	28,637	-46.3		79	7.2	17	28,574	-50.1		302	12.8
10							7	31,236	-45.4			

Standard pressure surface (mb.)	‡ YAP, CAROLINE IS. 1007 MB						YUCCA FLAT, NEV. 882 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	17	27.9	86	259	3.5	29	1,196	12.8	67	276	.8
1000	30	82	27.3	85	259	5.1	29	121				
950	30	528	24.1	82	251	8.0	29	559				
900	30	1,009	21.2	79	251	7.2	29	1,021				
850	30	1,503	18.4	78	258	4.7	29	1,510	20.1	37	76	.8
800	30	2,022	15.6	76	249	2.9	29	2,030	17.5	34	178	5.6
750	30	2,564	12.8	72	281	1.0	29	2,571	13.3	36	182	9.9
700	30	3,147	10.0	67	165	.8	29	3,153	8.9	39	187	11.5
650	30	3,758	6.5	66	118	1.7	29	3,756	4.8	37	185	11.5
600	30	4,415	2.7	66	117	4.3	29	4,409	.6		195	11.3
550	30	5,107	- 1.4	65	123	5.6	29	5,093	- 3.9		211	11.1
500	30	5,870	- 5.4	61	114	6.8	29	5,847	- 8.9		218	12.0
450	30	6,685	-10.3	55	108	10.1	29	6,646	-14.5		217	14.4
400	29	7,589	-15.5	46	107	13.6	29	7,535	-21.4		219	15.3
350	29	8,584	-22.3	39	99	15.3	29	8,504	-29.2		225	17.5
300	29	9,698	-30.4	36	84	18.5	29	9,587	-37.6		223	19.4
250	29	10,969	-40.4		83	20.8	29	10,823	-45.7		233	23.3
200	29	12,448	-53.2		75	24.5	29	12,282	-54.0		232	28.7
175	29	13,295	-60.4		70	25.4	28	13,133	-58.0		229	28.0
150	29	14,237	-68.0		73	28.6	28	14,096	-61.6		235	27.0
125	29	15,313	-74.8		74	30.3	28	15,217	-65.0		235	20.8
100	29	16,599	-76.8		82	29.7	28	16,570	-66.2		237	10.1
80	29	17,899	-70.8		90	32.8	28	17,929	-64.4		182	5.1
70	29	18,697	-67.2		91	37.5	27	18,756	-62.5		130	4.3
60	29	19,635	-63.3		89	32.2	27	19,705	-60.8		87	5.8
50	29	20,766	-58.7		88	19.6	27	20,842	-59.4		86	7.2
40	28	22,181	-54.5		92	5.6	27	22,246	-57.1		77	5.4
30	28	24,039	-51.4		273	5.6	27	24,079	-53.8		83	4.1
25	28	25,227	-49.7		269	8.4	26	25,256	-51.5		67	3.1
20	28	26,694	-47.5		262	7.6	25	26,716	-48.9		75	4.7
15	26	28,601	-44.8		238	4.5	18	28,597	-46.3		86	4.3
10	17	31,319	-41.8		154	3.7	8	31,263	-43.9			
7	14	33,745	-38.9		111	8.4						
5	8	36,047	-38.4									

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning September 27, 1963
2/ beginning September 7, 1963
‡ Observations for these stations are scheduled at 0000 G.C.T.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. SEPTEMBER 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A.M. 78.7°	A.M. 75.7°	A.M. 70.7°	A.M. 60.0°	*	P.M. 60.0°	P.M. 70.7°	P.M. 75.7°	P.M. 78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Sept.									
3-----	(0.78)	(0.87)	(0.91)	1.14	1.29	----	----	----	----
4-----	.73	----	(.96)	(1.12)	1.32	----	----	----	----
5-----	(.80)	(.88)	(.99)	----	----	----	----	----	----
6-----	----	----	.92	1.08	1.32	1.15	1.02	0.87	----
7-----	.75	.86	.98	1.12	1.31	1.17	1.01	.90	0.81
8-----	.81	.92	1.02	1.17	1.35	----	----	----	----
9-----	----	----	(.93)	----	(1.06)	----	----	----	----
10----	----	----	----	----	(1.25)	----	----	----	----
11----	.81	.90	1.01	.96	1.32	1.14	1.00	.89	.78
12----	.82	.92	(1.03)	1.16	----	1.09	.93	(.83)	(.74)
13----	.72	.81	.93	1.11	----	----	----	----	----
14----	----	----	----	----	----	1.09	.97	.86	.68
15----	----	----	----	----	1.30	1.19	1.05	.92	----
16----	.75	.85	.96	(1.08)	1.25	(.98)	(.77)	(.64)	----
17----	----	----	(.85)	(1.04)	(1.23)	----	(.94)	.81	.73
18----	----	(.86)	----	----	----	----	----	----	----
19----	----	----	----	----	1.24	----	----	----	----
21----	----	----	----	----	1.25	----	----	----	----
22----	----	.67	.79	----	----	1.12	(.98)	----	----
23----	.67	.77	.88	1.08	1.29	----	----	----	----
24----	.73	.81	.91	----	1.22	----	----	----	----
25----	.79	.89	1.01	1.17	1.34	1.15	.99	.87	.77
26----	.88	.97	1.08	1.21	1.33	1.16	.95	.83	.73
27----	.90	1.00	1.12	1.25	1.37	1.39	1.01	.90	.81
28----	.89	.99	1.09	1.24	1.37	1.25	.95	.66	.45
29----	.65	.77	.93	1.10	(1.31)	1.20	.97	.83	.71
30----	.77	.85	.98	1.14	1.33	1.19	1.05	.94	.84
Averages	0.78	0.87	0.97	1.14	1.39	1.18	0.99	0.86	0.73

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Sept.									
1-----	0.82	0.87	1.00	1.17	1.37	1.15	1.04	0.86	0.75
2-----	.78	----	----	----	----	1.15	.95	.81	.65
7-----	.84	.94	1.06	1.21	1.35	1.16	.96	.77	.71
8-----	.70	.79	.91	1.06	1.16	----	----	----	----
10----	----	----	----	1.01	----	----	.86	.70	.60
11----	.87	.96	1.06	1.21	1.33	1.16	1.01	.89	.81
14----	.89	.99	1.11	1.25	1.40	1.28	1.11	.96	.88
19----	.78	.88	.96	1.16	1.28	----	----	----	----
24----	.87	.96	1.06	1.16	1.27	1.13	1.01	.90	.82
25----	.87	.96	1.15	1.28	1.36	1.18	1.04	.84	.72
26----	.67	.79	.95	1.12	1.28	1.08	.87	.76	.62
30----	.96	1.04	1.13	1.29	1.36	1.24	1.10	.95	.87
Averages	0.82	0.92	1.04	1.17	1.32	1.17	1.00	0.84	0.74

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Sept.									
1-25--	#								
26----	S 0.77	S 0.86	S 0.96	----	----	S 1.11	S 0.90	S 0.82	S 0.75
27----	S .83	S .93	S 1.05	S 1.23	H 1.33	S 1.21	S 1.01	S .92	S .76
29----	----	----	S 1.07	S 1.25	H 1.36	H 1.24	H 1.10	H 1.00	H .92
30----	S .95	S 1.04	S 1.13	S 1.27	S 1.30	H 1.16	H 1.00	H .89	M .57
Averages	0.85	0.94	1.05	1.25	1.33	1.18	1.00	0.91	0.75

( ) Clouds present
H Haze
S Slight haze - indeterminable
M Moderate haze - indeterminable
* Values corresponding to true solar noon.
\# Equipment struck and damaged by lightening.

MADISON, WIS.

	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Sept.									
14----	M 0.83	M 0.86	M 1.13	S 1.18	S 1.37	S 1.15	S 0.96	S 0.86	S 0.77
26----	----	----	----	----	S 1.30	S 1.18	S .97	S .90	S .81
27----	S .70	S .78	S .90	S 1.09	M 1.23	S 1.21	S .96	S .87	S .79
30----	S .86	S .94	S 1.05	S 1.20	S 1.32	S 1.18	S 1.03	S .92	S .82
Averages	0.80	0.86	1.03	1.16	1.31	1.18	0.98	0.89	0.80

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Sept.									
4-----	----	----	----	----	----	----	0.90	----	0.70
5-----	----	----	----	1.12	----	----	----	----	.40
6-----	----	----	----	----	----	----	----	0.70	.60
7-----	----	----	----	1.13	----	1.10	----	----	----
9-----	----	----	----	1.17	----	----	----	----	----
10----	----	----	----	1.13	----	----	----	----	----
12----	----	----	----	1.13	----	----	----	.65	.50
13-15-	Pyrheliometer inoperative								
18----	0.88	0.97	1.07	1.18	----	----	----	----	----
19-20-	Pyrheliometer inoperative								
21----	----	----	----	----	----	1.10	1.02	----	.90
22----	Pyrheliometer inoperative								
24----	.81	.89	1.00	1.20	----	1.13	.96	.84	.74
25----	.70	.80	.91	----	----	----	----	----	----
26----	.87	.97	1.09	1.26	----	1.16	1.00	.88	.80
27----	.83	.91	1.04	1.20	----	1.22	1.04	.91	----
28----	.84	.94	1.05	1.17	----	1.13	.92	.77	.68
29----	.87	.95	1.09	1.22	----	1.09	.90	.72	.64
30----	.74	.85	.97	1.13	----	1.15	.97	.87	.77
Averages	0.81	0.91	0.91	1.17	----	1.13	0.96	0.79	0.67

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Sept.									
1-----	1.17	1.26	1.35	1.44	----	----	----	----	----
2-----	1.13	1.23	1.33	1.40	----	----	----	----	----
5-----	1.03	1.12	1.21	1.35	1.51	1.32	1.18	----	----
8-----	1.06	1.14	1.23	1.36	1.51	1.34	1.20	1.11	1.02
9-----	1.00	1.08	1.19	1.33	1.50	1.32	1.18	1.07	.96
10----	1.03	1.12	1.22	1.37	1.53	1.35	1.22	----	----
11----	1.01	1.10	1.21	1.35	1.51	1.32	1.17	1.08	.97
12----	1.03	1.12	1.23	1.37	----	----	----	1.13	1.04
13----	1.06	1.15	1.25	1.39	----	----	----	----	----
14----	1.10	1.19	1.28	1.41	----	----	----	----	----
15----	1.17	1.24	1.34	1.45	1.55	1.40	1.27	1.18	1.11
16----	1.10	1.20	1.31	1.40	----	----	----	----	----
18----	.97	1.06	1.18	1.31	----	----	----	----	----
19----	.97	1.07	1.20	1.34	----	----	----	----	----
20----	----	----	----	1.36	----	----	----	----	----
21----	1.07	1.17	1.27	1.40	1.52	----	----	----	----
22----	1.14	1.23	1.31	1.42	1.57	----	1.28	1.18	1.09
23----	1.11	1.21	1.31	1.40	1.51	----	----	1.17	.99
24----	1.05	1.14	1.24	1.36	----	----	----	----	----
25----	1.07	1.16	1.26	1.39	----	----	----	----	----
26----	1.07	1.15	1.26	1.38	----	----	----	----	----
28----	1.13	1.20	1.31	1.43	----	1.37	1.26	1.16	1.09
30----	1.11	1.22	1.31	1.43	1.56	1.39	1.26	1.17	1.07
Averages	1.07	1.16	1.26	1.38	1.53	1.35	1.22	1.14	1.04

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observation due to cloudiness								

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

SEPTEMBER 1963

Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	549	556	580	485	316	583	602	585	568	465	640	547	512	334	555	566	559	516	479	394	510	574	562	452	541	536	559	534	542	554		525
AMES IOWA	310	442	387	211	483	353	551	527	493	117	326	247	550	447	486	291	425	466	340	309	324	319	75	375	325	454	449	266	462	450		375
ANNETTE ALASKA	111	37	45	51	36	55	83	152	115	290	40	48	111	235	274	344	46	264	70	62	204	301	187	69	117	206	275	136	26	50		135
APALACHICOLA FLORIDA	---	---	---	---	---	---	---	---	---	---	---	534	508	529	217	232	472	300	571	516	543	459	108	503	473	272	63	67	418	534		---
ARGONNE NAT. LAB.	524	283	183	249	422	532	474	526	456	406	289	87	516	540	329	348	306	447	426	162	434	339	345	480	409	395	468	434	361	468		388
ASTORIA OREGON	181	554	583	516	538	552	472	485	372	293	351	200	368	174	47	522	504	510	497	325	271	91	461	473	472	431	369	343	455	205		387
ATLANTA GEORGIA	517	412	441	369	454	307	230	503	492	464	440	447	395	79	170	554	472	297	475	479	489	418	480	525	499	408	161	27	368	357		391
BARROW ALASKA	91	66	137	152	212	147	114	105	128	105	94	179	244	72	164	98	91	136	156	61	34	83	136	119	89	94	73	76	89	95		115
BETHEL ALASKA	232	200	360	427	252	431	276	215	110	216	---	220	398	375	238	133	142	157	204	295	340	334	315	200	249	95	101	174	217	129		243
BISMARCK N.DAK.	111	315	269	484	396	513	512	432	439	412	393	514	456	227	478	274	371	146	211	381	419	65	62	352	420	425	420	432	429	405*		359*
BLUE HILL MASS.	589	591	393	384	438	79	574	482	453	491	555	341	342	513	398	69	98	151	479	56	194	108	192	464	494	459	409	416	20	479		357
BOISE IDAHO	529	501	595	510	534	387	240	538	465	528	515	425	434	526	338	380	274	186	485	432	423	361	456	494	485	473	469	457	453	270		439
BOSTON MASSACHUSETTS	588	575	411	325	451	82	559	497	450	501	509	346	351	511	425	90	59	225	452	84	205	124	207	495	474	470	404	416	20	478		359
BROWNSVILLE TEXAS	510	436	389	559	534	610	406	465	383	202	---	513	339	278	454	407	494	470	368	335	460	566	277	----	404	200	486	557	554	561		436
BURLINGTON VERMONT	938	502	277	524	455	542	536	498	455	427	430	115	439	523	210	486	490	456	110	357	404	305	330	489	499	395	302	403	63	365		411
CANTON ISLAND P.I.	624	549	602	618	626*	592	629	636	644	626	601	573	359	614	608	610	535	636	624	635	651	661	583	592	566*	653	667	676	643	---		608*
CAPE HATTERAS N.C.	551	587	587	356	83	501	548	188	476	490	487	523	313	122	338	149	349	378	433	466	391	86*	404	443	335	435	389	280	80	272		368*
CARIBOU MAINE	477	458	341	438	554	501	283	469	---	474	370	125	470	524	506	476	459	449	190	373	171	367	281	456	452	288	384	391	76	183		379
CHARLESTON S.C.	635	506	608	554	352	372	584	639	641	591	---	577	424	179	370	420	633	256	399	261	191	160	288	313	321	460	321	127	131	437		405
CLEVELAND OHIO	555	394	219	313	290	146	348	359	489	503	425	122	485	512	473	456	353	348	287	36	361	370	385	407	411	381	367	221	233	393		355
COLUMBIA MISSOURI	480	501	294	351	406	482	536	579	536	328	489	457	268	526	462	374	407	498	509	441	438	441*	525	503	81	445	484	485	520	498		445*
DAVIS CALIFORNIA	616	618	557	383	417	593	582	578	608	600	502	166	448	588	456	361	512	214	286	518	534	473	542	531	522	481	492	495	490	504		489
DODGE CITY KANSAS	466	552	577	518	543	546	555	435	341	526	319	532	486	433	424	218	504	539	514	463	268	382	478	269	495	509	505	484	509	498		463
E. LANSING MICHIGAN	551	156	107	---	407	580	189	442	491	566	407	83	594	545	524	474	404	468	247	175	344	363	439	475	453	473	451	11	344	466		387
EL PASO TEXAS	516	555	622	523	517	659	658	640	580	627	632	599	632	563	608	618	637	409	587	599	537	541	559	592	587	613	599	605	556	588		585
ELY NEVADA	---	642	637	581	340	579	469	507	601*	604	587	549	225	600	528	381	219	357	408	231	550	567	515	548	550	542	534	530	529	454		495*
EPPLEY,NEWPORT R.I.	577	562	309	224	355	136	530	298	435	462	544	306	279	439	426	90	128	136	436	89	247	209	311	487	477	460	413	396	54	466		343
FLAMING GORGE UTAH	475	557	604	596	317	174	432	453	306	458	552	----	----	----	----	----	291	139	492	384	305	511	437	514	509	----	512	492	491	459		436
FORT WORTH TEXAS	545	588	592	572	389*	530	340	583	576	551	544	114	419	418	289	303	210	294	427	526	519	504	514*	504	343	384	422	513	548	528		453*
FRESNO CALIFORNIA	607	590	574	228	582	550	554	574	561	571	540	359	547	536	515	401	247	148	398	505	508	509	514	509	504	488	491	472	374	454		480
GAINESVILLE FLORIDA	---	---	---	525	256	446	451	----	654	544	586	515	524	----	----	416	364	415	436	335	---	277	68	148	164	372	318	241	190	490		380
GLASGOW MONTANA	404	392	415	521	498	514	520	436	280	471	315	400	341	358	341	245	173	428	365	458	339	407	228	431	421	428	413	427	410	389		392
GRAND JUNCTION COLO.	651	658	677	640	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---
GREAT FALLS MONTANA	134	325	511	516	460	502	475	290	429	462	210	376	163	462	207	242	326	---	442	423	216	371	348	399	411	402	390	387	373	367		366
GREENSBORO N.C.	560	569	486	---	101	249	409	472	536	481	417	496	270	68	395	436	555	464	523	532	472	495	579	560	464	528	445	121	386	538		435
GRIFFIN EXP.STA.GA.	638	644	579	499	552	392	394	606	584	572	551	535	543	61	164	573	532	327	624	623	587	568	567	662	636	505	181	50	472	452		489
INDIANAPOLIS INDIANA	599	324	303	299	452	533	496	480	527	486	313	446	524	552	473	463	390	488	482	349	468	438	503	506	497	503	491	359	202	494		448
ITHACA NEW YORK	562	526	236	156	174	511	428	404	429	421	496	207	472	518	517	474	438	444	337	72	159	392	485	480	468	410	376	279	190	314		379
LAKE CHARLES LA.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	560	522	517	519	526	---	365	485	183	515	548		---
LANDER WYOMING	478	522	600	597	582	292	290	404	449	445	508	541	324	539	499	325	324	164	415	283	285	504	403	501	498	494	496	473	480	451		439
LARAMIE WYOMING	435	393	456	538	492	328	321	416	464	464	465	386	469	390	497	402	355	228	339	138	373	507	413	485	472	463	469	444	449	441		416
LAS VEGAS NEVADA	655	640	580	155	600	620	620	619	556	580	583	492	521	588	581	582	135	440	490	546	581	577	564	570	549	545	545	553	553	517		538
LITTLE ROCK ARKANSAS	544	463	343	308	286	363	230	470	455	411	412	313	93	275	406	109	165	481	456	453	456	442	462	492	422	421	239	239	454	475		371
LOS ANGELES CALIF.WB	549	482	235	75	405	475	588	602	593	579	591	394	567	550	454	397	---	---	409	516	507*	506*	529	522	520	496	507	508	488	422		481*
LOS ANGELES CALIF.CO	638	583	454	105	568	551	631	649	614	619	627	453*	548*	597	531	382	94	253	285	489	544	534	530	537	539	520	520	549	513	430		496*
MANHATTAN KANSAS	42	610	506	460	482	565	599	567	442	349	574	346	280	588	491	174	258	595	582	524	153	331	513	463	497	445	556	538	569	558		455
MEDFORD OREGON	608	596	583	572	453	277	531	528	446	515	362	372	441	512	341	517	472	440	451	450	316	----	452	483	481	444	389	443	374*	443*		458*
MIAMI FLORIDA	349	329	494	553	403	556*	380	382	455	415	343	502	594	446	361	582	333	302	180	103	254	397	216	209	136	379	443	514	552	458		387*
MIDLAND TEXAS	441	534	430	353	411	600	596	432	442	583	496	366	502	374	417	467	452	437	446	415	461	496	530	506	482	542	540	536	534	539		479
NASHVILLE TENNESSEE	591	495	450	258	490	563	566	535	516	392	444	---	104	---	----	447	426	---	518	503	447	533	502	530	518	331	129	52	36	512		419
NORTH OMAHA NEBRASKA	---	---	---	---	---	---	---	---	---	---	---	193	468	409	485	173	279	482	496	176	159	101	312	313	479	526	511	436	524	501		---
OAK RIDGE TENNESSEE	540	436	445	270	331	397	465	450	465	406	368	238	176	263	454	435	413	252	406	453	426	486	471	486	477	362	300	53	359	452		384
OKLAHOMA CITY OKLA.	348	551	411	504	261	514	199	509	462	468	348	315	584	---	---	---	---	---	---	---	452	370	490	401	364	450	458	502	525	516		435
PAGE ARIZONA	517	475	527	377	351	435	541	514	268	524	525	513	129	534	515	521	335	300	466	492	503	506	490	497	494	494	480	482	475	465		458
PHOENIX ARIZONA	625	628	344	311	---	608	599	583	606	601	594	597	327	586	568	570	528	476	562	---	544	533	517	514	510	526	513	518	520	495		532

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

SEPTEMBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
PORTLAND MAINE	567	556	413	572	548	145	553	343	345	517	531	232	466	534	511	303	159	368	374	360	331	177	391	489	481	431	328	443	34	439		398
PROSSER WASHINGTON	431	635	621	606	593	585	348	437	542	577	510	167	390	521	186	333	519	552	535	509	388	338	449	515	500	491	459	450	456	472		471
RAPID CITY S.DAK.	269	282	297	520	487	483	494	459	276	399	478	209	447	346	484	431	425	85	141	210	127	257	401	440	434	432	426	347	422	404		364
RIVERSIDE CALIFORNIA	639	640	536	173	661	583	645	657	635	641	633	558	593	628	497	611	59	198	260	564	583	560	601	599	570	571	565	555	506	535		535
SAINT CLOUD MINN.	418	100	424	248	245*	270	541	513	532	466	416	359	544	494	118	399	154	19	53	460	487	379	109	118	441	453	446	203	444	437		343*
SALT LAKE CITY UTAH	---	---	549	609	341	504	---	546	395	588	594	588	103	599	557	316	208	388	576	465	425	548	549	559	539	533	523	517	526	503		487
SAN ANTONIO TEXAS	575	508	501	560	593	615	607	471	486	545	535	562	414	371	445	478	548	---	212	428	593	548	526	553	307	484	473	575	570	567		505
SANTA MARIA CALIF.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---
SAULT STE MARIE MICH	525	141	275	583	483	525	215	432	527	150	410	549	570	542	513	450	292	275	239	182	184	186	294	383	139	399	129	74	368	443		349
SEATTLE WASH. UNIV.	525	401	527	492	424	459	531	---	---	---	---	216	296	266	172	167	401	457	417	374	303	135	200	411	389	405	361	374	374	352		363
SEATTLE TACOMA WASH.	173	426	536	522	459	501	499	148	476	101	387	241	288	381	147	319	359	440	430	400	277	130	156	426	417	389	373	366	385	287		348
SHREVEPORT LOUISIANA	610	500	536	554	332	527	279	441	531	518	398	465	194	137	377	105	89	209	531	487	---	473	517	508	412	393	---	---	478	510		411
SPOKANE WASHINGTON	439	435	555	550	548	546	529	305	498	470	503	202	232	441	134	142	363	468	475	446	414	275	254	400	438	422	404	394	382	401		402
STATE COLLEGE PENN.	578	530	311	431	46	494	394	491	558	559	565	381	493	658	528	465	640	533	464	73	262	350	540	524	500	486	458	392	254	392		445
STERLING VIRGINA	556	578	399	362	93	545	469	442	497	543	499	---	295	274	116	141	318	270	501	448	98	544	547	529	519	---	473	362	325	502		402
STILLWATER OKLAHOMA	308	510	421	394	556	539	345	525	384	525	267	435	368	462	363	137	304	516	482	525	500	480	525	466	437	521	512	524	543	540		447
TAMPA FLORIDA	555	556	476	504	533	313	577	411	---	---	598	506	524	460	325	514	368	219	272	303	321	243	203	152	195	391	380	350	277	550		396
TUCSON ARIZONA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont. during the month September 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	-107	159	217	308	249	252	303	168	273	261	261	265	78	104	165	164	135	117	109	212	21	221	87	194	219	186	222	177	213	202		181

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. **The value represents the total incoming minus the total outgoing radiation of all wave lengths.**

These data are of an experimental nature and are published as received from the Huntley Exp. Station. **The instrument with which they were measured has not been checked by the Weather Bureau.**

TOTAL OZONE DATA

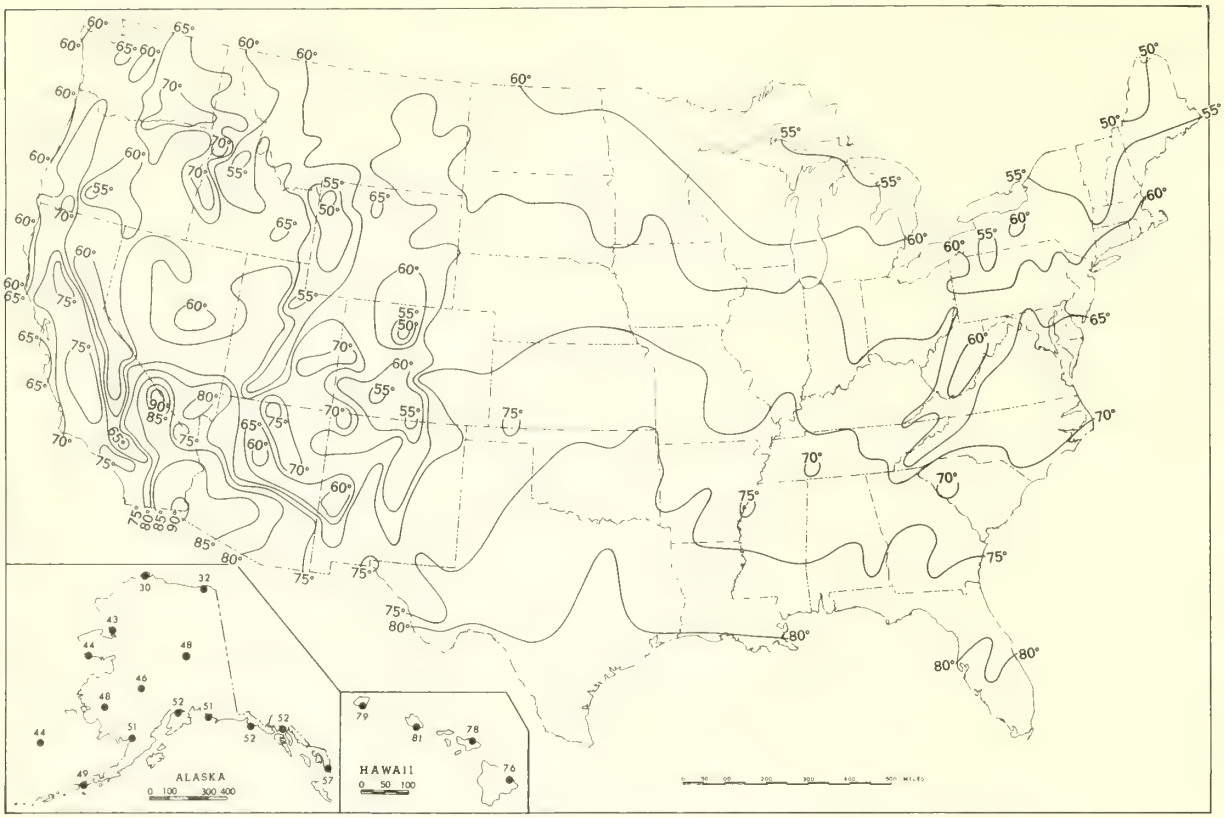
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code ∧S Q Q Q defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

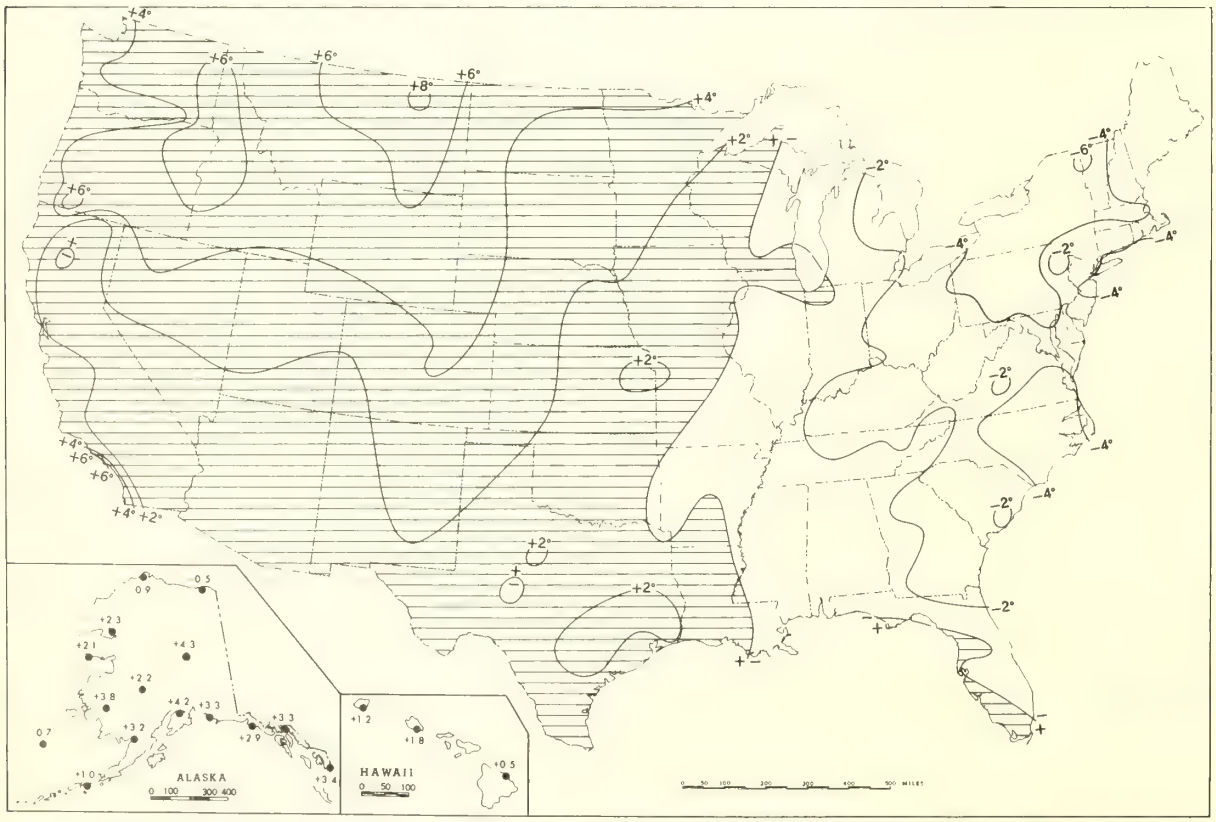
Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	06323	00319	00324	00301	00295	00287	00277	00279	00269	00272	00275	00275	00263	00293	00278	00283	03283	05283	06276	00275	00283	05299	05281	00286	00268	00256	00251	00297	00263	00257		282
Caribou, Maine	00297	04307	05327	00330	00328	05307	05349	00312	-----	00341	00304	05304	00312	00322	00309	00304	00283	00283	05303	00298	05351	00295	04275	00271	00295	00322	00326	00365	05343	05385		315
Green Bay, Wis.	00345	05375	00342	05343	00339	00317	06303	00300	00300	00290	05315	00301	00328	00314	00310	00306	06307	00294	05313	00302	00301	05302	05309	04329	05315	00304	00300	05324	00316	00307		315
Mauna Loa, Hawaii	00283	00282	00277	-----	00274	00271	-----	00271	00270	00268	00267	00272	00270	00268	00265	00264	-----	00269	-----	00268	00274	00280	00281	00279	00273	00257	00252	00258	-----	00263		270
Midland, Texas	00284	00282	00281	-----	00278	00274	00280	00270	00272	00271	00277	00277	00285	03270	06279	00271	00261	06253	05257	05255	05260	06261	00271	00270	00272	00272	00267	00263	00257	00264		270
Nashville, Tenn.	00318	00306	00316	00314	00310	00316	00310	00302	00306	00317	00307	05309	05323	00317	00312	00297	00290	00303	00305	00294	00300	00296	00307	00311	00308	00291	05293	04303	-----	00289		306
Sterling, Va.	00321	00312	03308	05311	05326	00334	00314	00312	00303	00301	00299	06313	-----	00314	05347	-----	-----	03298	00300	00295	-----	-----	00311	00313	00314	00300	00306	00297	00297	00288		309

The spectrophotometer measures the total amount of ozone in the atmosphere, i e , the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded Q Q Q) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0 350 centimeter thick The code ∧S designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, September 1963.



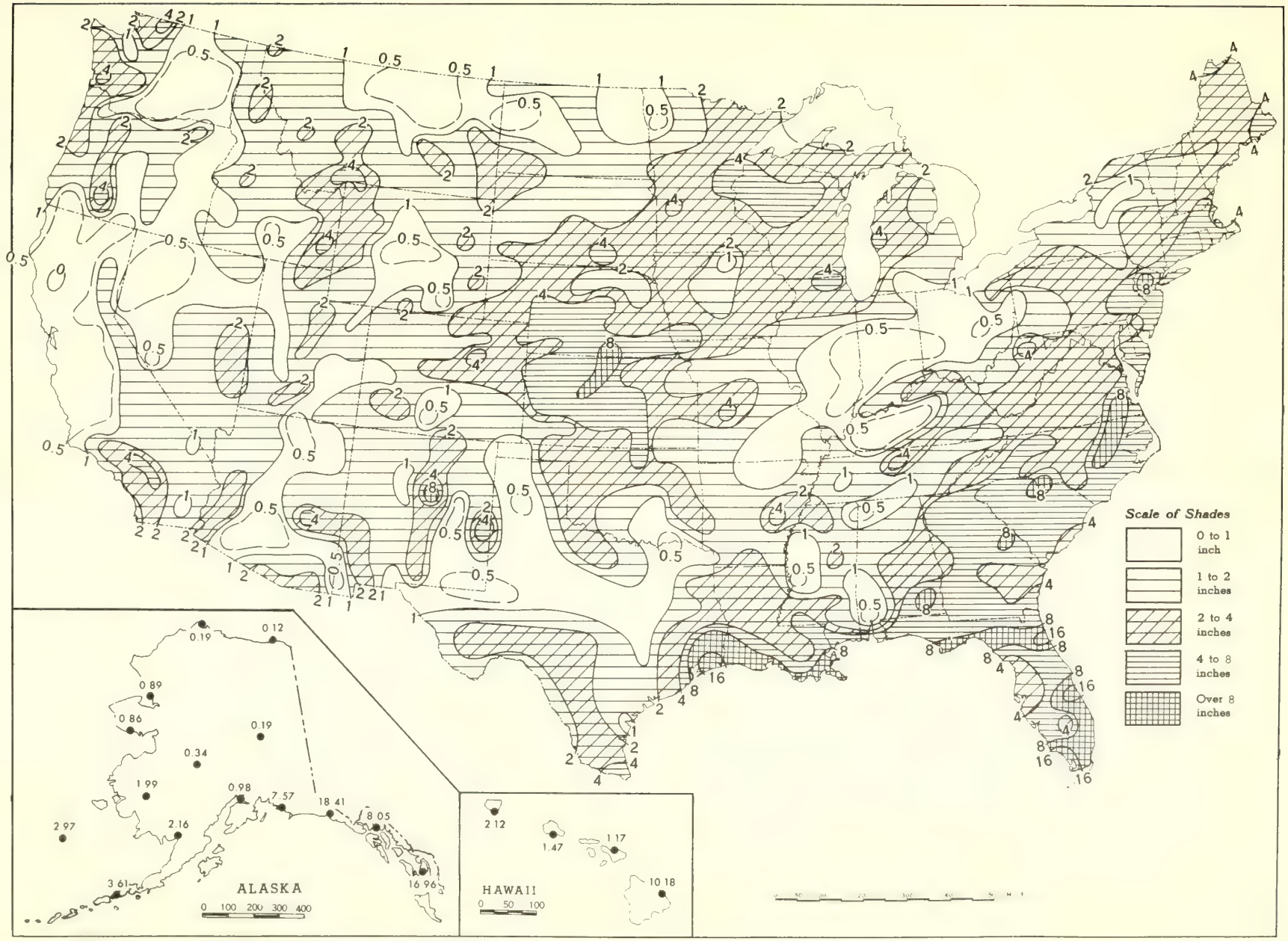
B. Departure of Average Temperature from Normal (°F.), September 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

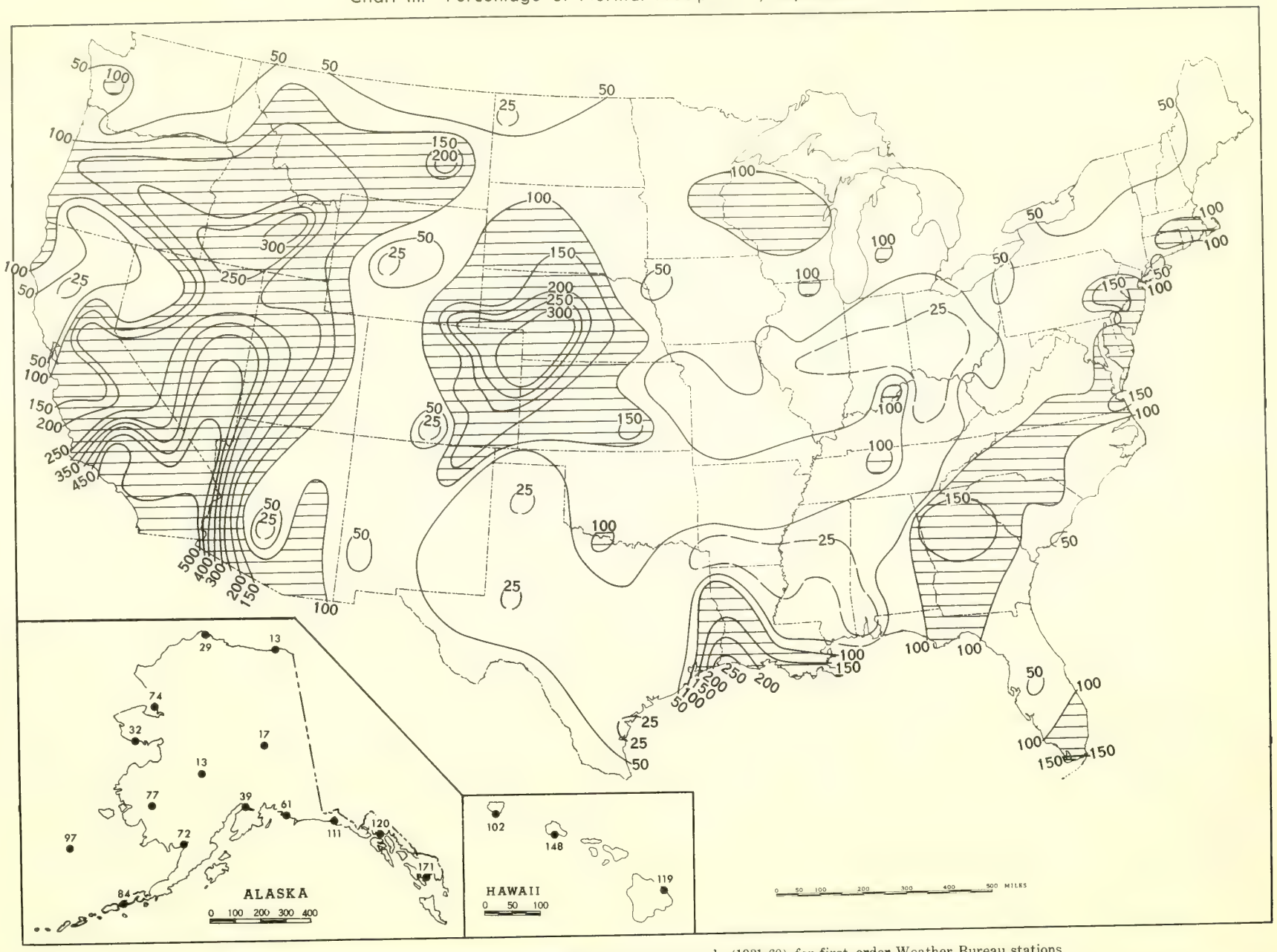
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), September 1963.



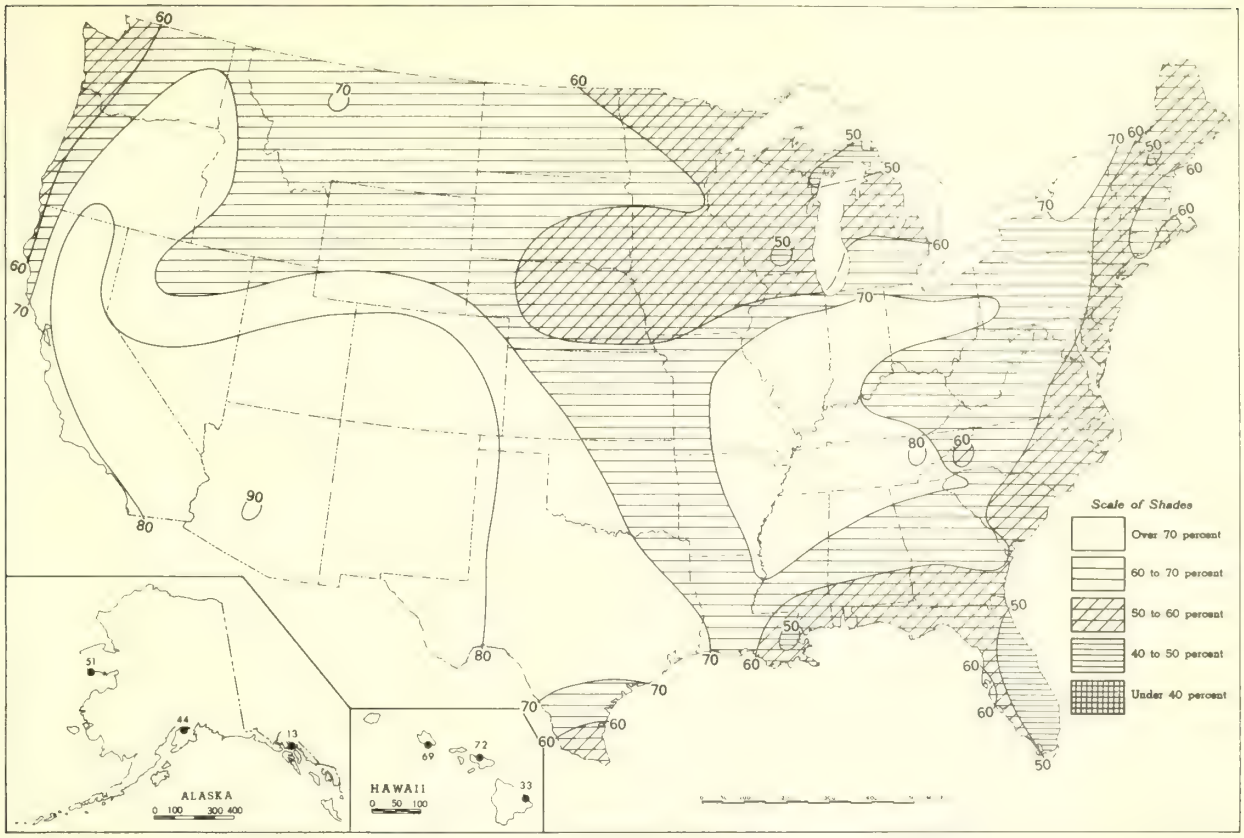
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, September 1963.

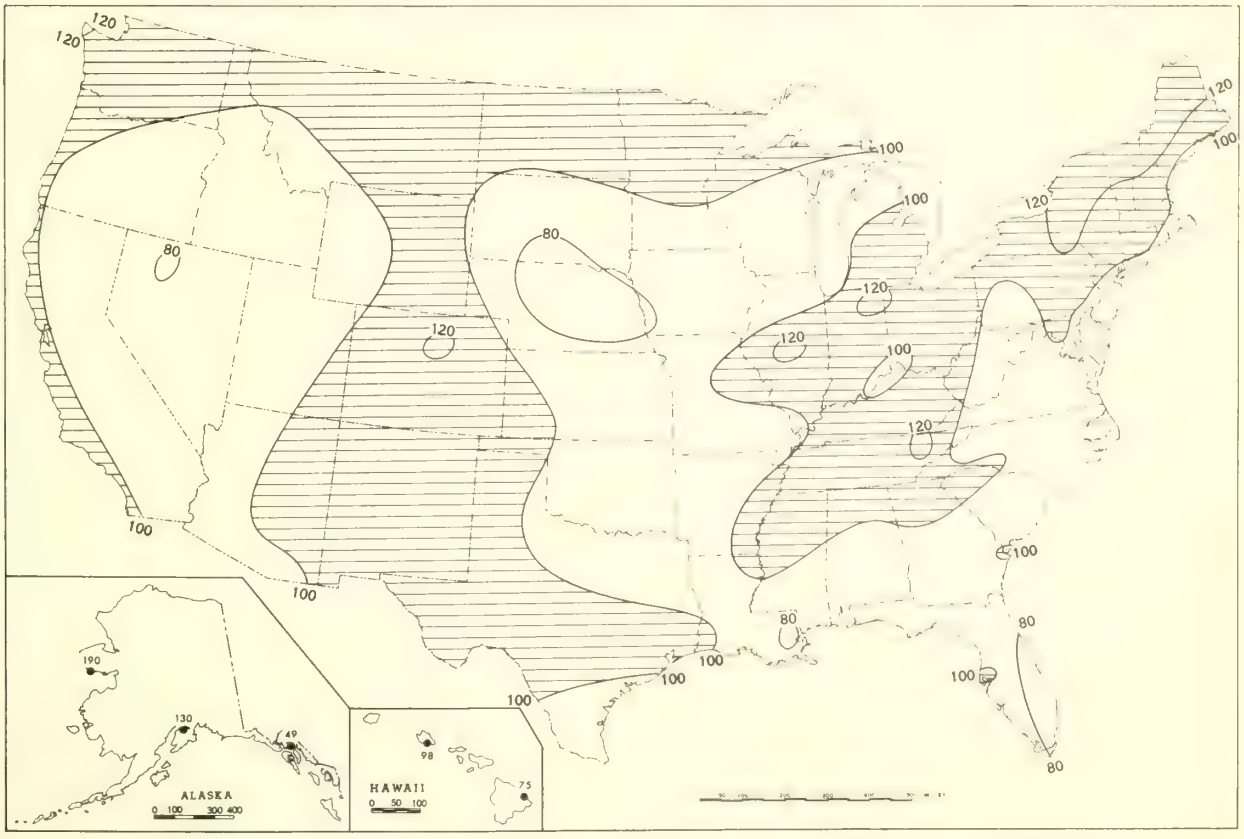


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, September 1963.

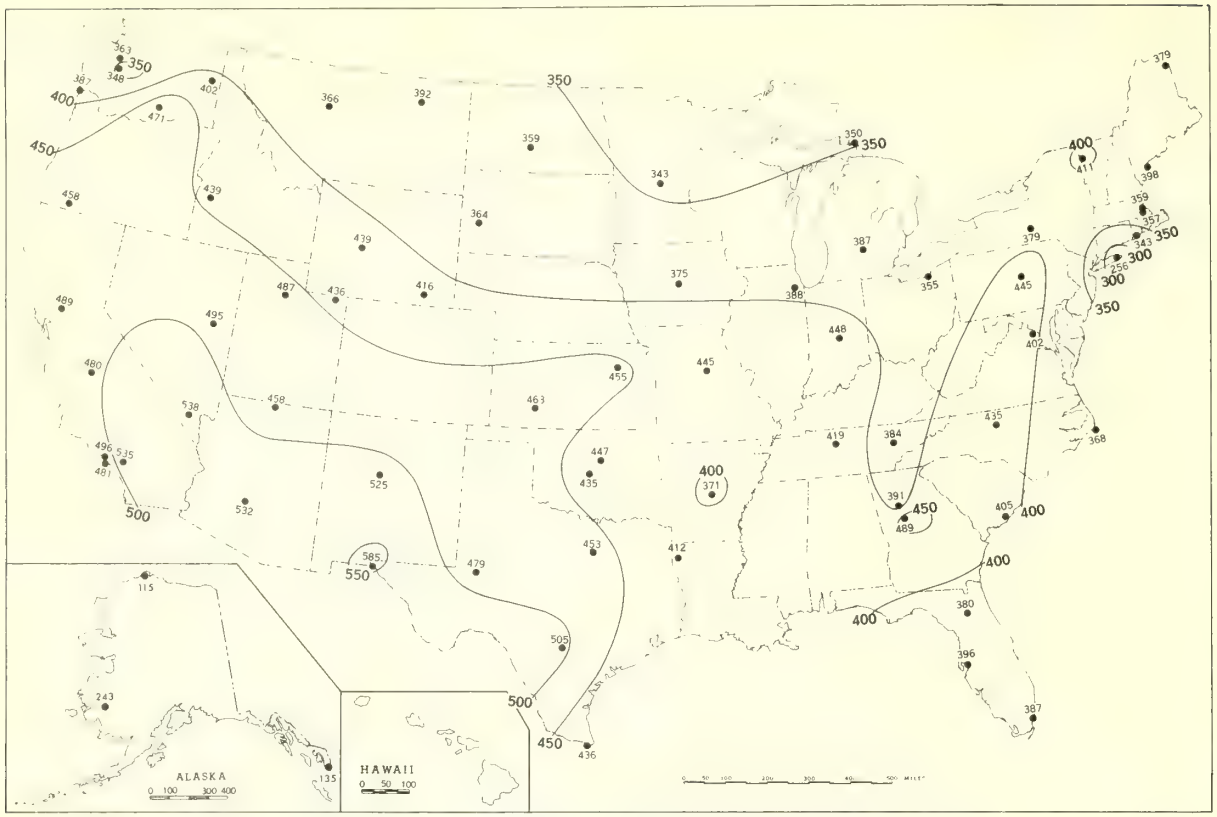


B. Percentage of Mean Monthly Sunshine, September 1963.

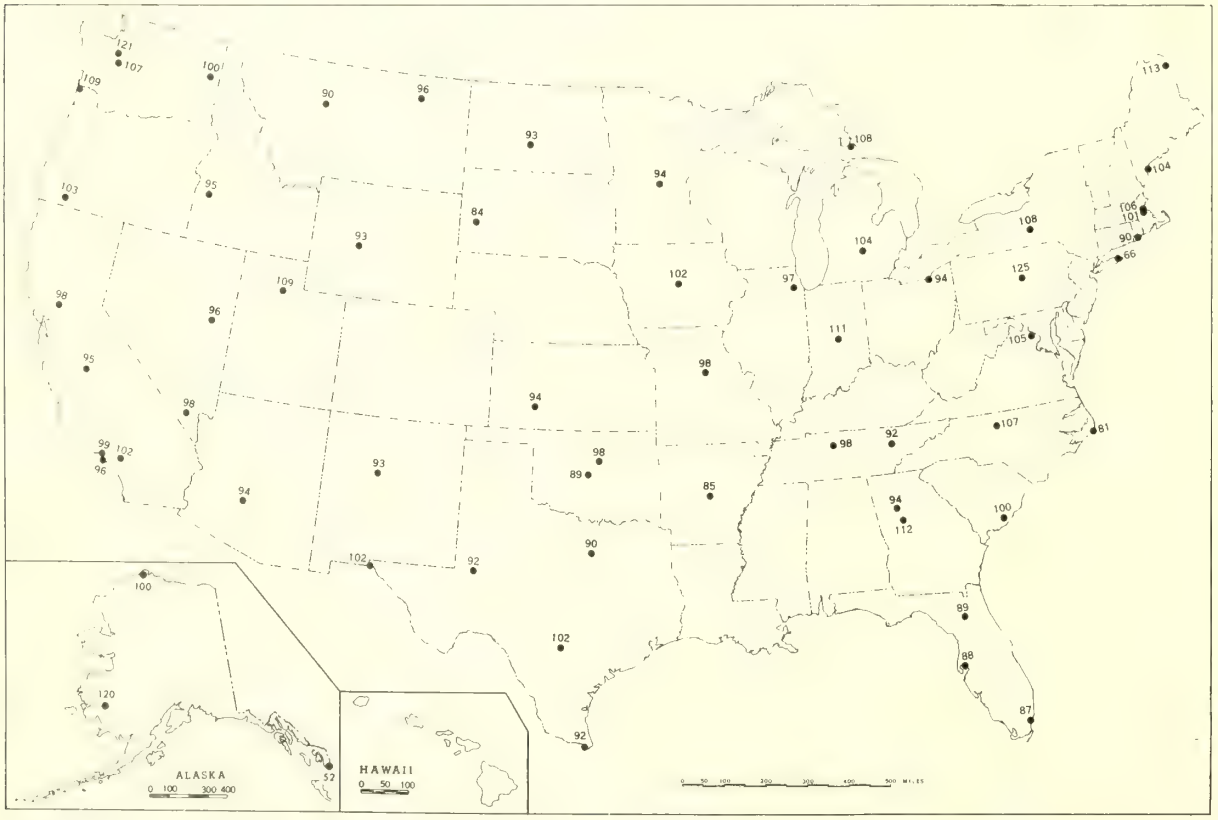


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, September 1963.

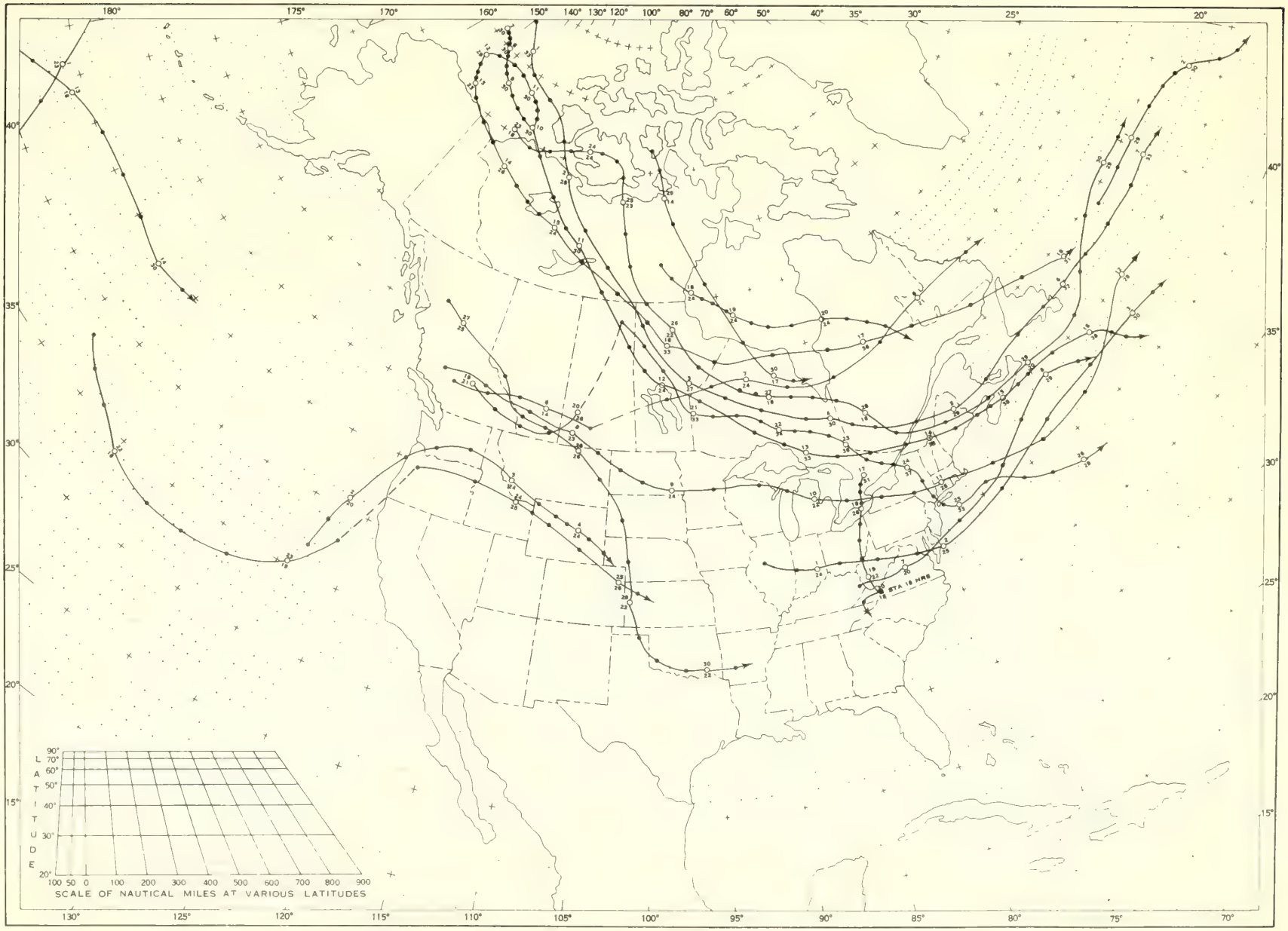


B. Percentage of Mean Daily Solar Radiation, September 1963.



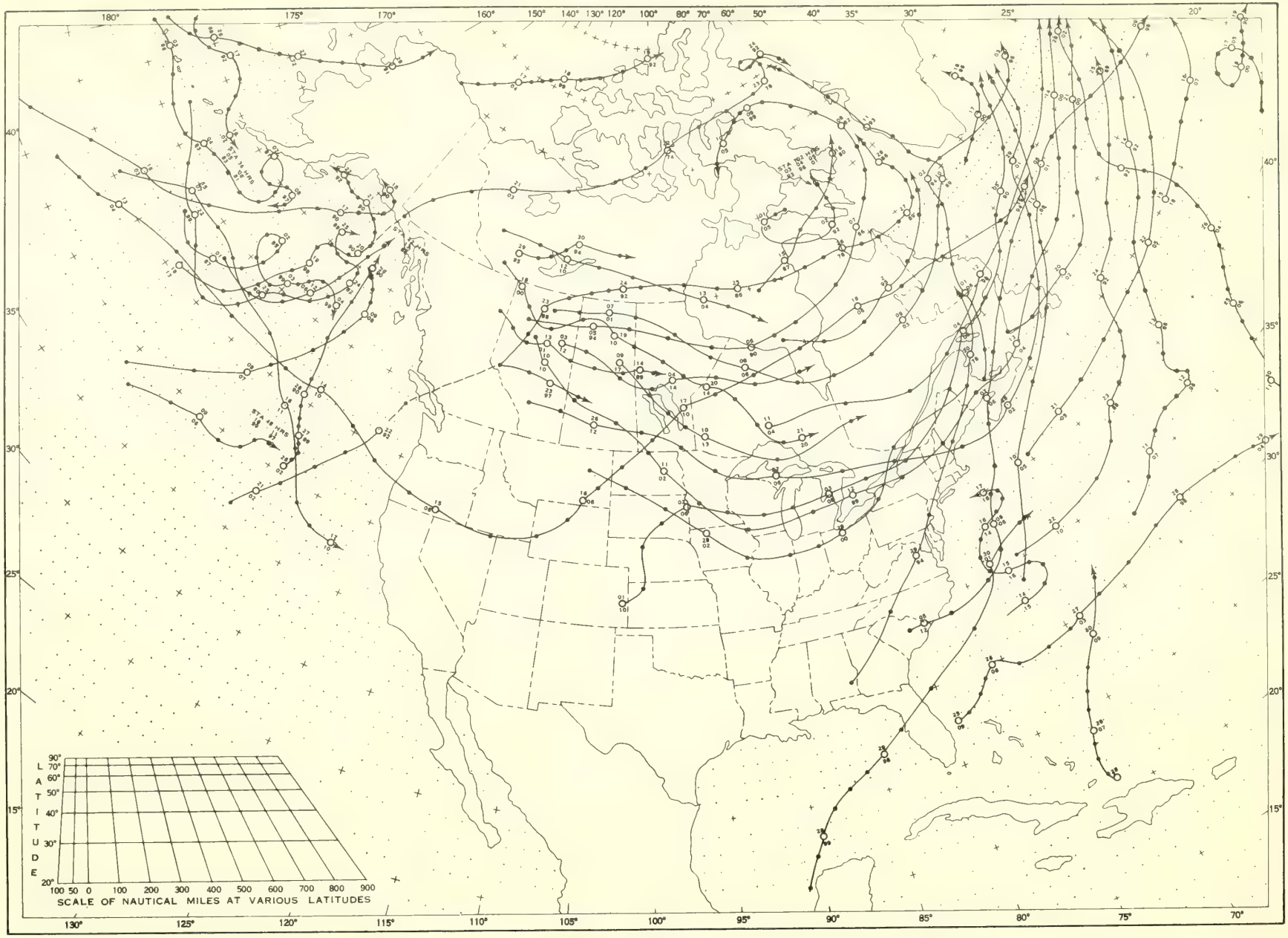
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, September 1963.



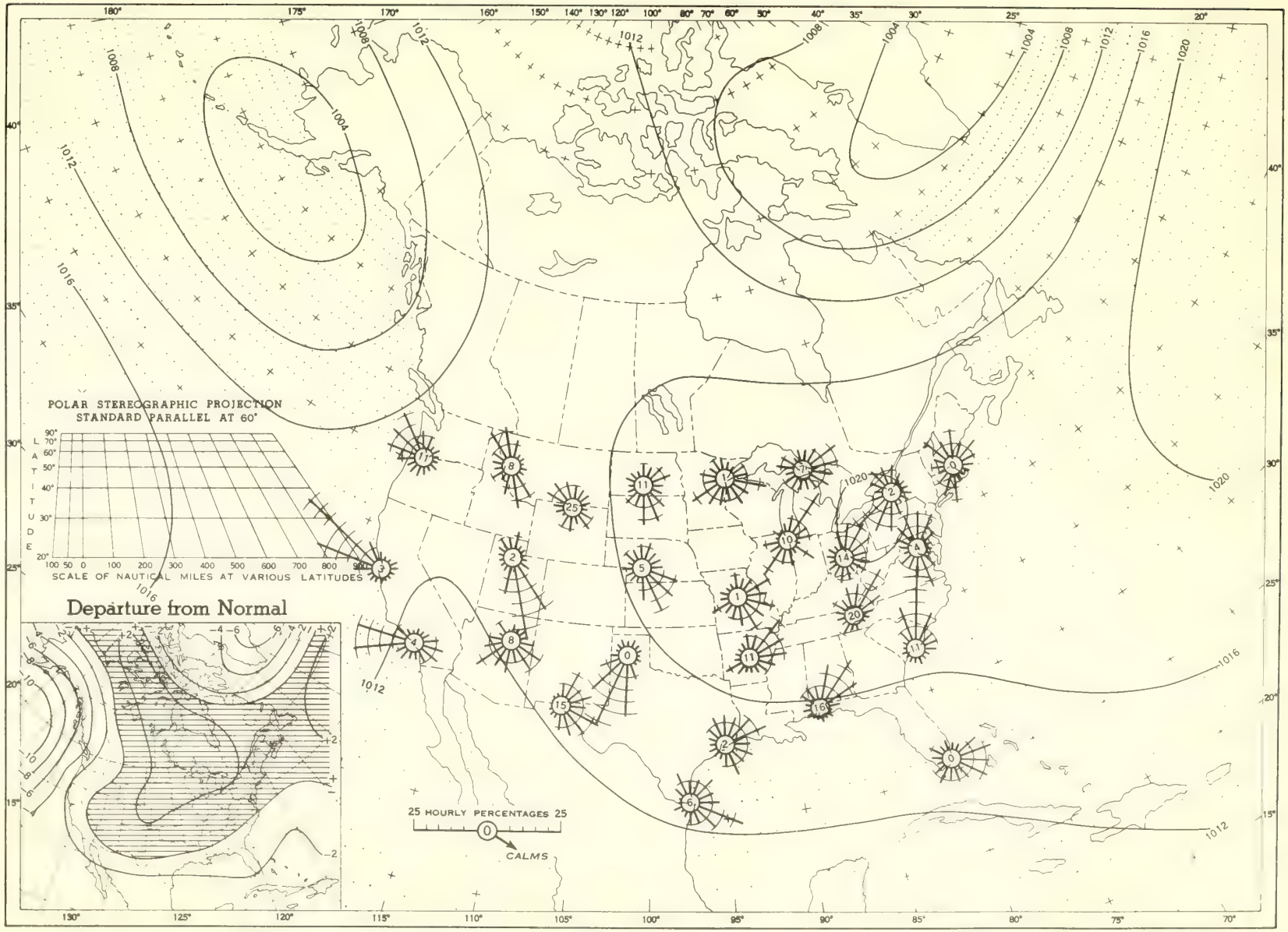
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, September 1963.



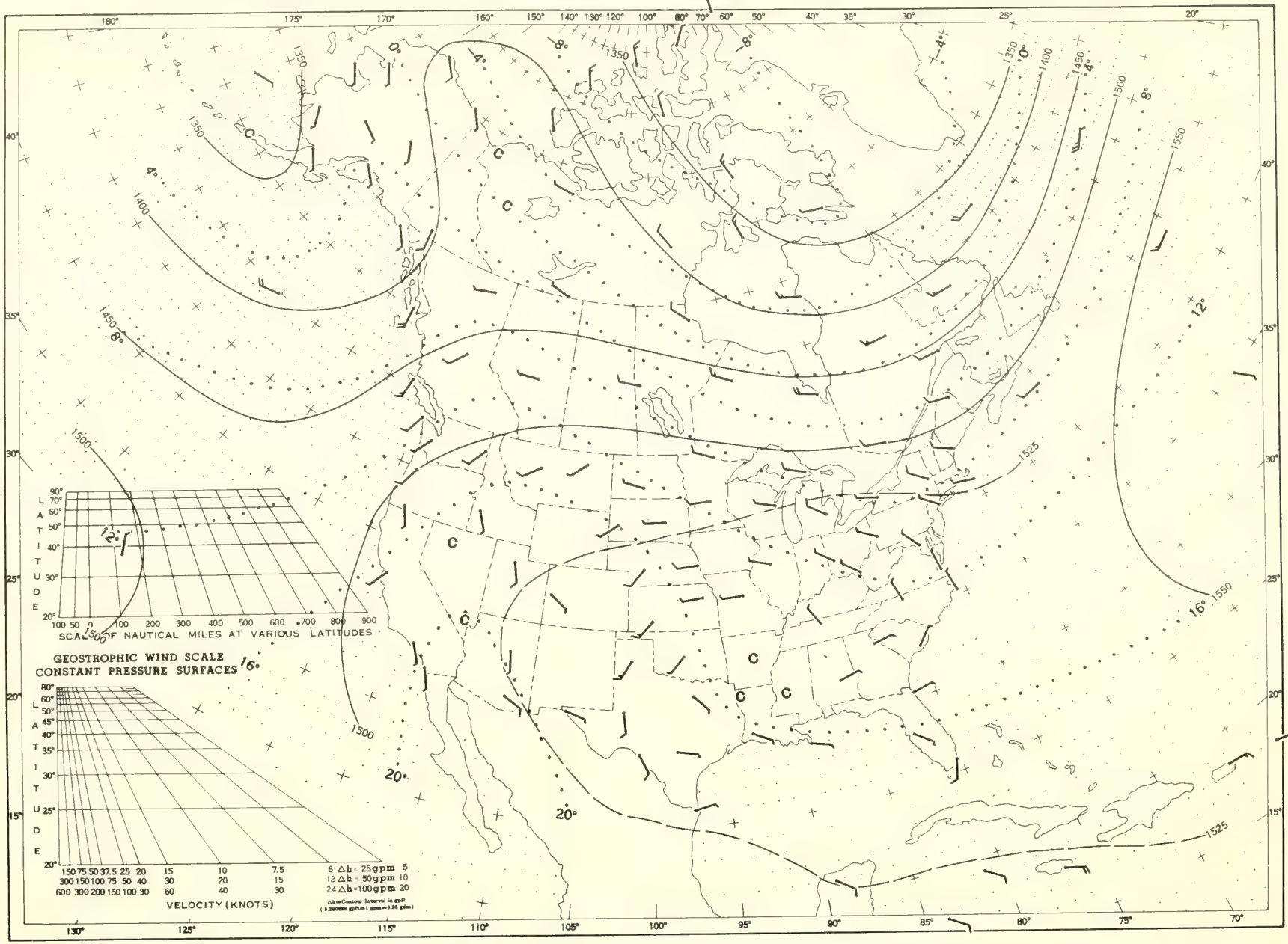
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, September 1963. Inset: Departure of Average Pressure (mb.) from Normal, September 1963.



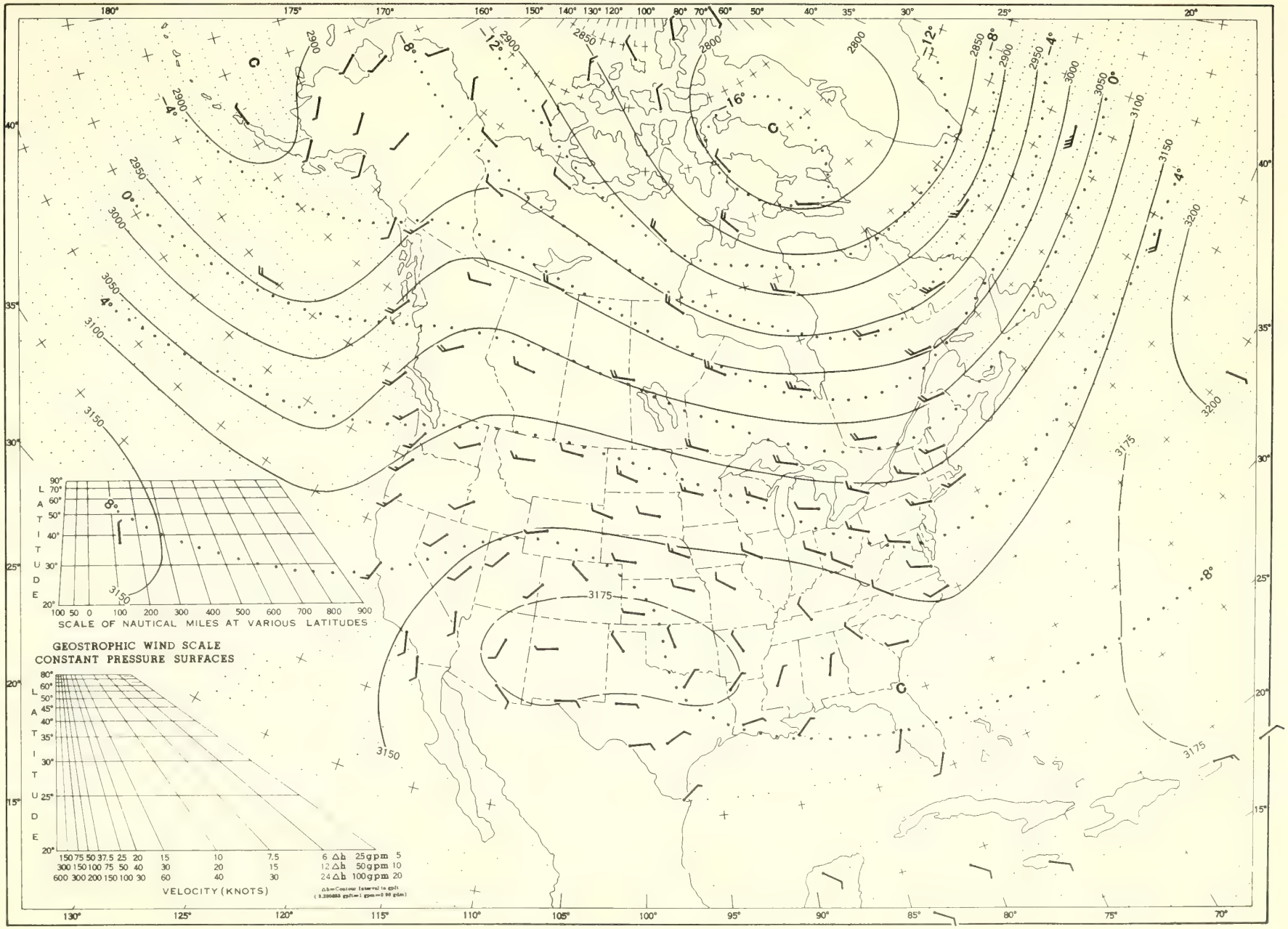
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.



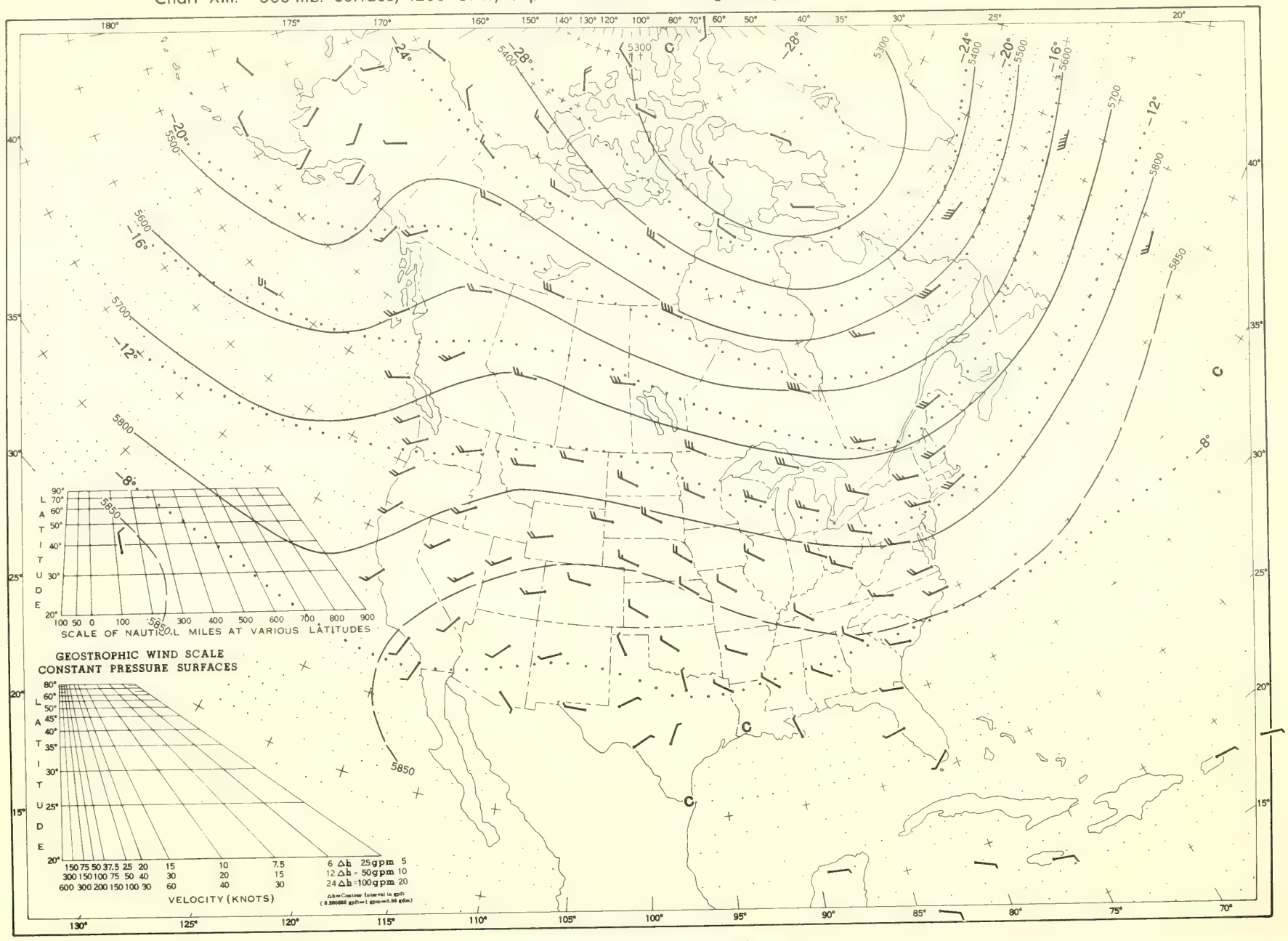
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.



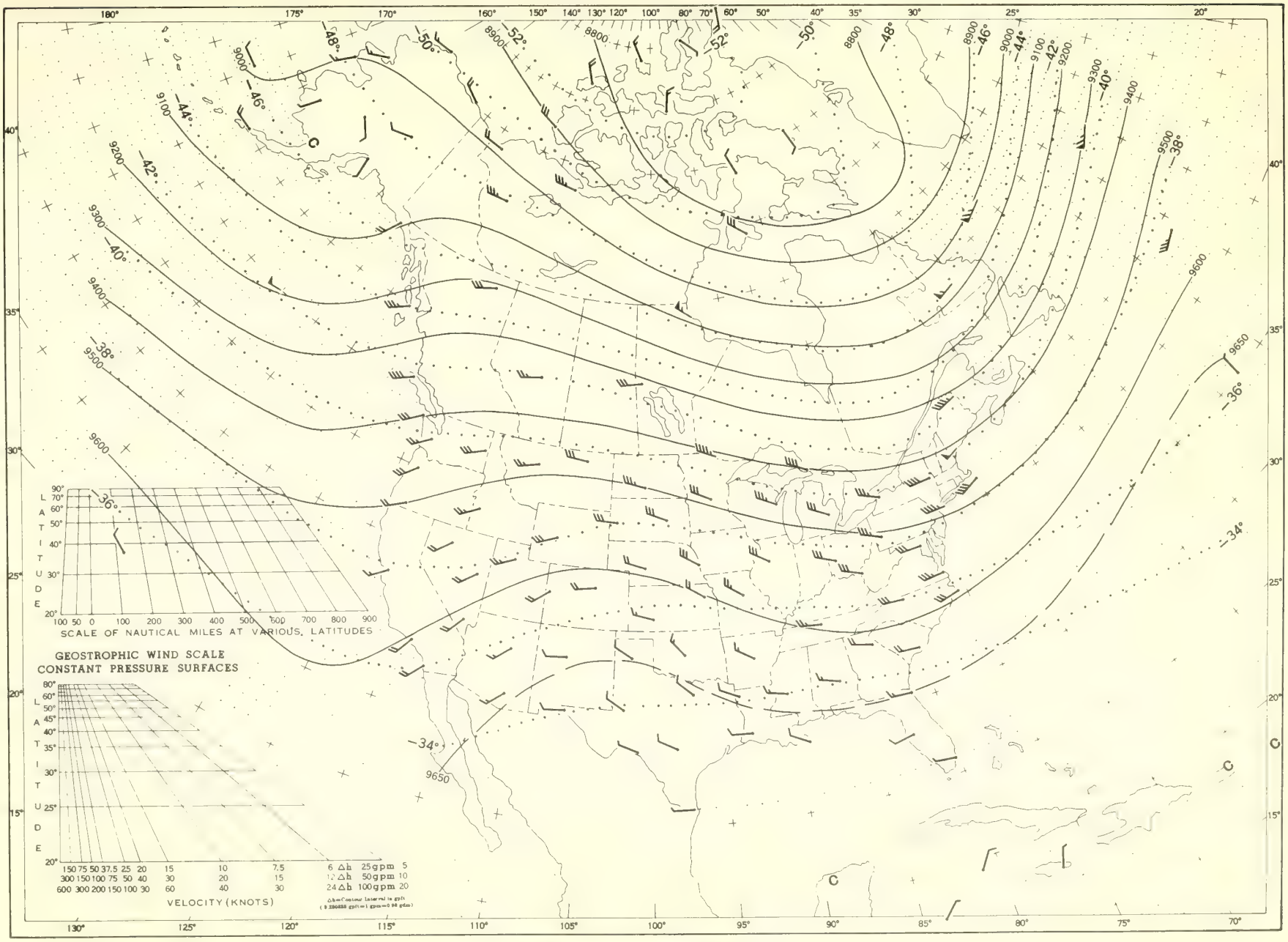
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.



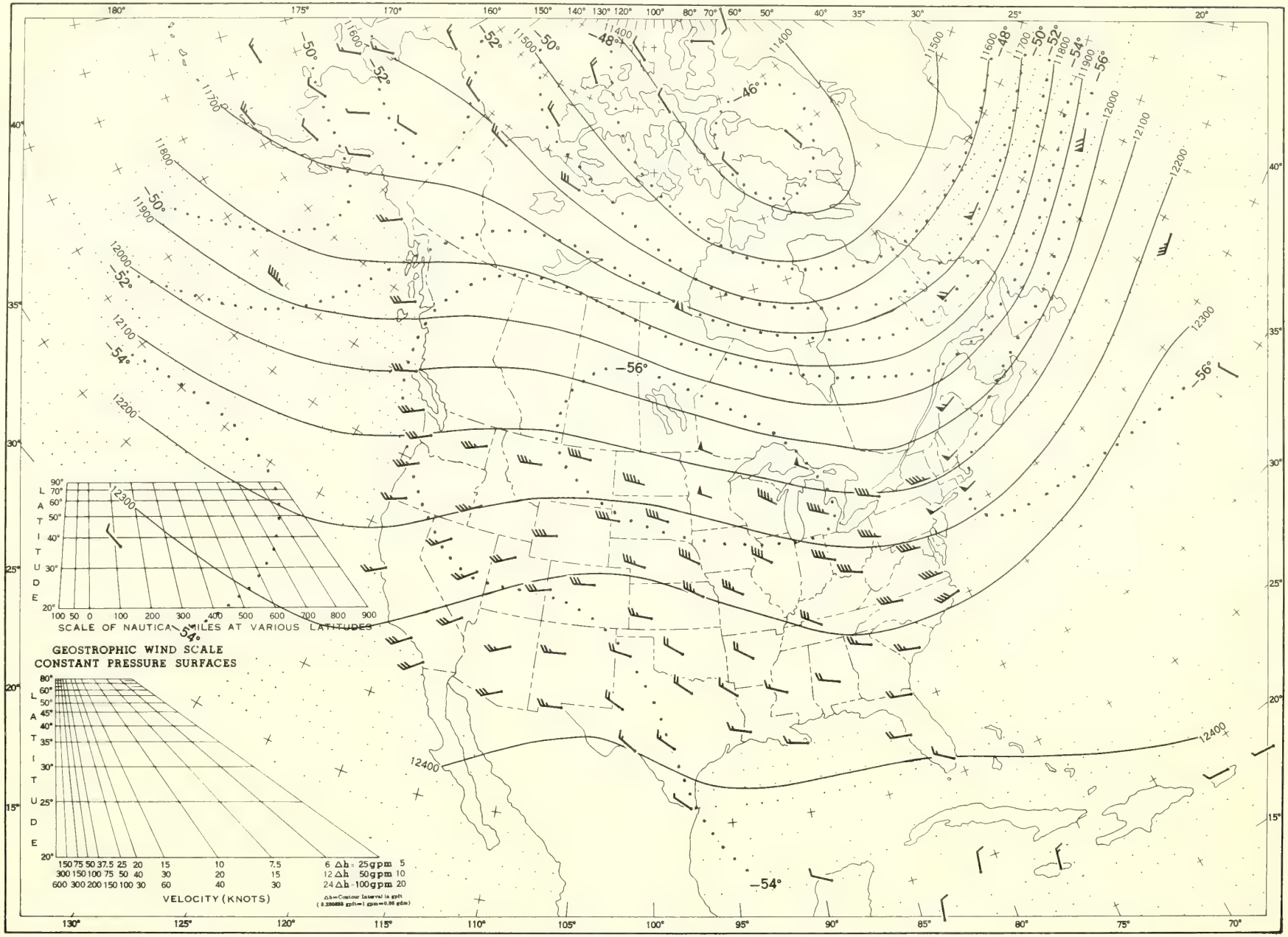
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.



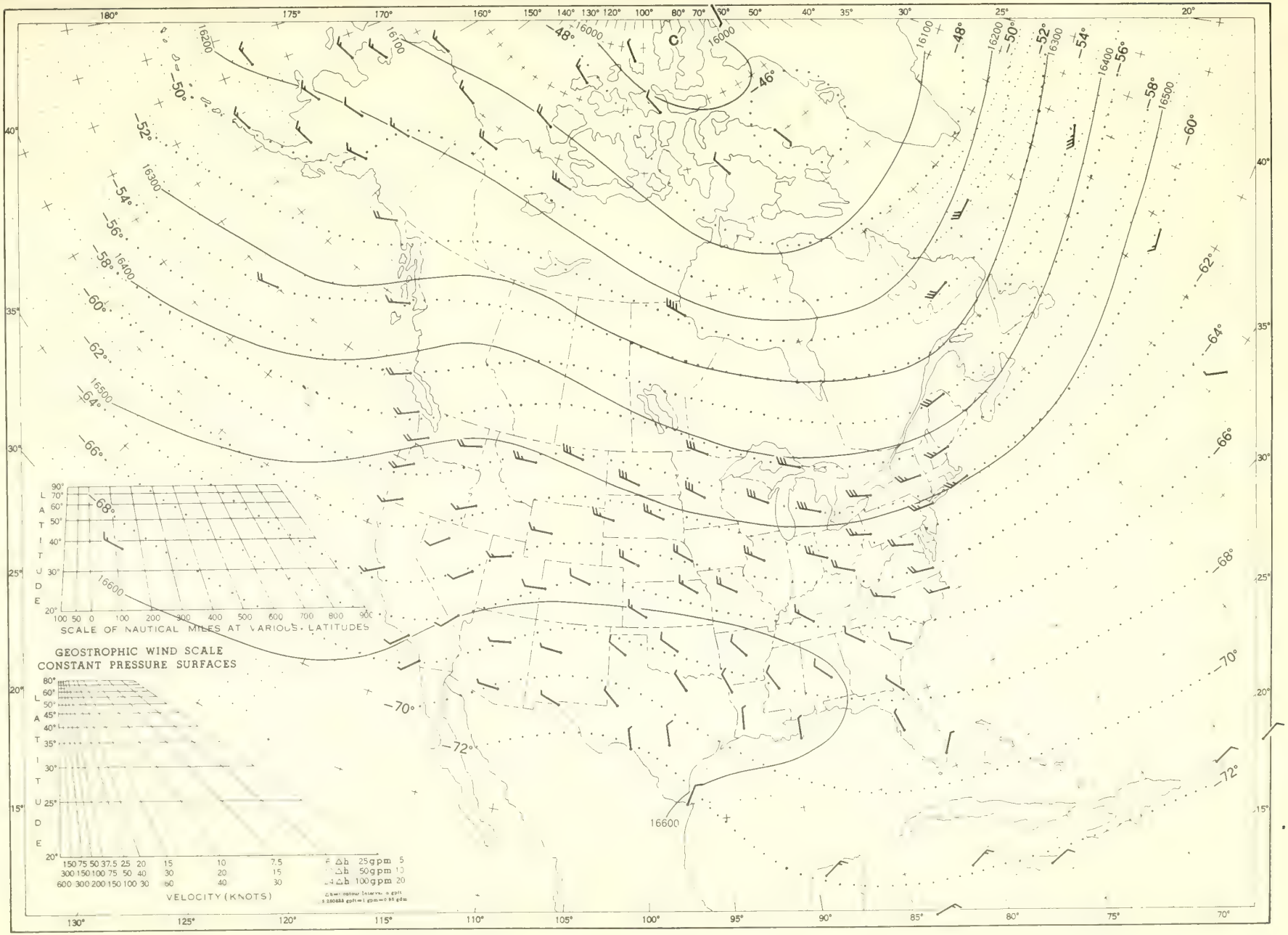
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.



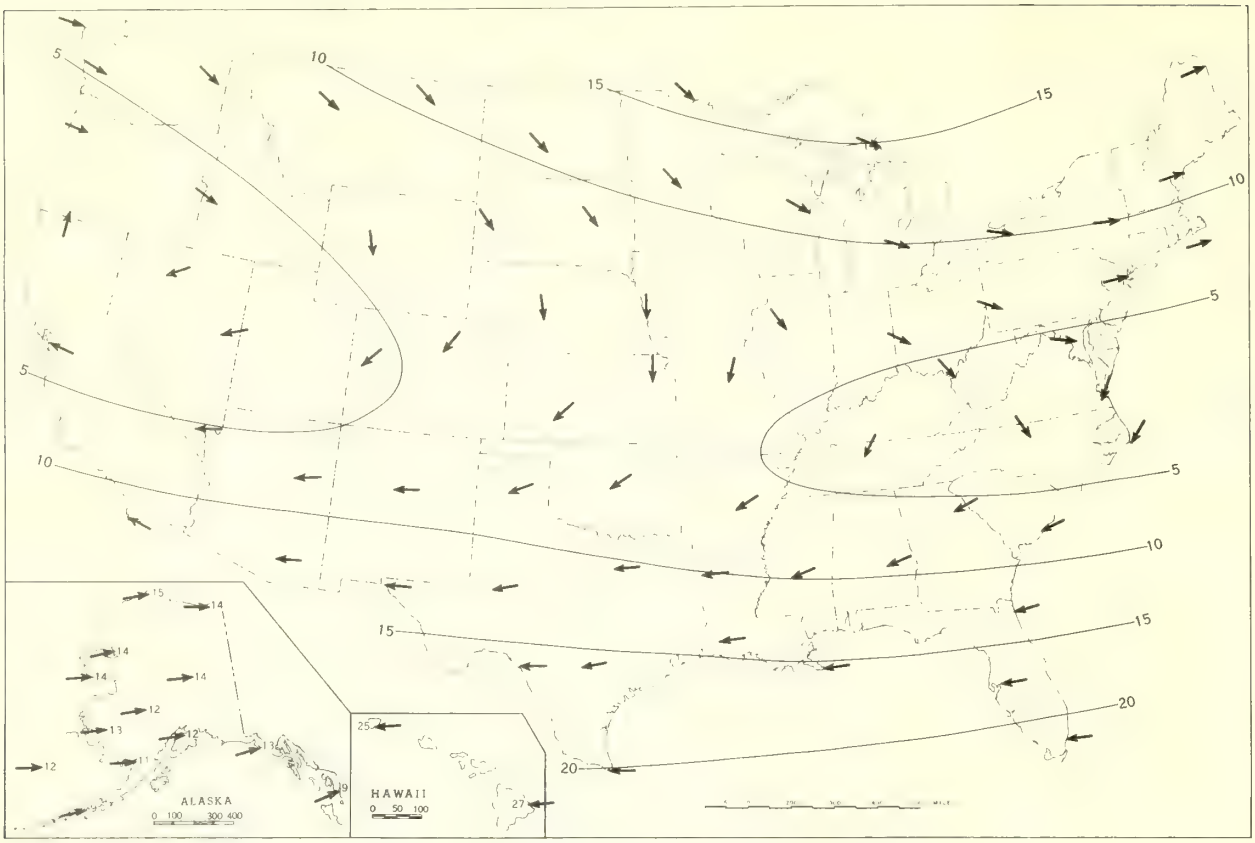
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, September 1963. Average Height and Temperature, and Resultant Winds.

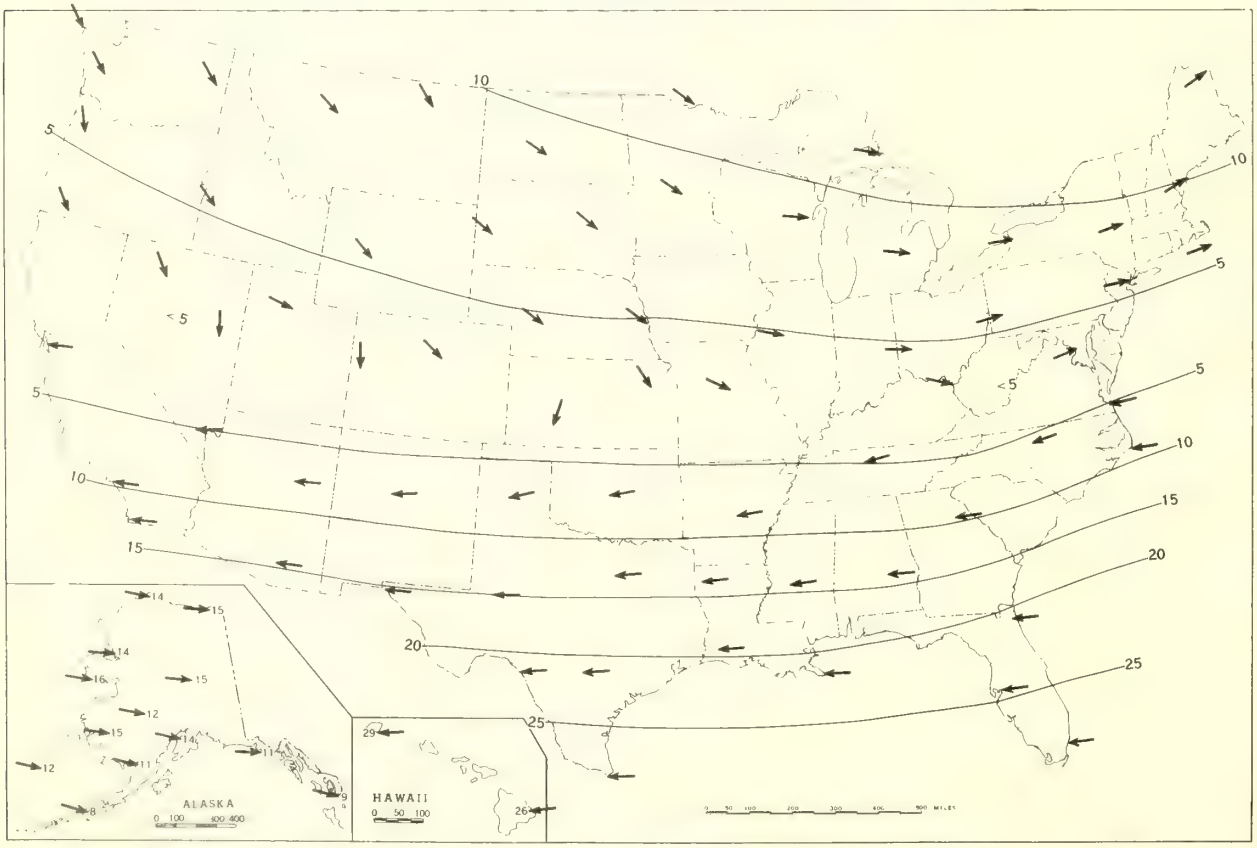


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, September 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, September 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM-WB--ASHEVILLE---12-20-63---1825

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
ROBERT M. WHITE, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

FEB 11 1964

OCTOBER 1963
Volume 14 No. 10

ASHEVILLE: 1964

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 10 OCTOBER 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

The "jet stream" was located farther north than usual during October. This permitted high pressure to develop and remain over the United States during most of the month. The presence of this anticyclone had numerous effects on October weather.

It managed to block the hurricanes causing them to hesitate before moving northward and northeastward along their usual courses. The anticyclone caused October to be unusually warm by inhibiting the formation of clouds which allowed more of the sun's heat to reach the ground. Numerous stations from Arizona to New England and from Montana to Florida reported that October ranked first or second of record among the warmest of Octobers. At Cheyenne, Wyo., it was the warmest October since records began in 1871. Chattanooga, Tenn., and Pensacola, Fla., recorded 100 percent sunshine on 17 days. It was the warmest October of record at Ft. Worth and Dallas, Tex., at Moline and Springfield, Ill., and numerous other locations scattered from Utah to the Atlantic Ocean.

The absence of clouds, which resulted in high daytime temperatures, also permitted rapid radiation at night. Although maximum daily temperatures at Pensacola, Fla., averaged 2.9° above normal, the early morning minimums averaged 2.7° below normal. At Raleigh, N. C., maximum temperatures averaged 1.4° above normal and minimums averaged 2.6° below normal. At Burlington, Iowa, the average daily temperature range was 25.6° as compared to a normal range of 21.6°. Afternoon temperatures at Harrisburg, Pa., averaged 6.0° above normal and minimums at Harrisburg averaged 3.1° below normal. Newark, N. J., recorded 19 clear days, setting a new record for October. Chattanooga, Tenn., recorded 20 clear days. Numerous locations enjoyed "perfect Indian summer" weather and abundant sunshine, although some of the effects were detrimental.

The absence of clouds was accompanied by the absence of precipitation. So October 1963 was not only one of the warmest Octobers of record but also one of the driest. At many stations it was the driest of record; at others, it ranked second or third among the driest. Shreveport, La., Jackson and Meridian, Miss., Pensacola, Fla., and Macon, Ga., were among the southeastern stations where no rain fell during the entire month. Numerous other stations, including Knoxville and Memphis, Tenn., Huntsville, Ala., Columbia, S. C., and Huntington, W. Va., received only light sprinkles.

The absence of rain, the high afternoon temperatures, and the low relative humidity caused forests and grassland to become very dry. Fire hazards increased. In some areas, especially in the Northeast, numerous fires were in progress simultaneously and it became necessary to close some forests to the public.

The soil moisture deficiencies increased. Drought conditions became critical. Pastures deteriorated. Some farmers delayed fall seeding operations hoping for rain. Other seed was "dusted in". The seed lay in the soil, too dry to germinate.

Continued fair weather and the absence of storms had another effect. The winds were lighter than usual in some areas. At Abilene, Tex., the winds were too light for pumping water and farmers and ranchers found it necessary to haul water for their livestock.

In contrast, Charleston. S. C., reported October 1963 as the windiest October since 1916. The wind averaged 12.2 m.p.h. The center of hurricane Ginny remained offshore, but wind speeds along the beaches reached 40 to 50 m.p.h.

Several storms approached the north Pacific coast during October. They produced much cloudiness, light to moderate rain on many days, and substantial rain on several days. Sunshine totaled 37 percent of possible at Tatoosh Island, Wash., 29 percent at Seattle, and 42 percent at Eureka, Calif. There were 26 rainy days at Tatoosh Island, 23 at Seattle, 26 at Astoria, Ore., and 16 at Eureka. The monthly rainfall totals for the four cities were 13.62 inches, 4.16 inches, 9.58 inches, and 4.51 inches, respectively. The respective departures from normal were +5.40 inches, +0.88 inch, +1.80 inches, and +2.22 inches.

In review, the highlights of October 1963 weather include: The jet stream located far to the north, high pressure persisting over much of the Nation, bright sunny days with high afternoon temperatures, many clear cool nights, low relative humidity, light winds, deficient precipitation, drying grasslands and forests, numerous forest and grass fires, drying wells, springs, and creeks, but pleasant Indian summer weather for the completion of the autumn harvest and for other outdoor activities.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Citronelle	98	9	Valley Head	22	30	Garden City	0.58	101 Stations	0.00
Arizona	Buckeye	108	5	Fort Valley	19	14	Granville	6.50	2 Stations	.00
Arkansas	6 Stations	99	8+	Gravette	24	29	Hopper	1.52	45 Stations	.00
California	Death Valley	110	2+	White Mountain 1	-3	12	Honeydew 2WSW	14.09	Torrance	T
Colorado	Uraran	98	3	Walden	10	28	Telluride	3.32	3 Stations	.00
Connecticut	Hartford WBAP	91	7	Coventry	20	13	Putnam Water Works	.97	Wigwam Reservoir	.15
Delaware	2 Stations	84	27+	Georgetown 5SW	31	14	Selbyville	.32	Milford 3WNW	.00
Florida	4 Stations	92	9+	DeFuniak Springs	28	30	West Palm Beach WBAP	13.81	15 Stations	.00
Georgia	Thomaston 2S	92	21	Sandersville	24	31	Savannah Beach	1.71	105 Stations	.00
Hawaii	Kahului WBAP, Maui	91	2	2 Stations	32	10+	Puohokamoa 2 343, Maui	27.92	5 Stations	.00
Idaho	Slate Creek RS	96	2	Grouse	3	31	Preston 2SE	3.29	Homer 4NW	T
Illinois	6 Stations	95	11+	3 Stations	25	30	Virginia	3.20	Harrisburg Disposal Pl.	.02
Indiana	2 Stations	95	12+	Osgood	18	30	Gary Disposal Plant	1.46	Decatur	.00
Iowa	do	97	5	Le Mars 2N	17	29	Bedford	2.84	Dubuque L and D No. 11	.09
Kansas	Plainville	101	6	2 Stations	25	31+	Niles	6.39	2 Stations	.00
Kentucky	2 Stations	94	11+	Blaine 1W	16	30	Williamstown 5WSW	1.47	18 Stations	.00
Louisiana	3 Stations	98	14+	Bonita 4SSW	29	30	Winnsboro	1.52	75 Stations	.00
Maine	2 Stations	89	7	Long Falls Dam	15	1	Fort Kent	6.11	South Andover	1.42
Maryland	do	89	27+	Oakland 1SE	20	14	Princess Anne	.74	13 Stations	.00
Massachusetts	do	91	8+	2 Stations	22	10	Nantucket WBAP	3.92	South Egremont	.16
Michigan	Detroit WBAP City	92	7	Vanderbilt Trout Sta	15	30	Grand Haven Fire Dept	2.84	Pontiac State Hospital	.13
Minnesota	Beardsley	98	5	Big Fork	12	29	Lake City	3.95	Stewart 4SSW	T
Mississippi	Meadville	99	16	2 Stations	24	30	McHenry 5ESE	1.76	83 Stations	.00
Missouri	Appleton City	99	7	Licking 4N	21	29	Brunswick	4.68	13 Stations	.00
Montana	3 Stations	96	4	Gallatin Gateway 26S	4	31	Troy 18N	3.33	do	.00
Nebraska	2 Stations	98	2+	2 Stations	15	28	Sidney FAA AP	2.85	Wauneta	.00
Nevada	Overton	111	4	Charleston	5	27	Beowawe	3.22	Beatty	.00
New Hampshire	4 Stations	90	8+	2 Stations	18	10+	Durham	2.35	Claremont	.16
New Jersey	Layton 2	91	8	Layton 2	26	31	Sussex	1.97	Belmar 2SW	T
New Mexico	San Jon 2SW	94	1	Eagle Nest 1S	[illegible]	31	Luna Range Station	2.20	3 Stations	.00
New York	2 Stations	91	8+	Peru 2WSW	20	30	Chasm Falls	1.48	4 Stations	.00
North Carolina	Tryon	90	27	Celo 2S	18	31	Southport	6.71	14 Stations	.00
North Dakota	Watford City 14S	98	4	Medora 3NNE	6	28	Brelen	1.89	Medora 22NNW	.00
Ohio	Toledo WB Express AP	91	7	Athens 5NW	18	30	Willoughby 4N	1.48	10 Stations	.00
Oklahoma	7 Stations	100	9+	Grove 1E	25	29	Newkirk	4.45	5 Stations	.00
Oregon	Ontario KSRV	93	3	Hampton	5	26	Otis 2NE	11.40	Crowley Ranch	.06
Pennsylvania	De Vault 1W	93	20	2 Stations	20	13+	Donora	3.09	7 Stations	.00
Puerto Rico	Aquirre	98	28	Guineo Reservoir	59	23	Mona Island	11.75	Culebra Island	.64
Rhode Island	2 Stations	86	7	Kingston	27	14	Kingston	1.94	Block Island WBAP	1.49
South Carolina	Lake City	91	13	Chester 2WSW	26	13+	McClellanville	4.68	11 Stations	.00
South Dakota	Huron WBAP	102	5	Deerfield 5NW	2	28	Ridgeview	3.03	Columbia 8N	.15
Tennessee	4 Stations	94	13+	Mountain City 2	16	31	Waverly	.35	59 Stations	.00
Texas	Possum Kingdom Dam	102	5	2 Stations	33	31+	Falcon Dam	6.25	30 Stations	.00
Utah	Saint George PH	99	2	Silver Lake Brighton	14	31	Lewiston	3.38	Pangvitch	.02
Vermont	Vernon	91	8	Chelsea	18	14	Bloomfield	1.26	Union Village Dam	.10
Virginia	4 Stations	89	8+	Chilhowie 1S	19	31	Norfolk WBAP	1.21	8 Stations	.00
Washington	Dayton 1WSW	88	15	Chesaw 4NNW	13	30	Spruce	20.29	2 Stations	T
West Virginia	Petersburg	90	7	Buckeye	18	31	Valley Head	1.00	5 Stations	T
Wisconsin	Lone Rock FAA AP	94	6	2 Stations	18	29	Mather 5NW	3.10	Chilton Sewage Plant	.07
Wyoming	Arvada 3N	95	4	Burgess Junction	0	31	Upton	1.68	Deaver	.00

\+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
ALABAMA	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
BIRMINGHAM	610	995.8	1021.3	82	53	67.5	3.8	91	12	33	30	1	0	50	59	0.11	- 2.84	0.11	1	1	0.0	0	5.4	ESE	25	N	12	21	6	4	2.5	87
HUNTSVILLE	605	999.3	1021.2	83	52	67.5	4.3	91	12	33	30	1	0	48	55	T	- 2.72	T	0	1	0.0	0	6.4	SE	29*	SSE	5	22	6	3	2.4	
MOBILE	211	1017.1	1019.5	84	59	71.7	2.8	93	9	41	30	5	0	55	62	0.06	- 2.97	0.06	1	1	0.0	0	7.1	NE	21*	NNE	29+	17	11	3	3.4	
MONTGOMERY	195	1012.2	1020.5	81	54	67.3	0.7	89	4	34	30	0	0	53	65	0.02	- 2.26	0.02	1	0	0.0	0	4.8	E	25	NW	29	23	4	4	2.6	82
ALASKA												8																				
ANCHORAGE	90	989.3	994.3	43	31	36.8	1.8	60	6	15	29+	0	20	29	77	1.01	- 0.86	0.39	9	0	4.0	4	4.7	N	29*	SE	6	2	4	25	8.4	32
ANNETTE	110	999.3	1003.2	52	45	48.9	2.2	62	14+	35	29	0	0	43	81	19.44	2.56	3.40	28	2	T	0	15.8	SSE	44*	SSE	10	3	1	27	8.8	
BARROW	22	1009.4	1010.3	15	8	11.6	- 5.0	37	3	-21	30	0	31	6	77	0.92	0.42	0.28	15	0	1.2	11	14.2	NE	55*	W	3	4	2	25	8.3	
BARTER ISLAND	39	1005.9	1007.8	19	11	14.8	- 2.4	36	3	- 5	30+	0	31	10	78	1.31	0.47	0.26	24	0	12.9	10	17.0	ENE	58*	W	3	0	0	31	9.8	
BETHEL	125	997.9	999.3	31	19	25.1	- 6.3	52	5	- 5	28	0	27	22	86	0.92	- 0.62	0.59	9	0	2.7	2	12.1	NNE	36*	S	5	6	1	24	7.7	
COLD BAY	94	996.7	1000.5	42	35	38.1	- 2.0	58	5	25	25	0	8	32	77	3.03	- 1.56	1.36	20	0	4.2	2	18.9	NNW	44*	W	28	0	1	30	9.6	
CORDOVA	40	992.4	994.2	49	34	41.5	1.7	62	3	25	25	0	15	37	88	10.44	- 1.46	3.63	23	0	0.3	T	6.8	E	30*	ESE	6	0	7	24	8.9	
FAIRBANKS	436	981.9	999.2	33	20	26.4	0.2	55	6	- 4	28	0	27	21	81	1.51	0.66	0.58	12	0	11.6	7	4.8	N	15*	N	21+	2	5	24	8.4	
JUNEAU	17	999.3	1000.0	49	40	44.6	3.0	55	15	29	6+	0	3	40	85	7.78	- 0.55	0.88	26	0	T	T	14.5	ESE	38*	ESE	11	1	2	28	9.3	26
KING SALMON	43	994.2	995.8	39	24	31.8	- 3.9	57	4	3	25	0	26	27	81	1.94	- 0.21	0.64	13	0	1.3	1	12.1	N	53*	SE	5	2	10	19	8.2	
KOTZEBUE	10	1001.9	1002.5	24	12	17.9	- 6.8	43	6	-11	27	0	29	14	81	1.26	0.67	0.45	8	0	10.9	8	11.7	ENE	32*	E	5	11	2	18	6.3	
MC GRATH	334	985.4	998.9	30	15	22.4	- 4.4	53	6	-14	28	0	28	18	80	0.75	- 0.57	0.28	10	0	10.8	8	5.5	N	21	SSW	6	2	4	25	8.5	
NOME	13	1000.2	1000.8	32	19	25.7	- 4.0	50	1	2	28	0	28	18	73	0.78	- 0.93	0.60	5	0	1.0	1	12.2	N	41*	NNW	7	7	6	18	7.0	37
ST. PAUL ISLAND	22	1001.4	1002.4	41	32	36.0	- 1.2	48	5+	23	24	0	16	33	85	2.60	- 0.55	0.61	24	0	3.5	2	20.5	NW	56*	W	28	0	4	27	9.3	
SHEMYA	122	1009.3	1012.7	46	39	42.3	2.6	52	1	33	13+	0	0	37	82	3.03	0.27	0.61	20	0	1.7	T	19.3	NW	51*	SW	27	1	8	22	8.3	
YAKUTAT	28	995.5	996.7	49	38	43.2	1.3	57	3	28	5	0	6	39	89	30.00	10.41	6.97	26	4	0.6	T	8.5	E	38*	ESE	31+	2	2	27	9.0	
ARIZONA																																
FLAGSTAFF	6993	793.7	1019.1	66	33	49.8	2.3	81	1	25	15+	0	13	31	58	1.25	- 0.27	0.62	6	3	0.0	0	5.6	SSW	20*	SSW	29+	18	4	9	3.9	
PHOENIX	1117	974.2	1012.8	90	62	76.2	4.0	102	3	55	15	16	0	45	37	1.46	1.00	1.42	4	1	0.0	0	6.0	ESE	31*	SW	19	19	8	4	3.0	88
PRESCOTT	5014	849.4	1016.5	76	46	60.8	3.2	90	1	36	13	1	0	38	50	0.87	0.14	0.75	5	3	0.0	0	7.9	SSW	29	SW	12	18	6	7	3.6	82
TUCSON	2584	926.0	1013.2	87	59	73.2	3.2	96	3+	51	20	13	0	39	35	0.60	- 0.04	0.46	2	1	0.0	0	8.1	SSE	25	SW	12+	19	6	6	3.4	86
WINSLOW	4880	854.5	1017.7	79	46	62.4	4.5	89	1	36	15	0	0	38	49	1.05	0.39	0.78	6	3	0.0	0	7.7	SW	32*	WSW	30	17	9	5	3.6	
YUMA	199	1007.2	1012.6	93	66	79.3	2.0	106	8	58	14	23	0	52	45	0.91	0.53	0.77	3	1	0.0	0	5.0	N	35	SE	18	16	10	5	3.3	81
ARKANSAS																																
FORT SMITH	449	1002.1	1019.1	88	53	70.6	6.8	96	11+	34	29	11	0	51	56	0.07	- 3.38	0.05	3	1	0.0	0	5.7	NE	25	W	16	20	6	5	3.0	90
LITTLE ROCK	257	1006.7	1019.9	88	52	70.1	7.0	97	11+	35	30	15	0	51	59	0.10	- 2.78	T	1	2	0.0	0	5.4	WSW	27	E	15	22	8	1	2.4	87
TEXARKANA	361	1005.9	1019.4	87	58	72.3	6.2	95	9	42	29	12	0	53	56	T	- 2.98	T	0	0	0.0	0	6.3	SE								81
CALIFORNIA																																
BAKERSFIELD	494	998.3	1016.2	77	56	66.6	- 0.2	94	2	50	12	3	0	53	65	0.73	0.41	0.27	3	0	0.0	0	4.1	NW	20*	NNW	11	16	5	10	4.4	
BISHOP	4108	875.1		78	42	60.2	3.3	95	1	33	12	3	0			0.08	- 0.35	0.04	4	2	0.0	0						14	10	7	4.2	
BLUE CANYON	5280	840.6		61	45	52.6	- 1.2	83	1	35	12	0	0			3.61	0.20	2.02	8	0	0.0	0	4.6	SSE	30	S	22	10	6	15	5.9	
BURBANK	699	989.6	1015.5	78	56	67.1	0.8	88	10	48	31	0	0	52	65	0.74	0.25	0.38	4	0	0.0	0	5.0	S	18*	SW	11+	13	10	8	4.7	
EUREKA U	43	1015.2		63	51	57.0	2.6	73	14	42	26	0	0			5.41	2.22	1.53	13	0	0.0	0	6.3	SE#	34	S	14	4	8	19	7.5	42
FRESNO	326	1003.7	1015.7	78	53	65.4	1.1	95	2	41	31	3	0	52	67	0.95	0.52	0.50	4	0	0.0	0	5.3	WNW	22	NW	11	15	8	8	4.1	75
LONG BEACH	34	1014.3	1016.0	78	58	68.3	2.3	87	10	53	31	0	0	57	73	0.43	0.26	0.40	3	1	0.0	0	5.0	WNW	22*	W	11	12	9	10	5.3	
LOS ANGELES	97	1011.8	1015.7	75	61	67.9	4.5	82	7	55	31	0	0	58	74	0.42	0.03	0.42	1	0	0.0	0	7.3	W	23*	W	11	12	7	12	5.0	
LOS ANGELES U	312			78	61	69.1	1.7	87	7	56	31	0	0			0.57	0.16	0.35	3	1	0.0	0	5.2	W#	30	N	18	13	10	8	4.6	71
MT SHASTA R	3544	893.6		63	39	50.9	- 1.0	88	1	25	31	0	6			2.83	0.39	1.43	8	0	0.0	0						11	8	12	5.6	
OAKLAND	3	1016.5	1016.9	68	56	62.0	0.9	76	7	46	31	0	0	55	79	1.44	0.66	0.83	6	0	0.0	0	7.8	WNW	30*	S	10	13	8	10	5.2	
POINT ARGUELLO R	367	1002.4		69	50	59.5	1.1	79	10	42	13	0	0			0.83	0.41	0.41	6	0	0.0	0	5.0		21*	NW	30+	8	10	13	6.2	
RED BLUFF	341	1003.1	1016.0	75	52	63.6	- 2.0	102	1	41	28+	2	0	48	62	2.21	0.84	1.45	9	1	0.0	0	8.2	SSE	33	SE	4	9	10	12	5.4	75
SACRAMENTO	17	1015.1	1016.6	77	52	64.2	- 0.8	99	1	38	31	1	0	53	75	1.09	0.32	0.85	6	0	0.0	0	4.1	SW	24	SW	4	13	9	9	5.0	78
SACRAMENTO U	23			75	54	64.5	- 0.2	97	1	43	31	1	0			1.27	0.47	1.02	6		0.0	0										
SANDBERG R	4517	864.1		66	50	58.1	- 0.6	87	2	39	31	0	0			2.11	1.62	1.10	4	1	T	0	10.4	S	33*	NNW	12+	16	8	7	4.2	
SAN DIEGO	13	1011.9	1015.2	76	61	68.2	2.6	81	27+	53	17	0	0	59	74	0.13	- 0.36	0.12	2	0	0.0	0	5.6	WNW	21	NW	10	10	12	9	5.1	68
SAN FRANCISCO	8	1016.5	1017.2	70	54	62.2	1.7	82	7	45	31	0	0	53	76	1.34	0.60	0.65	7	0	0.0	0	8.6	W	32	W	29	11	10	10	5.3	
SAN FRANCISCO U	52			69	57	62.9	1.5	78	7	52	31+	0	0			1.39	0.50	0.74	5	0	0.0	0	6.7	W#	25	SE	10					68
SANTA CATALINA	1568	960.0		71	58	64.7		81	25	51	16	0	0			0.35		0.26	3	0	0.0	0						14	7	10	4.8	
SANTA MARIA	238	1007.9	1016.7	73	51	62.4	2.0	83	25+	45	13	0	0	53	79	1.04	0.44	0.52	4	0	0.0	0	6.0	WNW	25*	WNW	29	11	11	9	5.0	
STOCKTON	28	1014.8	1016.5	75	53	64.0		94	1	44	31	1	0	52	71	1.44		0.81	6	0	0.0	0	6.0	W	21*	WNW	23+	10	14	7	5.1	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet		Average speed	Prevailing direction	Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground			Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO																																
ALAMOSA	7536	775.4		69	29	48.9	4.5	77	2+	20	16	0	23			0.27	- 0.33	0.19	3	0	0.7	T					14	10	7	4.3	
COLORADO SPRINGS	6173	814.2	1017.1	72	44	58.2	7.9	83	4+	27	31	0	1	31	41	0.39	- 0.30	0.39	1	0	3.0	10	9.2	NNE	32*	NNE	13	13	11	7	4.5	
DENVER	5283	840.4	1016.8	74	42	57.9	5.5	85	4+	25	27	0	2	32	45	0.31	- 0.70	0.16	2	0	1.1	10	7.5	S	27	N	13	18	6	7	4.1	83
GRAND JUNCTION	4849	862.1	1016.9	75	48	61.3	6.3	88	1	34	31	0	0	33	41	0.60	- 0.14	0.40	5	1	0.0	0	5.4	SE	32	SW	12	16	9	6	4.1	75
PUEBLO	4639	858.8	1016.5	78	44	61.1	6.3	88	9+	33	31	0	0	34	42	0.25	+ 0.74	0.25	1	0	T	0	8.7	WSW	43	N	31	16	9	6	3.7	79
CONNECTICUT																																
BRIDGEPORT	7	1019.2	1020.0	68	48	57.9	2.5	81	19	38	30+	0	0	47	70	0.33	+ 3.05	0.20	2	1	0.0	0	12.4	WSW	35*	NW	30+	16	9	6	3.7	
HARTFORD	169	1012.6	1018.5	73	42	57.1	4.8	91	7	31	10+	1	3	42	64	0.35	+ 2.83	0.21	2	1	T	T	6.3	S	33	NW	30	18	6	7	3.9	82
NEW HAVEN	6	1018.9		67	46	56.6	2.6	79	21+	33	13	0	0			0.26	+ 3.19	0.23	2	1	0.0	0	7.3		34	NW	30	18	7	6	3.8	82
DELAWARE																																
WILMINGTON	78	1017.2	1020.5	71	46	58.4	1.8	81	19+	36	31+	0	0	45	64	0.21	+ 2.70	0.21	1	1	0.0	0	6.8	NW	38*	WNW	3	17	8	6	3.5	
DIST.OF COLUMBIA																																
WASHINGTON U	72			75	51	63.0		86	7	42	30	0	0			0.00	- 2.97	0.00	0		0.0	0										
WASH NATL AP	14	1016.2	1020.8	74	48	61.2	2.2	84	7	40	31+	0	0	46	62	T	- 3.07	T	0	1	0.0	0	7.4	S	39	NW	29	18	6	7	3.5	83
FLORIDA																																
APALACHICOLA U	13	1017.1		80	62	70.5	- 0.7	87	28	45	30	0	0			0.06	- 2.38	0.04	2	0	0.0	0	7.3	N	34	E	15	24	5	2	2.0	88
DAYTONA BEACH	31	1016.0	1017.8	79	64	71.8	- 1.6	86	28	45	31	0	0	63	77	2.71	- 2.90	0.65	10	1	0.0	0	10.6	NNE	28*	N	23	13	10	8	4.6	
FORT MYERS	13	1015.7		86	65	75.8	- 0.3	89	22+	54	31+	0	0			0.05	- 4.04	0.05	1	2	0.0	0	10.3		27*	NNE	7+	19	9	3	3.5	
JACKSONVILLE	24	1017.0	1018.4	79	60	69.5	- 1.5	87	28	41	31	0	0	59	75	1.53	- 3.63	0.58	7	0	0.0	0	8.4	N	40	NE	24	15	8	8	3.7	75
KEY WEST	5	1014.0	1015.1	83	74	78.4	- 0.6	87	4+	69	31+	0	0	68	73	1.82	- 4.00	1.47	7	2	0.0	0	13.7	ENE	36	NE	6	16	9	6	4.2	75
LAKELAND U	214			82	65	73.4	- 1.1	87	28+	50	30	0	0			0.33	- 2.60	0.23	5	1	0.0	0	8.5					15	14	2	3.4	74
MIAMI BEACH	9			82	72	77.2	- 1.2	89	23	64	30	0	0			3.84	+ 2.87	1.92	11	0	0.0	0	15.5	E				8	14	9	5.5	63
MIAMI	7	1014.0	1015.1	83	69	76.2	- 1.6	86	27+	61	30	0	0	67	74	4.43	+ 3.78	2.14	12	2	0.0	0	11.4	NE	32*	ENE	6	6	15	10	5.7	
ORLANDO	106	1012.9	1017.4	83	65	73.8	- 0.2	88	28+	49	31	0	0	62	71	0.46	- 3.50	0.15	6	1	0.0	0	10.4	NNE	21*	N	29+	13	13	5	3.8	
PENSACOLA	13			81	59	70.4	0.1	90	22	38	30	1	0			0.00	- 3.51	0.00	0	0	0.0	0	6.4	NE	33	N	29					
TALLAHASSEE	58	1016.9	1019.6	82	54	67.9	- 1.7	88	28+	32	31	0	1	55	69	0.45	- 1.98	0.45	1	0	0.0	0	9.3	N	25*	N	29	25	2	4	2.3	
TAMPA	19	1016.1	1017.7	86	62	73.7	- 1.0	91	1	41	30	1	0	61	71	0.29	- 2.49	0.25	3	0	0.0	0	12.6	NNE	29*	E	15	17	12	2	3.2	75
WEST PALM BEACH	15	1015.1	1016.2	84	69	76.3	- 1.9	88	21	58	30	0	0	65	72	13.81	5.85	6.64	13	4	0.0	0	11.4	ENE	37*	ENE	6	6	16	9	5.9	
GEORGIA																																
ATHENS	803	991.8	1020.8	78	51	64.7	1.7	88	12	36	31	0	0	50	64	T	- 2.86	T	0	1	0.0	0	6.3	NE	23*	WNW	28	25	4	2	1.6	
ATLANTA	1005	979.0	1021.2	77	54	65.1	2.4	85	21	39	31+	0	0	49	62	T	- 2.44	T	0	0	0.0	0	6.4	ENE	20*	NW	28	26	3	2	1.6	93
AUGUSTA	143	1013.3	1020.1	79	48	63.7	- 1.5	88	12	29	31	0	2	51	69	0.01	- 2.00	0.01	1	1	0.0	0	6.4	NW	25*	NNW	12	27	1	3	1.7	
COLUMBUS	385	1006.3		80	52	66.3	0.9	89	21	33	31+	0	0			0.00	- 1.77	0.00	0	0	0.0	0	6.7		22*	NW	28	23	4	4	2.6	
MACON	356	1006.4	1020.1	80	52	66.1	- 0.1	90	21	34	31	1	0	51	63	0.00	- 2.01	0.00	0	0	0.0	0	6.7	NE	21	NW	29	26	2	3	1.9	90
ROME	637	998.3		80	45	62.1	0.9	88	21	28	30	0	2			T	- 2.93	T	0	1	0.0	0						26	3	2	1.6	
SAVANNAH	48	1016.7	1019.3	79	54	66.7	- 0.5	86	28	35	31+	0	0	53	67	0.02	- 2.56	0.02	1	1	0.0	0	10.8	NE	25	N	29	21	7	3	2.7	86
THOMASVILLE U	283			80	58	68.8	- 0.9	89	4	41	30	0	0			T	- 2.27	T	0		0.0	0										
HAWAII																																
HILO	31	1014.0	1016.0	83	67	75.0	- 0.1	84	31	64	27	0	0	68	80	11.36	0.56	1.75	27	0	0.0	0	8.1	WSW	23	E	11+	1	15	15	7.3	33
HONOLULU	7	1015.5	1015.9	87	73	79.7	1.5	88	27+	65	31	0	0	66	66	1.08	- 0.76	0.38	10	0	0.0	0	10.5	ENE	27	E	6	12	13	6	4.8	71
KAHULUI	44	1012.6	1015.7	85	70	77.5		91	2	64	27+	1	0	67	73	1.03		0.39	12	0	0.0	0	15.5	NE	38*	ENE	5	14	10	7	4.8	72
LIHUE	115	1011.5	1017.2	85	72	78.6	1.7	87	4	66	10+	0	0	68	72	1.02	- 3.01	0.31	17	4	0.0	0	12.6	NE	24	NE	7	7	17	7	5.5	44
IDAHO																																
BOISE	2838	920.7	1016.7	69	47	57.8	5.2	91	3	25	26	1	3	40	56	0.99	0.15	0.44	10	2	T	T	7.7	SE	29	SE	4	5	11	15	6.5	52
IDAHO FALLS 42NW R	4790			67	30	48.5	4.4	83	1	12	27	0	18			0.32	- 0.09	0.15	5		0.0	0	7.0	N	33A	SSW	23					
IDAHO FALLS 46W R	4933	850.4		66	32	49.2	4.3	82	1	11	27	0	15			0.36	- 0.30	0.22	3		1.0	1	5.4	SW	28A	SW	23					
LEWISTON	1413	964.7		68	45	56.1	4.1	83	2	28	27	0	3			0.58	- 0.63	0.40	6	0	0.0	0						8	6	17	6.4	
POCATELLO	4444	865.1	1017.9	71	39	54.9	5.8	87	3	18	27	0	6	35	52	0.32	- 0.57	0.15	5	1	0.0	0	9.1	WSW	38	S	5	9	18	4	5.3	71
ILLINOIS																																
CAIRO U	314	939.2		81	57	69.0	7.1	92	11	38	30	1	0			0.36	- 2.52	0.37	2	3	0.0	0	6.7	S#	29	SW	31	21	6	4	2.8	86
CHICAGO O HARE	658	994.8	1019.6	75	46	60.5		91	6	27	30+	1	5	46	62	0.28		0.11	6	2	0.0	0	7.9	S	23*	WNW	16	13	10	8	4.7	
CHICAGO MIDWAY	610	997.0	1019.9	76	53	64.3	8.9	94	6	36	30	1	0	48	61	0.62	- 2.16	0.44	4	1	0.0	0	9.8	S	24	NW	28+	13	10	8	4.6	62

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation								Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile								
		Station ∅	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ILLINOIS																																
MOLINE	582	996.7	1019.0	77	51	64.4	10.1	92	6	33	29	1	0	50	65	0.63	- 1.83	0.23	6	1	0.0	0	7.9	SSW	23	NW	28	15	10	6	4.1	66
PEORIA	652	998.0	1020.4	77	51	64.2	8.9	90	6	34	30+	1	0	47	60	1.42	- 1.11	0.74	4	3	0.0	0	8.3	S	23	W	28	17	6	8	3.7	77
ROCKFORD	728	991.9	1019.2	75	49	62.0	9.5	90	6	32	30	1	1	49	66	1.04	- 1.66	0.80	5	4	0.0	0	8.2	SSW	20*	SSW	30+	14	7	10	4.7	
SPRINGFIELD	588	996.1	1019.3	80	53	66.4	9.7	91	7	35	30+	2	0	47	56	1.07	- 1.84	0.90	5	3	0.0	0	10.1	S	28	NW	28	17	10	4	3.2	83
INDIANA																																
EVANSVILLE	381	1004.6	1020.6	83	45	64.0	5.4	93	11	27	30	4	2	45	58	0.42	- 2.15	0.27	2	2	0.0	0	5.0	NW	31	NW	27	20	8	3	2.5	88
FORT WAYNE	791	989.5	1020.9	77	47	61.7	8.2	89	7+	27	30	0	1	44	57	0.48	- 2.38	0.46	3	1	0.0	0	7.0	WSW	30	SW	2	15	9	7	4.0	78
INDIANAPOLIS	793	990.6	1020.8	77	47	62.1	6.7	86	23+	27	30	0	1	45	59	0.17	- 2.45	0.26	3	1	0.0	0	7.1	E	26*	N	28	16	10	5	3.7	80
SOUTH BEND	768	992.0	1020.1	75	49	61.8	8.4	92	6	32	30	1	1	44	58	1.21	- 1.96	0.57	4	3	0.0	0	8.0	S	20*	NW	28+	15	6	10	4.6	
IOWA																																
BURLINGTON	694	993.5	1019.1	79	53	66.1	10.7	92	6	34	29	1	0	48	59	1.19	- 1.51	0.56	8	6	0.0	0	9.9	SSW	38	SW	16	19	7	5	3.6	81
DES MOINES	948	987.1	1018.3	76	53	64.5	9.8	95	5	28	29	2	1	50	64	2.56	0.50	1.87	7	5	0.0	0	8.8	S	28	N	31	16	10	5	3.7	73
DUBUQUE	1065	993.2		72	50	61.0	10.3	86	6	34	29	0	0			0.26	- 2.48	0.13	5	3	0.0	0			28*	SSW	1	8	14	9	5.1	
SIOUX CITY	1095	975.8	1017.2	74	48	61.3	8.3	93	5	25	29	3	2	48	68	0.82	- 0.60	0.44	3	3	0.0	0	7.8	ESE	31	S	23	15	6	10	4.4	63
WATERLOO	868	985.5	1017.6	75	48	61.4	9.2	95	6	27	29	2	1	49	69	1.26	- 0.86	0.52	8	6	0.0	0	8.9	S	22*	NW	28	15	8	8	4.5	
KANSAS																																
CONCORDIA	1470	967.1	1016.8	79	53	65.9		96	4	32	29	6	1	49	60	2.93		1.17	5	5	0.0	0	12.0	S	32	S	23+	21	4	6	2.8	83
DODGE CITY	2594	929.2	1016.7	81	52	66.5	8.2	94	2+	35	31	9	0	45	54	0.65	- 0.77	0.54	4	4	0.0	0	12.0	SSW	35	N	31	20	5	6	3.2	84
GOODLAND	3645	890.2	1016.6	78	43	60.4	7.3	92	4	26	31	4	3	40	54	0.03	- 0.73	0.03	1	1	T	0	11.4	S	36*	SSW	13	22	5	4	2.8	
TOPEKA	877	982.2	1017.6	82	53	67.6	9.4	96	5	28	29	7	1	49	59	0.96	- 1.38	0.34	6	6	0.0	0	10.6	S	49	SE	16	19	5	7	3.4	80
WICHITA	1321	968.7	1017.1	80	55	67.7	7.8	93	10+	37	29	6	0	51	62	2.47	0.07	1.37	2	5	0.0	0	11.1	S	42	N	31	17	5	9	3.7	77
KENTUCKY																																
COVINGTON	869	988.8	1020.7	77	46	61.8	4.7	88	11	25	30	0	1	43	55	0.25	- 2.01	0.13	4	2	0.0	0	6.2	SSW	21*	SW	2	19	9	3	3.1	
LEXINGTON	979	985.4	1021.3	78	50	63.9	5.8	86	20+	28	30	0	1	43	51	0.33	- 1.95	0.15	3	3	0.0	0	6.5	SSW	25*	WNW	11	23	7	1	2.3	
LOUISVILLE	474	1001.3	1020.7	79	48	63.5	6.1	89	11	32	30	0	1	48	63	0.81	- 1.44	0.73	3	1	0.0	0	4.6	SSE	23	S	2	19	9	3	2.8	86
LOUISIANA																																
ALEXANDRIA	92	1015.0	1020.0	86	52	69.1		92	11+	30	30	7	1	56	72	0.35		0.35	1	3	0.0	0	2.4	S	23	NNW	27	17	10	4	3.1	
BATON ROUGE	64	1016.8	1020.0	87	58	72.7	4.1	93	9+	41	30	10	0	56	64	0.20	- 2.25	0.20	2	2	0.0	0	3.8	NE	22	N	29	22	5	4	3.1	
LAKE CHARLES	14	1018.5	1019.8	85	60	72.7	2.2	92	10	43	30	1	0	61	73	T	- 3.06	T	0	2	0.0	0	5.7	ENE	18*	SSW	31+	15	12	4	3.8	
NEW ORLEANS	3	1017.5	1019.8	83	57	70.0	0.1	89	9	45	30	0	0	61	76	T	- 2.84	T	0	1	0.0	0	4.7	NE	18*	NNE	28	19	10	2	3.1	
NEW ORLEANS AUDUBON	6			85	64	74.4		90	4	53	30	1	0			0.00		0.00	0	0	0.0	0	2.9	NE#	14	NE	29	18	12	1	2.9	74
SHREVEPORT	252	1010.9	1020.1	87	57	71.9	4.6	94	4	44	30	11	0	53	56	0.00	- 2.81	0.00	0	0	0.0	0	6.9	SE	25	SSW	31	19	10	2	2.8	88
MAINE																																
CARIBOU	624	991.5		60	37	47.6	4.6	75	25+	23	22+	0	14			3.40	- 0.04	1.19	10	1	0.0	0						7	11	13	6.2	
PORTLAND	61	1013.0	1017.0	67	38	52.3	3.7	88	7	23	10	0	7	41	71	1.85	- 1.35	1.36	5	1	1.7	1	8.4	NW	45	N	29	18	8	5	3.8	74
MARYLAND																																
BALTIMORE	146	1016.0	1020.8	73	44	58.6	1.6	85	7	35	31	0	0	43	63	T	- 3.18	T	0	0	0.0	0	7.2	W	28	NW	30	19	6	6	3.2	85
BALTIMORE U	14			74	53	63.7	3.7	87	7	42	30	0	0			0.12	- 3.13	0.12	1		0.0	0										
FREDERICK	294			74	42	58.0	2.4	85	7	32	14	0	1			0.30	- 2.83	0.30	1	1	0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	993.3	1016.7	69	47	57.6	4.9	88	7	31	30	0	1			1.75	- 2.00	1.64	4		0.2	T	14.3	SSW	49	NW	30					76
BOSTON	15	1013.0	1017.6	70	50	60.0	5.0	90	7	35	30	1	0	42	57	1.25	- 1.89	1.17	4	1	T	T	12.9	SW	45	NW	30	21	3	7	3.4	82
NANTUCKET	43	1017.6	1018.1	63	49	55.8	2.0	73	21+	35	30	0	0	48	78	3.92	0.22	2.69	4	2	T	0	13.3	SW	65	N	29	17	5	9	4.1	69
PITTSFIELD	1170			68	39	53.5	5.4	85	7	26	10	0	7			0.42	- 2.83	0.31	3		T	0										
WORCESTER	986	981.3	1018.1	68	46	56.8	6.3	85	7	32	30	0	1	40	58	1.46	- 2.01	1.12	3	1	0.5	T	10.3	W	33*	NNW	30	21	2	8	3.3	
MICHIGAN																																
ALPENA	689	993.7		69	39	54.2	6.4	86	6	21	30	0	10			0.95	- 1.47	0.38	7	2	0.0	0	5.7	SW	26	NW	2	9	10	12	5.3	68
DETROIT	619	993.8	1020.4	75	51	62.7	8.9	92	7	33	30	2	0	45	57	0.51	- 2.12	0.57	3	1	0.0	0	8.2	SW	48	NW	2	11	14	6	4.5	75
DETROIT M WAYNE CO	633	996.5	1020.7	73	43	58.2	5.2	91	6	27	30	2	4	45	69	0.57	- 2.00	0.66	4	1	0.0	0	6.4	SW				12	13	6	4.3	
DETROIT WILLOW RUN	711	992.1	1020.5	73	45	59.0	5.1	91	6	29	30	2	1	44	66	0.55	- 1.98	0.58	3	1	0.0	0	7.5	SSW	35*	WNW	2	12	13	6	4.3	
ESCANABA U	594			63	47	55.2	7.6	76	2	34	4	0	0			0.71	- 1.40				0.0	0										

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	F.	F.	F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
FLINT	766	993.2	1021.1	72	44	58.3	7.3	89	6	22	30	0	3	44	65	0.58	- 1.79	0.35	3	2	0.0	0	7.6	SSW	25*	NW	2	9	13	9	4.9	
GRAND RAPIDS	689	994.8	1020.4	71	47	58.8	7.6	83	23	28	30	0	1	45	66	1.04	- 1.57	0.51	5	3	0.0	0	7.8	S	30	NW	2	12	7	12	5.1	65
LANSING	852	988.1	1020.3	73	44	58.4	7.1	89	6	22	30	0	6	44	65	0.55	- 1.95	0.41	3	2	0.0	0	6.0	SSW	35	NW	2	12	11	8	4.7	66
MARQUETTE U	677	990.4		68	49	58.8	10.8	85	1	35	4	0	0			0.90	- 1.43	0.44	10	2	T	T	8.1	WW	31	SW	5	12	4	15	5.7	62
MUSKEGON	627	997.3	1019.9	69	47	58.4	7.4	80	23+	28	30	0	1	49	75	1.85	- 0.70	0.75	7	5	0.0	0	10.4	SSW	38*	NNW	2	10	9	12	5.3	
SAULT STE MARIE	721	995.7	1018.5	65	43	53.9	8.6	79	24	27	30	0	4	45	79	0.16	- 2.66	0.04	6	0	0.0	0	7.5	ENE	23*	NW	7+	7	12	12	6.3	65
MINNESOTA																																
DULUTH	1426	975.8	1017.5	67	45	56.0	11.9	84	5	27	29	0	1	43	67	1.01	- 1.16	1.00	2	0	0.0	0	10.4	SSW	38	W	2	14	8	9	4.7	69
INTERNATIONAL FALLS	1179	974.2	1015.6	67	41	53.6	11.2	88	5	20	29	0	7	43	71	0.34	- 1.40	0.30	3	0	0.0	0	10.2	S	28*	W	26+	14	6	11	5.0	
MINNEAPOLIS	822	984.2	1017.8	70	46	58.1	9.8	86	5	25	29	0	1	44	65	0.81	- 0.78	0.41	4	1	0.0	0	7.3	SE	31	NW	31	16	5	10	4.4	71
ROCHESTER	1297	970.6	1018.6	69	47	58.1	8.7	88	6	27	29	0	2	46	69	1.48	- 0.22	0.46	10	7	0.0	0	11.6	S	30*	WSW	6	15	7	9	4.3	
ST CLOUD	1034	978.4		69	44	56.5	9.2	86	5+	23	29	0	3			0.60	- 1.04	0.55	2	0	0.0	0						15	5	11	4.6	
MISSISSIPPI																																
JACKSON	305	1007.6	1020.2	85	55	70.0	0.0	93	13	33	30	6	0			0.00		0.00	0	0	0.0	0	5.7	E	20	NNW	28	20		2	2.8	
MERIDIAN	292	1010.2	1020.8	85	49	67.0	1.4	94	12	29	30	8	1	51	66	0.00	- 2.22	0.00	0	0	0.0	0	3.6	N	21*	N	29	18	10	3	3.4	
VICKSBURG U	234	1010.4		84	60	71.9	4.4	90	13+	43	30	3	0			T	- 2.04	T	0	1	0.0	0	6.3		17	NE	29+	18	10	3	3.1	89
MISSOURI																																
COLUMBIA	778	989.7	1018.0	82	56	68.8	10.1	92	10	35	29	4	0	47	51	0.78	- 2.34	0.49	6	4	0.0	0	9.5	SSE	26	N	31+	17	7	7	3.5	76
KANSAS CITY	742	982.9	1017.4	83	61	72.0	12.3	97	10+	38	29	7	0	48	47	0.94	- 1.92	0.34	7	5	0.0	0	8.7	SSW	26	SW	15	17	9	5	3.5	77
ST JOSEPH	809	983.0		83	52	67.9	10.5	97	10	28	29	6	1			0.52	- 1.66	0.38	3	4	0.0	0	6.6	SSE	21*	N	31	21	7	3	2.6	
ST LOUIS	535	998.8	1019.6	80	54	66.9	8.0	94	11	33	29	4	0	47	53	2.85	- 0.01	1.71	5	5	0.0	0	8.6	SSE	33	SW	17	15	10	6	3.7	86
ST LOUIS RFC	465			81	59	69.8	9.0	92	11	41	29	4	0			2.22	- 0.55	1.50	6		0.0	0										
SPRINGFIELD	1265	971.9	1019.1	83	54	68.3	8.6	92	7	28	29	4	1	48	54	0.43	- 3.33	0.31	4	1	0.0	0	10.8	SSE	29	N	31	18	7	6	3.4	91
MONTANA																																
BILLINGS	3567	892.5	1016.6	68	42	54.8	4.8	90	4	22	27	1	5	33	50	0.31	- 0.78	0.19	4	1	1.0	T	10.1	WSW	25	NW	25+	11	11	9	4.9	71
GLASGOW	2277	940.5		67	41	53.9	8.5	86	3	19	31	0	6			0.12	- 0.52	0.07	4	0	0.0	0						14	5	12	4.9	
GREAT FALLS	3662	888.7	1016.2	66	42	54.1	5.6	85	2	23	31	0	5	32	48	0.63	- 0.10	0.29	5	2	0.0	0	12.5	SW	38	SW	25+	12	5	14	5.5	65
HAVRE	2582	926.3		67	38	52.6	6.3	87	3	14	31	0	6			0.64	- 0.15	0.40	5	1	0.0	0	8.7		52	NW	25	14	6	11	5.0	69
HELENA	3893	880.2	1017.8	65	37	50.9	5.3	85	3	21	31	0	7	35	62	1.39	- 0.73	0.78	9	3	T	0	7.3	WSW	34	S	4	9	11	11	5.3	61
KALISPELL	2965	913.2		59	32	45.8	2.9	76	1	19	27	0	16			0.67	- 0.57	0.32	7	1	T	0	4.7					7	9	15	6.3	
MILES CITY				69	42	55.7	6.7	93	4	19	27	1	5			T	- 0.87	T	0	1	0.0	0	7.9	SE	25*	WSW	25					
MISSOULA	3190	901.4	1019.3	61	34	47.5	3.5	85	3	18	31	0	12	38	75	0.62	- 0.37	0.32	7	2	T	T	5.6	NNW	31	NW	22	6	8	17	6.7	44
NEBRASKA																																
GRAND ISLAND	1841	950.9	1017.3	75	44	59.5	5.1	92	1	27	31	2	4	45	66	0.06	- 0.90	0.06	1	0	0.0	0	9.3	S	29*	S	29	20	4	7	3.2	
LINCOLN U	1150			78	53	65.5	8.8	94	5	28	29	5	1			0.72	- 0.86	0.50	4	4	0.0	0	9.2	SW	35	SW	14	21	7	3	3.0	84
NORFOLK	1544	961.3		75	46	60.7	7.8	95	1	23	29	2	3			0.50	- 0.68	0.36	4	3	0.0	0						16	7	8	3.9	
NORTH PLATTE	2779	917.3	1016.3	75	42	58.1	7.1	91	1	22	31	1	2	43	64	0.67	- 0.24	0.61	3	3	0.0	0	8.9	SSE	35	SE	13	18	7	6	3.3	74
OMAHA	978	977.3	1017.1	79	50	64.4	8.7	95	5	28	29	2	1	48	61	1.05	- 0.68	0.59	5	2	0.0	0	8.1	SSE	28	NW	17	20	7	4	3.2	81
OMAHA N OMAHA AP	1323	969.2		76	53	64.1	10.2	93	5	34	29	2	0			1.12	- 0.54	0.58	3	1	0.0	0						19	8	4	3.5	
SCOTTSBLUFF	3950	881.2	1017.0	74	41	57.4	7.0	89	4	25	28	0	3	39	58	1.07	- 0.38	1.03	5	0	0.0	0	9.5	NW	30*	WNW	13	20	2	9	3.4	
VALENTINE	2587	925.3		74	43	58.4	9.1	95	5+	24	31	2	2			0.61	- 0.27	0.59	3	2	0.0	0	9.4	NW	37	S	13	20	7	4	3.3	84
NEVADA																																
ELKO	5075	846.8	1017.9	69	34	51.2	4.3	85	3+	20	27	0	14	34	57	1.76	1.01	1.16	7	0	5.2	2	5.6	SW	24*	S	11	8	11	12	5.9	
ELY	6257	811.3	1017.0	67	34	50.7	4.8	82	3	17	31	0	13	32	55	0.37	- 0.36	0.14	8	2	0.0	0	8.7	S	42	S	4	8	16	7	5.0	79
LAS VEGAS	2162	949.7	1015.2	82	58	70.1	3.0	99	1	49	31	8	0	41	41	0.61	0.41	0.36	5	2	0.0	0	6.5	W	46*	S	4	19	6	6	3.6	79
RENO	4404	863.7	1017.7	71	34	52.4	2.2	90	2	20	31	1	15	35	57	0.24	- 0.27	0.16	4	0	0.0	0	5.0	S	38	S	22	9	9	13	5.6	60
WINNEMUCCA	4299	869.2		71	36	53.4	5.7	89	2	16	31	0	10			0.62	- 0.19	0.36	6	3	0.0	0	7.1	S	36	SE	4	7	8	16	6.4	62
NEW HAMPSHIRE																																
CONCORD	339	1006.9	1017.8	71	37	53.8	5.1	90	7	25	10	1	9	39	65	1.22	- 1.44	0.85	5	1	T	0	5.1	NW	34	NW	30	19	7	5	3.4	78
MT WASHINGTON OBS	6262	806.3		42	29	35.1	4.2	56	7	8	31	0	16			3.89	- 2.30	2.01	10	2	12.7	1	32.9	WW	112Y	W	30	10	8	13	5.9	59
NEW JERSEY																																
ATLANTIC CITY	58	1018.2	1020.5	72	48	59.9	2.7	83	7	38	5	0	0	46	66	0.15	- 3.05	0.10	2	1	0.0	0	9.2	WSW	35*	NW	3	19	7	5	3.3	73

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90°F. or above	Temperature: No. of days: Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
NEW JERSEY	Ft.	Mb.	Mb.	°F.	F.	F.	F.	F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ATLANTIC CITY U	10			67	51	58.8	0.1	79	17	40	31+	0	0			0.02	- 3.37	0.01	2	0	0.0	0	12.8		40*	N	29					
NEWARK	11	1018.7	1019.9	72	50	61.2	4.6	84	7	39	30	0	0	44	59	0.21	- 2.90	0.16	2	1	0.0	0	9.7	SW	37*	NNW	29	19	7	5	3.5	
TRENTON U	56	1012.4		72	49	60.1	3.3	83	27+	38	30	0	0			0.05	- 2.79	0.05	1	1	0.0	0	7.8	SW#	36	NW	30	18	8	5	3.3	77
NEW MEXICO																																
ALBUQUERQUE	5310	851.6	1016.9	75	48	61.5	3.0	87	2+	40	31	0	0	35	44	0.76	0.01	0.42	4	2	0.0	0	6.2	SE	27	SE	28	19	7	5	3.5	84
CLAYTON	4969	848.5		76	47	61.4	6.1	88	1	34	31	0	0			0.20	- 0.80	0.10	4	0	T	0						19	5	7	3.3	
RATON	6379	809.5		73	39	55.8	4.7	82	2+	28	31	0	2			0.28	- 0.76	0.14	5	3	1.2	1						16	8	7	4.0	
ROSWELL	3619	895.7		83	43	63.2	4.7	89	3	38	30+	0	0			0.15	- 0.92	0.10	2	0	0.0	0	6.8		28	NW	31	14	11	6	4.1	86
SILVER CITY	5373	838.8		77	47	61.7		86	1	41	20	0	0			1.04		1.01	3	1	0.0	0						16	7	8	3.9	
NEW YORK																																
ALBANY	277	1015.4	1019.3	69	42	55.5	4.7	89	7	30	10+	0	3	41	62	0.20	- 2.57	0.11	2	1	0.0	0	6.7	SSE	34	W	30					
BINGHAMTON	1590	960.5	1019.8	66	44	54.8	5.5	82	7	32	30+	0	2	41	63	0.26	- 2.83	0.21	4	2	T	0	9.1	NNW	34	N	29	16	9	6	4.1	78
BUFFALO	705	992.7	1020.8	68	46	57.1	6.3	79	18	35	30+	0	0	44	64	0.30	- 2.70	0.13	3	0	0.0	0	9.1	S	38	SW	7	13	10	8	4.6	77
NEW YORK U	132	1008.6		72	52	61.8	3.5	83	19+	38	30	0	0			0.14	- 3.00	0.10	2	1	0.0	0	8.0	SW#	32	NW	30	21	7	3	2.5	86
NEW YORK LA GUARDIA	19	1017.7	1019.4	70	53	61.4	2.8	81	7	41	30	0	0	45	59	0.06	- 3.31	0.04	2	1	0.0	0	10.4	SW	34	N	30+	17	10	4	3.4	
ROCHESTER	543	1001.1	1020.5	71	44	57.3	5.5	86	7	35	29+	0	0	43	64	0.23	- 2.35	0.10	3	0	0.0	0	9.3	SW	34	SW	7	17	7	7	3.9	72
SCHENECTADY	217			68	43	55.4	4.9	86	7	34	10	0	0			0.36	- 2.55	0.31	2	1	0.0	0						27	2	2	2.4	
SYRACUSE	417	997.4	1019.5	70	43	56.3	4.5	87	7	33	5	0	0	40	60	0.21	- 2.97	0.14	4	1	T	0	6.9	SE	33	W	3	16	9	6	4.0	78
NORTH CAROLINA																																
ASHEVILLE U	2203	942.5		74	45	59.6	2.0	80	7+	31	31	0	1			T	- 2.49	T	0	0	0.0	0	5.7	N#	30	NW	29	26	3	2	1.5	92
CAPE HATTERAS R	7	1017.3	1018.0	71	57	63.9	- 1.5	78	8+	41	17	0	0	56	75	6.11	1.87	3.60	11	1	0.0	0	12.9	NNE	35*	NNE	21+	18	4	9	3.8	73
CHARLOTTE	735	992.7	1020.8	77	50	63.6	1.6	84	27	32	31	0	1	48	61	0.02	- 2.94	0.02	1	1	0.0	0	6.7	NNE	27	NW	29	25	3	3	1.8	90
GREENSBORO	891	989.1	1021.3	74	46	59.8	0.5	83	8	29	31	0	1	45	64	0.26	- 2.45	0.25	3	0	0.0	0	7.1	NE	25	NW	29	22	5	4	2.3	81
RALEIGH	433	1006.3	1020.2	75	46	60.5	0.0	85	8	30	31	0	1	46	65	0.44	- 2.27	0.36	4	0	0.0	0	7.0	NNE	24*	NW	29	20	6	5	2.7	87
WILMINGTON	30	1019.0	1019.1	76	53	64.3	- 1.1	85	3	35	31	0	0	53	72	3.87	0.86	3.64	4	2	0.0	0	9.9	NNE	35	N	20	19	6	6	3.5	75
WINSTON SALEM	967	985.2	1021.2	74	49	61.4	1.1	83	27	33	31	0	0	47	62	0.12	- 2.95	0.05	4	0	0.0	0	7.7	NE	24*	NNW	29	23	5	3	2.1	
NORTH DAKOTA																																
BISMARCK	1647	955.2	1015.9	71	39	55.0	8.8	95	4	21	28	1	7	39	62	1.18	0.33	1.13	3	1	0.0	0	9.2	SSE	40	S	3	19	4	8	3.9	76
FARGO	900	981.2	1015.8	71	44	57.3	10.8	93	5	24	31	1	5	43	64	0.23	- 0.88	0.18	4	2	0.0	0	10.1	S	30	S	29	14	10	7	4.1	73
WILLISTON	1899	946.7		70	40	55.0	8.9	93	4	16	31+	1	4			T	- 0.73	T	0	0	0.0	0	8.8	SW#	47	NW	24	15	7	9	4.2	75
OHIO																																
AKRON	1209	983.0	1021.3	72	46	59.0	6.6	85	7	34	30+	0	0	40	56	0.48	- 2.00	0.29	2	0	T	0	7.2	WSW	23*	WSW	2	14	15	2	3.7	
CINCINNATI OBS	761			79	50	64.3	6.4	89	6	35	30	0	0			0.10	- 2.14	0.05	4	1	0.0	0	4.3	S#	17	SW	31					85
CINCINNATI U	553	997.7		79	52	65.7		89	6	39	30	0	0			0.09		0.08	3	1	0.0	0										
CLEVELAND	777	992.6	1020.6	71	48	59.4	7.6	86	7	35	14	0	0	43	60	0.71	- 1.71	0.78	5	2	0.0	0	8.3	SSE	29	SW	2	14	13	4	3.9	71
COLUMBUS	812	991.4	1021.5	77	43	59.9	4.7	86	7+	25	30	0	2	42	58	0.11	- 2.00	0.19	1	1	0.0	0	5.8	N	26	SW	2	20	9	2	2.9	81
COLUMBUS U	724			76	51	63.3	6.7	85	6	33	30	0	0			0.08	- 1.80	0.08	1	1	0.0	0										
DAYTON	997	988.5	1021.2	77	47	62.1	6.5	87	6	31	30	0	1	45	60	0.17	- 2.06	0.05	3	1	0.0	0	7.1	SSW	26	S	2	19	8	4	3.2	84
MANSFIELD	1296			73	49	61.0	8.6	85	7	28	30	0	1			0.43	- 1.84	0.73	3	0	T	0						18	9	4	3.3	
TOLEDO	676	995.3	1020.7	75	44	59.1	7.0	91	7	23	30	1	3	42	60	0.67	- 1.72	0.73	2	1	0.0	0	6.5	SW	29	SW	7	15	11	5	4.2	71
YOUNGSTOWN	1178	978.4	1021.2	72	44	57.8	5.4	84	7	29	30+	0	3	39	55	0.45	- 2.26	0.58	3	2	T	0	8.2	SSW	21*	NNW	29+	16	13	2	3.3	
OKLAHOMA																																
OKLAHOMA CITY	1280	974.4	1017.6	85	57	71.1	8.7	95	4	40	29	10	0	49	52	2.05	- 0.46	1.91	4	1	0.0	0	11.2	SSE	38	SW	30	19	6	6	3.4	84
TULSA	676	993.7	1018.2	87	57	72.2	8.4	97	9	34	29	14	0	50	52	0.18	- 3.13	0.15	2	1	0.0	0	11.1	SSE	29	S	31+	18	7	6	3.3	79
OREGON																																
ASTORIA	8	1014.7	1015.4	62	48	54.9	2.0	70	10+	35	19	0	0	50	85	9.58	1.80	2.40	22	4	0.0	0	8.3	SSE	40*	SSW	24+	1	5	25	8.6	
BURNS U	4151	874.1		65	36	50.3	1.9	82	2+	19	31+	0	11			0.32	- 0.54	0.12	9	1	T	0						7	12	12	6.3	
EUGENE	361	1003.3		66	45	55.4	2.2	76	1	32	19	0	1			2.39	- 1.44	1.12	11	1	0.0	0	5.6		24*	SSW	24	5	5	21	8.0	
MEACHAM	4050			57	39	48.1	1.8	79	2	25	26	0	8			0.86	- 1.98	0.43	10	0	T	0						7	5	19	7.1	
MEDFORD	1298	969.7	1017.5	67	43	55.2	1.2	91	2	26	31	2	5	45	75	1.40	- 0.54	0.63	12	0	0.0	0	4.3	WNW	25*	SE	14	4	11	16	7.2	
PENDLETON	1482	963.1	1017.0	67	44	55.5	2.3	85	10	30	28	0	3	39	59	0.44	- 0.74	0.34	5	0	0.0	0	8.2	SE	28*	SW	24	9	10	12	5.9	
PORTLAND	21	1010.6	1016.3	63	45	54.2	0.0	74	2	30	26	0	1	48	82	3.04	- 0.57	1.08	14	1	0.0	0	8.0	ESE	43	SW	24	1	5	25	8.5	27
PORTLAND U	30			65	50	57.5	1.0	76	14+	38	26	0	0			3.35	- 0.54	1.53	14		0.0	0										

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ROSEBURG	505	998.1		67	45	55.6	1.2	82	14	30	26	0	2			2.05	- 0.97	0.99	16	0	0.0	0	3.6	N#	20	S	24	2	8	21	8.0	32
SALEM	195	1009.5	1017.0	63	44	53.8	- 0.3	75	1	29	19	0	1	48	83	3.59	- 0.32	1.58	14	1	0.0	0	7.0	S	31*	S	24	3	6	22	7.9	
SEXTON SUMMIT R	3836	884.2		55	41	48.0	- 2.7	80	1	32	30	0	1			2.99	- 0.42	1.05	16	0	0.0	0	13.0	S				7	8	16	6.8	
PACIFIC AREA																																
CANTON ISLAND	11	1009.0	1009.5	90	79	84.5	0.8	92	26+	74	30	23	0	73	71	1.93	0.83	0.59	7	0	0.0	0	8.7	E	21*	E	8	5	9	17	7.2	
ENIWETOK	16	1007.8	1009.8	88	77	82.4	- 0.6	91	2	74	23+	7	0			11.99	2.90	2.76	26	1	0.0	0	9.2									
TAGUAC GUAM R	361			85	73	79.0	- 0.3	87	30+	67	31+	0	0			18.06	4.96	4.93	23	2	0.0	0	5.8	E#	27	SW	13					55
JOHNSTON	7	1011.8	1012.7	83	79	80.9	0.0	84	27+	77	30+	0	0	74	79	1.10	- 2.17	0.31	14	0	0.0	0	14.5	E	29	E	16	1	8	22	8.1	75
KOROR R	94	1006.8	1009.3	87	77	81.9	0.7	90	29+	72	20	2	0	77	87	10.23	- 2.86	2.12	24	6	0.0	0	9.2	W	20	SW	17+	0	1	30	9.9	58
KWAJALEIN	8	1009.3		87	76	81.8	- 0.1	90	28+	73	10+	3	0			19.86	8.98	3.43	24	2	0.0	0	8.3		35	E	3	1	4	27	8.9	
PONAPE R	123	1004.5	1008.9	86	74	80.1	0.4	90	3	72	27+	1	0	75	88	20.68	4.71	3.68	28	4	0.0	0	4.7	SW	17	NW	23+	0	0	31	9.8	37
TRUK MOEN ISLAND	5	1008.0	1008.2	86	76	80.9	0.3	89	2	73	18+	0	0	76	84	16.61	3.16	4.63	25	6	0.0	0	9.0	SW	29	NW	28+	0	1	30	9.7	30
WAKE	11	1009.8	1009.8	87	77	81.7	0.1	89	15+	72	14	0	0	74	76	5.54	0.27	1.50	18	0	0.0	0	10.6	ENE	31*	S	25	4	16	11	6.7	
YAP R	53			86	75	80.8	- 0.8	90	26	73	12	1	0			16.67	3.48	4.36	24	1	0.0	0										
PENNSYLVANIA																																
ALLENTOWN	376	1006.2	1020.5	72	43	57.4	3.6	83	27+	34	14	0	0	44	66	0.15	- 2.82	0.08	3	1	0.0	0	7.5	SW	40*	WNW	3	17	10	4	3.2	
ERIE	732	994.2	1020.6	69	48	58.7	6.1	88	7	37	30+	0	0	43	60	1.13	- 2.17	0.48	4	3	0.0	0	13.2	S	31*	SSW	2	16	13	2	3.5	
HARRISBURG	335	1007.1	1021.0	72	43	57.1	1.4	87	7	32	14	0	1	41	61	0.04	- 2.93	0.02	3	0	0.0	0	6.6	W	30	NW	30	20	5	6	3.3	82
PHILADELPHIA	5	1015.7	1020.2	70	44	57.1	1.4	81	7	34	14+	0	0	44	66	0.09	- 2.69	0.09	1	1	0.0	0	8.0	WSW	33	N	12	17	7	7	3.9	73
PITTSBURGH	1137	990.6	1021.2	74	44	58.8	5.7	84	7	30	30	0	2	38	50	0.16	- 2.36	0.10	4	3	T	0	6.3	N	23*	NNW	29+	16	9	6	3.7	86
PITTSBURGH U	749			75	48	61.6	5.5	85	7	36	30	0	0			0.16	- 2.34	0.07	4	0	0.0	0										84
READING U	266	1008.2		73	48	60.6	3.4	85	7	40	30+	0	0			0.17	- 2.67	0.05	2	1	0.0	0	7.6	N#	47	NW	30	19	8	4	3.0	78
SCRANTON	940	986.8	1020.5	70	44	56.7	5.7	83	7	35	14+	0	0	42	63	0.03	- 3.47	0.02	2	1	T	0	6.4	NNW	26	NW	30	18	9	4	3.5	84
WILLIAMSPORT	527	1002.2	1021.3	72	41	56.7	3.6	86	7	32	14	0	1	40	62	0.19	- 3.13	0.12	3	1	T	0	7.1	NW	26*	W	31	18	8	5	3.5	
RHODE ISLAND																																
BLOCK ISLAND	110	995.3		63	50	56.2	1.0	73	16	36	30	0	0			1.49	- 1.53	1.43	5	2	0.0	0						17	5	9	4.0	
PROVIDENCE	55	1011.9	1018.0	69	45	56.8	3.6	86	7	34	30+	0	0	43	65	1.63	- 1.47	1.60	4	2	T	0	10.4	WSW	33*	N	29	18	7	6	3.5	77
SOUTH CAROLINA																																
CHARLESTON	41	1017.0	1019.0	81	54	67.2	1.0	86	28+	37	30	0	0	54	68	2.27	- 0.57	2.19	3	1	0.0	0	9.2	NNE	40Y	N	25	25	3	3	2.5	82
CHARLESTON U	9			76	60	68.1	0.0	84	28	48	31+	0	0			3.31	0.57	3.30	3	0	0.0	0	12.2		42	NE	25					
COLUMBIA	217	1007.5	1020.5	80	49	64.3	- 0.4	89	12	33	31	0	0	48	64	T	- 2.38	T	0	1	0.0	0	6.4	NNE	21*	NNW	29+	25	2	4	1.8	83
FLORENCE	146	1013.9	1019.6	77	51	64.2	- 0.8	86	12	34	31	0	0	48	63	0.43	- 1.75	0.24	4	1	0.0	0	8.4	NE	23*	NE	29	25	2	4	2.0	
GNVLE SPARTANBURG	957	983.9	1020.9	77	51	64.1	1.1	84	27+	35	31	0	0	48	60	0.24	- 3.12	0.24	1	2	0.0	0	6.8	NE	31	NW	29	26	0	5	1.7	85
SOUTH DAKOTA																																
HURON	1282	968.9	1016.1	74	45	59.4	9.6	102	5	23	31	2	5	45	66	1.59	0.44	0.65	9	5	0.0	0	10.7	SSE	34	S	29	13	8	10	5.0	66
RAPID CITY	3165	902.8	1016.5	73	46	59.4	9.4	94	4	28	28	3	3	36	48	0.77	- 0.02	0.42	3	2	T	0	10.3	NNW	34	N	23	17	8	6	3.4	76
SIOUX FALLS	1420	965.2	1017.0	73	44	58.1	7.8	94	5	20	29	2	3	46	69	1.65	0.40	0.71	4	3	0.0	0	8.6	SSE	24*	NW	28	14	6	11	4.6	
TENNESSEE																																
BRISTOL	1507	966.7	1021.2	79	46	62.4	4.9	84	24+	31	31	0	1	42	54	0.07	- 2.08	0.06	2	1	0.0	0	2.6	NE	20*	NW	29	23	6	2	1.9	
CHATTANOOGA	670	993.5	1021.4	81	48	64.8	3.7	89	21	33	30	0	0	49	66	0.24	- 2.78	0.24	1	1	0.0	0	4.6	S	26	NW	28	20	10	1	2.0	93
KNOXVILLE	950	985.0	1021.7	77	48	62.0	1.1	83	3	31	30	0	1	46	61	T	- 2.61	T	0	0	0.0	0	4.6	NE	29	N	28	26	4	1	1.5	94
MEMPHIS	263	1005.5	1020.2	84	53	68.6	5.0	92	13	34	30	6	0	51	57	T	- 2.72	T	0	0	0.0	0	5.7	SE	24	SW	31	21	8	2	2.4	97
MEMPHIS U	271			83	61	71.8	7.1	91	13	44	29	1	0			0.02	- 2.84	0.00	1		0.0	0										
NASHVILLE	577	1000.7	1020.7	81	50	65.5	4.0	87	22+	33	30	0	0	50	63	T	- 2.32	T	0	0	0.0	0	5.1	S	25	NW	28+	21	8	2	2.4	89
OAK RIDGE	905	988.1		78	46	62.0	2.1	85	21	30	30	0	1			T	- 2.67	T	0	0	0.0	0	3.3		27Y		21	26	3	2	1.5	
TEXAS																																
ABILENE	1759	956.7	1017.3	87	59	73.0	6.8	93	9+	44	29	11	0	50	50	0.39	- 2.46	0.35	4	3	0.0	0	7.8	SSE	35	SW	23	19	4	8	3.6	77
AMARILLO	3607	891.6	1016.3	81	51	66.2	6.7	91	2	40	31	2	0	41	47	1.54	- 0.22	1.33	3	1	0.0	0	14.0	SSW	29	SW	29	18	10	3	3.3	89
AUSTIN	597	996.8	1018.7	87	63	75.1	4.4	95	8	54	1	12	0	56	57	0.78	- 2.05	0.60	3	2	0.0	0	6.0	S	23	NW	24	16	8	7	3.9	71
BROWNSVILLE	16	1015.3	1017.7	85	68	76.4	0.5	90	18	62	30+	1	0	66	75	1.03	- 2.50	0.38	7	2	0.0	0	10.1	SE	30	S	24	8	15	8	5.6	52
CORPUS CHRISTI	43	1017.4	1018.7	84	67	75.5	1.0	89	11+	59	2	0	0	65	73	2.61	- 0.15	1.02	9	5	0.0	0	9.0	ESE	27	E	25	13	7	11	5.2	62
DALLAS	481	999.8	1018.4	86	60	73.2	5.4	94	8+	45	29	11	0	51	51	0.01	- 2.69	0.01	1	1	0.0	0	9.5	SSE	28	N	31	19	5	7	3.1	79
DEL RIO	1026			86	62	74.2		94	8	53	1	8	0			0.81		0.43	3	2	0.0	0	8.4					14	7	10	4.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	°F.	°F.	F.	F.	°F.		°F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TEXAS																																
EL PASO	3918	888.7	1015.6	80	53	66.4	1.0	88	2	46	3	0	0	40	42	0.55	- 0.30	0.30	3	1	0.0	0	5.3	SSE	39	N	31	19	5	7	3.3	89
FORT WORTH	544	997.6	1018.3	88	59	73.5	5.6	96	7+	47	29	13	0	52	51	0.23	- 2.36	0.19	3	2	0.0	0	7.5	SSE	25*	SSW	30	20	4	7	3.2	
GALVESTON U	7			81	72	76.4	2.9	87	10	65	29+	0	0			0.05	- 2.81	0.05	1	0	0.0	0	8.4	SE	25	NE	29					79
HOUSTON U	41			86	67	76.7	4.3	94	8	56	30+	6	0			0.01	- 3.59	0.01	1		0.0	0										
HOUSTON	50	1016.5	1019.1	87	63	75.0	2.6	92	11+	50	30	6	0	62	73	0.30	- 3.47	0.14	3	2	0.0	0	7.3	ESE	23*	SSE	23	12	7	12	4.9	74
LAREDO	500	1002.4	1017.7	89	67	77.8	2.3	95	9+	58	1	15	0	61	62	0.88	- 0.75	0.63	5	4	0.0	0	6.7	ESE	23*	E	7	12	12	7	4.8	
LUBBOCK	3243	906.4	1017.3	82	50	65.8	4.6	91	2	39	31	1	0	47	55	0.59	- 1.41	0.33	3	1	0.0	0	11.2	SSE	31*	NNW	31	16	12	3	3.5	
MIDLAND	2854	918.1	1015.8	86	56	71.1	5.2	91	9	47	29+	3	0	45	45	0.17	- 1.49	0.17	1	1	0.0	0	8.6	S	28*	NNE	31	15	8	8	4.2	
PORT ARTHUR	16	1017.6	1019.2	87	62	74.2	4.4	95	12	48	30	10	0	63	75	0.00	- 2.88	0.00	0	1	0.0	0	6.4	NE	26	SW	31	12	16	3	4.2	76
SAN ANGELO	1903	950.4	1017.1	86	56	71.0	2.2	92	9	42	29	8	0	51	54	0.32	- 1.51	0.21	4	2	0.0	0	6.4	SSE	28*	NNE	31	17	6	8	3.7	
SAN ANTONIO	792	993.1	1018.6	86	62	74.1	3.5	93	8	52	1	8	0	58	62	2.75	0.25	1.68	5	2	0.0	0	7.0	SE	26	W	24	14	9	8	4.2	72
VICTORIA	104	1012.8		87	64	75.5	2.9	92	12+	55	30	9	0			1.25	- 2.23	0.80	3	2	0.0	0	7.1		31Y		31+	11	12	8	4.6	
WACO	500	996.3	1018.4	88	62	74.9	5.5	95	8+	51	29	13	0	54	53	1.09	- 1.46	0.91	4	2	0.0	0	10.5	SSE	29*	SSE	24	18	7	6	3.4	
WICHITA FALLS	994	980.7	1017.3	90	58	73.7	7.8	98	9+	42	29	16	0	50	50	0.37	- 2.50	0.27	4	3	0.0	0	8.8	S	28*	N	31	18	7	6	3.4	
UTAH																																
MILFORD	5028	846.6		74	39	56.3	5.6	90	3	30	14	1	5			0.40	- 0.37	0.20	5	2	0.0	0						17	7	7	4.0	
SALT LAKE CITY	4220	870.1	1018.1	71	44	57.8	5.1	89	3	30	28	0	3	40	58	1.05	- 0.10	0.35	6	1	T	0	9.8	SSE	30	SE	5	9	13	9	5.2	73
WENDOVER	4237	872.5		69	48	58.2	5.0	86	4	35	31	0	0			0.56	0.10	0.47	4	0	0.0	0						14	8	9	3.9	
VERMONT																																
BURLINGTON	331	1003.4	1018.1	65	38	51.7	3.1	83	7	24	9	0	11	40	66	0.50	- 2.47	0.30	3	0	T	0	8.8	S	34	NW	30	9	11	11	5.4	74
VIRGINIA																																
LYNCHBURG	947	995.6		75	48	61.1	2.9	85	7	31	31	0	1			0.79	- 1.85	0.51	4	0	0.0	0	5.6		22	NE	21	23	2	6	2.5	80
NORFOLK	26	1019.1	1020.4	69	51	60.1	- 1.9	82	8	34	31	0	0	51	75	1.21	- 1.71	0.44	7	2	0.0	0	11.1	NNE	34	NE	22	19	2	10	3.8	86
RICHMOND	162	1014.4	1020.7	74	43	58.6	- 0.6	84	8	27	31	0	2	46	71	0.30	- 2.70	0.16	2	2	0.0	0	7.5	NNE	21	N	28	19	5	7	3.0	73
ROANOKE	1174	979.3	1021.6	75	46	60.5	2.3	87	7	36	14	0	0	43	58	0.27	- 2.94	0.24	2	0	0.0	0	6.9	NE	35*	NNW	29	25	1	5	2.2	
WASHINGTON																																
OLYMPIA	190	1008.2	1015.5	61	44	52.4	1.0	72	15	31	26+	0	4	48	88	5.98	0.70	1.42	17	3	0.0	0	6.5	S	44*	S	24	1	5	25	8.7	
SEATTLE TACOMA	400	1001.6	1015.9	61	48	54.5	2.6	76	14	37	19	0	0	48	82	5.06	1.04	1.41	19	0	0.0	0	8.9	S	35*	S	21	2	6	23	8.4	
SEATTLE U	14			62	51	56.1	1.7	77	14	40	19	0	0			4.16	0.88	0.84	20	0	0.0	0			60	SW	21					29
SPOKANE	2356	947.9	1016.9	62	40	51.1	2.5	85	2	26	19	0	6	39	68	1.11	- 0.46	0.77	6	0	0.0	0	8.4	SSW	38	SW	24	7	7	17	6.7	55
STAMPEDE PASS R	3958	879.4		49	37	42.9	0.5	69	2+	26	27	0	11			6.03	- 2.78	1.66	19	0	22.2	8						2	6	23	8.6	
TATOOSH ISLAND R	101	1010.8	1013.8	58	50	54.2	2.3	66	14+	43	25	0	0	48	82	13.62	5.40	3.60	25	5	0.0	0	18.4	ENE	70	S	24	2	5	24	8.3	37
WALLA WALLA U	949			68	48	58.0	2.9	85	10	34	27+	0	0			0.60	- 0.93		4		0.0	0										
YAKIMA	1061	977.3	1016.6	65	38	51.7	1.2	80	2	21	29	0	8	38	63	0.05	- 0.55	0.04	2	0	0.0	0	7.3	W	31*	SSW	21	7	6	18	6.7	
WEST INDIES																																
SAN JUAN P.R.	5	1010.2	1012.8	89	75	81.5	1.5	93	10	70	31	13	0	73	79	1.63	- 4.20	0.63	12	4	0.0	0	6.5	SE	25	SW	9	4	18	9	6.2	61
SWAN ISLAND	28	1009.8		87	77	81.8	0.1	88	17+	73	26	0	0			5.30	- 4.40	1.25	19	5	0.0	0						1	10	20	8.2	
WEST VIRGINIA																																
BECKLEY	2504	933.7	1022.1	71	43	56.7		77	19+	29	30	0	2	41	60	0.14		0.11	2	0	T	0	7.3	SSE	24*	NNW	29+	23	5	3	2.5	
CHARLESTON	939	985.8	1021.4	76	42	59.2	1.9	84	11	28	31	0	2	44	64	0.09	- 2.49	0.06	3	0	T	0	3.7	SW	17*	NW	28	18	11	2	3.2	
ELKINS	1970	952.6	1022.6	72	34	52.9		80	24+	22	31	0	12	41	74	0.31		0.19	4	0	T	0	4.5	NNW	23*	WNW	29	15	9	7	4.5	
HUNTINGTON	827	991.3	1021.6	77	44	60.6		84	24+	27	30	0	2	45	61	T	- 2.06	T	0	0	0.0	0	3.8	NNW	17*	WSW	2	19	8	4	3.3	
PARKERSBURG U	615			76	45	60.4	3.4	84	7+	32	31	0	1			0.22	- 1.83	0.14	5	1	T	0	4.7		26	NW	29					■3
WISCONSIN																																
GREEN BAY	682	992.9	1018.7	68	45	56.5	8.1	88	6	33	30+	0	0	47	76	0.73	- 1.18	0.36	7	4	0.0	0	7.7	SW	27	NW	2	14	5	12	5.1	58
LA CROSSE	652	993.5	1018.4	71	51	61.2	10.1	93	6	35	29	1	0	48	69	1.46	- 0.73	0.68	6	4	0.0	0	8.3	S	38*	NW	2	14	7	10	4.9	
MADISON	858	983.6	1019.1	72	44	58.1	7.7	90	6	26	29	1	4	45	66	0.64	- 1.57	0.30	9	2	0.0	0	7.5	S	30	N	28	10	8	13	5.7	52
MILWAUKEE	672	994.4	1019.6	70	48	58.6	8.6	89	6	29	30	0	1	49	72	0.34	- 1.76	0.16	6	2	0.0	0	9.3	SSW	30	N	11	12	10	9	5.0	64
WYOMING																																
CASPER	5319	839.7	1016.9	69	41	54.6	6.3	84	4	15	28	0	5	27	42	0.33	- 0.51	0.30	4	2	1.4	1	10.5	WSW	35*	WSW	25	15	8	8	4.2	
CHEYENNE	6126	816.5	1017.7	68	41	54.4	6.9	82	4+	21	31	0	4	32	50	1.06	- 0.23	0.94	4	1	T	T	11.7	WNW	31	N	31	17	4	10	4.1	77
LANDER	5563	837.5	1016.8	68	40	53.6	6.5	85	4+	21	28	0	7	32	49	0.36	- 0.85	0.30	2	0	2.4	1	5.8	WSW	37	S	12	15	9	7	4.0	83

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days								No. of days		Snow, Sleet				Fastest mile						
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
WYOMING	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
SHERIDAN	3942	886.0	1017.1	70	39	54.7	6.9	91	4	18	28	1	5	34	51	0.52	- 0.61	0.41	3	1	1.3	1	6.0	WNW	35	NW	23	14	7	10	4.5	69

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70°F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

CLIMATOLOGICAL DATA

METRIC UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	995.8	1021.3	27.8	11.7	19.7	2.1	32.8	12	0.6	30	1	0	10.0	59	3	- 72	3	1	1	0	0	2.4	ESE	11.2	N	12	21	6	4	2.5	87
HUNTSVILLE	184	999.3	1021.2	28.3	11.1	19.7	2.4	32.8	12	0.6	30	1	0	8.9	55	T	- 69	T	0	1	0	0	2.9	SE	13.0*	SSE	5	22	6	3	2.4	
MOBILE	64	1017.1	1019.5	28.9	15.0	22.1	1.6	33.9	9	5.0	30	5	0	12.8	62	2	- 75	2	1	1	0	0	3.2	NE	9.4*	NNE	29+	17	11	3	3.4	
MONTGOMERY	59	1012.2	1020.5	27.2	12.2	19.6	0.4	31.7	4	1.1	30	0	0	11.7	65	1	- 57	1	1	0	0	0	2.1	E	11.2	NW	29	23	4	4	2.6	82
ALASKA												B																				
ANCHORAGE	27	989.3	994.3	6.1	- 0.6	2.7	1.0	15.6	6	- 9.4	29+	0	20	- 1.7	77	26	- 22	10	9	0	102	102	2.1	N	13.0*	SE	6	2	4	25	8.4	32
ANNETTE	34	999.3	1003.2	11.1	7.2	9.4	1.2	16.7	14+	1.7	29	0	0	6.1	81	494	65	86	28	2	T	0	7.1	SSE	19.7*	SSE	10	3	1	27	8.8	
BARROW	7	1009.4	1010.3	- 9.4	-13.3	-11.3	-2.8	2.8	3	-29.4	30	0	31	-14.4	77	23	11	7	15	0	30	279	6.3	NE	24.6*	W	3	4	2	25	8.3	
BARTER ISLAND	12	1005.9	1007.8	- 7.2	-11.7	- 9.6	-1.3	2.2	3	-20.6	30+	0	31	-12.2	78	33	12	7	24	0	328	254	7.6	ENE	25.9*	W	3	0	0	31	9.8	
BETHEL	38	997.9	999.3	- 0.6	- 7.2	- 3.8	-3.5	11.1	5	-20.6	28	0	27	- 5.6	86	23	- 16	15	9	0	69	51	5.4	NNE	16.1*	S	5	6	1	24	7.7	
COLD BAY	29	996.7	1000.5	5.6	1.7	3.4	-1.1	14.4	5	- 3.9	25	0	8	0.0	77	77	- 40	35	20	0	107	51	8.4	NNW	19.7*	W	28	0	1	30	9.6	
CORDOVA	12	992.4	994.2	9.4	1.1	5.3	0.9	16.7	3	- 3.9	25	0	15	2.8	88	265	- 37	92	23	0	8	T	3.0	E	13.4*	ESE	6	0	7	24	8.9	
FAIRBANKS	133	981.9	999.2	0.6	- 6.7	- 3.1	0.1	12.8	6	-20.0	28	0	27	- 6.1	81	38	17	15	12	0	295	178	2.1	N	6.7*	N	21+	2	5	24	8.4	
JUNEAU	5	999.3	1000.0	9.4	4.4	7.0	1.7	12.8	15	- 1.7	6+	0	3	4.4	85	198	- 14	22	26	0	T	T	6.5	ESE	17.0*	ESE	11	1	2	28	9.3	26
KING SALMON	13	994.2	995.8	3.9	- 4.4	- 0.1	-2.2	13.9	4	-16.1	25	0	26	- 2.8	81	49	- 5	16	13	0	33	25	5.4	N	23.7*	SE	5	2	10	19	8.2	
KOTZEBUE	3	1001.9	1002.5	- 4.4	-11.1	- 7.8	-3.8	6.1	6	-23.9	27	0	29	-10.0	81	32	17	11	8	0	277	203	5.2	ENE	14.3*	E	5	11	2	18	6.3	
MC GRATH	102	985.4	998.9	- 1.1	- 9.4	- 5.3	-2.4	11.7	6	-25.6	28	0	28	- 7.8	80	19	- 14	7	10	0	274	203	2.5	N	9.4	SSW	6	2	4	25	8.5	
NOME	4	1000.2	1000.8	0.0	- 7.2	- 3.5	-2.2	10.0	1	-16.7	28	0	28	- 7.8	73	20	- 24	15	5	0	25	25	5.5	N	18.3*	NNW	7	7	6	18	7.0	37
ST. PAUL ISLAND	7	1001.4	1002.4	5.0	0.0	2.2	-0.7	8.9	5+	- 5.0	24	0	16	0.6	85	66	- 14	15	24	0	89	51	9.2	NW	25.0*	W	28	0	4	27	9.3	
SHEMYA	37	1009.3	1012.7	7.8	3.9	5.7	1.4	11.1	1	0.6	13+	0	0	2.8	82	77	7	15	20	0	43	T	8.6	NW	22.8*	SW	27	1	8	22	8.3	
YAKUTAT	9	995.5	996.7	9.4	3.3	6.2	0.7	13.9	3	- 2.2	5	0	6	3.9	89	762	264	177	26	4	15	T	3.8	E	17.0*	ESE	31+	2	2	27	9.0	
ARIZONA																																
FLAGSTAFF	2131	793.7	1019.1	18.9	0.6	9.9	1.3	27.2	1	- 3.9	15+	0	13	- 0.6	58	32	- 7	16	6	3	0	0	2.5	SSW	8.9*	SSW	29+	18	4	9	3.9	
PHOENIX	340	974.2	1012.8	32.2	16.7	24.6	2.2	38.9	3	12.8	15	16	0	7.2	37	37	25	36	4	1	0	0	2.7	ESE	13.9*	SW	19	19	8	4	3.0	88
PRESCOTT	1528	849.4	1016.5	24.4	7.8	16.0	1.8	32.2	1	2.2	13	1	0	3.3	50	22	4	19	5	3	0	0	3.5	SSW	13.0	SW	12	18	6	7	3.6	82
TUCSON	788	926.0	1013.2	30.6	15.0	22.9	1.8	35.6	3+	10.6	20	13	0	3.9	35	15	- 1	12	2	1	0	0	3.6	SSE	11.2	SW	12+	19	6	6	3.4	86
WINSLOW	1487	854.5	1017.7	26.1	7.8	16.9	2.5	31.7	1	2.2	15	0	0	3.3	49	27	10	20	6	3	0	0	3.4	SW	14.3*	WSW	30	17	9	5	3.6	
YUMA	61	1007.2	1012.6	33.9	18.9	26.3	1.1	41.1	8	14.4	14	23	0	11.1	45	23	13	20	3	1	0	0	2.2	N	15.6	SE	18	16	10	5	3.3	81
ARKANSAS																																
FORT SMITH	137	1002.1	1019.1	31.1	11.7	21.4	3.8	35.6	11+	1.1	29	11	0	10.6	56	2	- 86	1	3	1	0	0	2.5	NE	11.2	W	16	20	6	5	3.0	90
LITTLE ROCK	78	1006.7	1019.9	31.1	11.1	21.2	3.9	36.1	11+	1.7	30	15	0	10.6	59	3	- 71	T	1	2	0	0	2.4	WSW	12.1	E	15	22	8	1	2.4	87
TEXARKANA	110	1005.9	1019.4	30.6	14.4	22.4	3.4	35.0	9	5.6	29	12	0	11.7	56	T	- 76	T	0	0	0	0	2.8	SE								81
CALIFORNIA																																
BAKERSFIELD	151	998.3	1016.2	25.0	13.3	19.2	-0.1	34.4	2	10.0	12	3	0	11.7	65	19	10	7	3	0	0	0	1.8	NW	8.9*	NNW	11	16	5	10	4.4	
BISHOP	1252	875.1		25.6	5.6	15.7	1.8	35.0	1	0.6	12	3	0			2	- 9	1	4	2	0	0						14	10	7	4.2	
BLUE CANYON	1609	840.6		16.1	7.2	11.4	-0.7	28.3	1	1.7	12	0	0			92	5	51	8	0	0	0	2.1	SSE	13.4	S	22	10	6	15	5.9	
BURBANK	213	989.6	1015.5	25.6	13.3	19.5	0.4	31.1	10	8.9	31	0	0	11.1	65	19	6	10	4	0	0	0	2.2	S	8.0*	SW	11+	13	10	8	4.7	
EUREKA U	13	1015.2		17.2	10.6	13.9	1.4	22.8	14	5.6	26	0	0			137	56	39	13	0	0	0	2.8	SE#	15.2	S	14	4	8	19	7.5	42
FRESNO	99	1003.7	1015.7	25.6	11.7	18.6	0.6	35.0	2	5.0	31	3	0	11.1	67	24	13	13	4	0	0	0	2.4	WNW	9.8	NW	11	15	8	8	4.1	75
LONG BEACH	10	1014.3	1016.0	25.6	14.4	20.2	1.3	30.6	10	11.7	31	0	0	13.9	73	11	7	10	3	1	0	0	2.2	WNW	9.8*	W	11	12	9	10	5.3	
LOS ANGELES	30	1011.8	1015.7	23.9	16.1	19.9	2.5	27.8	7	12.8	31	0	0	14.4	74	11	1	11	1	0	0	0	3.3	W	10.3*	W	11	12	7	12	5.0	
LOS ANGELES U	95			25.6	16.1	20.6	0.9	30.6	7	13.3	31	0	0			14	4	9	3	1	0	0	2.3	W#	13.4	N	18	13	10	8	4.6	71
MT SHASTA R	1080	893.6		17.2	3.9	10.5	-0.6	31.1	1	- 3.9	31	0	6			72	10	36	8	0	0	0						11	8	12	5.6	
OAKLAND	1	1016.5	1016.9	20.0	13.3	16.7	0.5	24.4	7	7.8	31	0	0	12.8	79	37	17	21	6	0	0	0	3.5	WNW	13.4*	S	10	13	8	10	5.2	
POINT ARGUELLO R	112	1002.4		20.6	10.0	15.3	0.6	26.1	10	5.6	13	0	0			21	10	10	6	0	0	0	2.2		9.4*	NW	30+	8	10	13	6.2	
RED BLUFF	104	1003.1	1016.0	23.9	11.1	17.6	-1.1	38.9	1	5.0	28+	2	0	8.9	62	56	21	37	9	1	0	0	3.7	SSE	14.8	SE	4	9	10	12	5.4	75
SACRAMENTO	5	1015.1	1016.6	25.0	11.1	17.9	-0.4	37.2	1	3.3	31	1	0	11.7	75	28	8	22	6	0	0	0	1.8	SW	10.7	SW	4	13	9	9	5.0	78
SACRAMENTO U	7			23.9	12.2	18.1	-0.1	36.1	1	6.1	31	1	0			32	12	26	6		0	0										
SANDBERG R	1377	864.1		18.9	10.0	14.5	-0.3	30.6	2	3.9	31	0	0			54	41	28	4	1	T	0	4.6	S	14.8*	NNW	12+	16	8	7	4.2	
SAN DIEGO	4	1011.9	1015.2	24.4	16.1	20.1	1.4	27.2	27+	11.7	17	0	0	15.0	74	3	- 9	3	2	0	0	0	2.5	WNW	9.4	NW	10	10	12	9	5.1	68
SAN FRANCISCO	2	1016.5	1017.2	21.1	12.2	16.8	0.9	27.8	7	7.2	31	0	0	11.7	76	34	15	17	7	0	0	0	3.8	W	14.3	W	29	11	10	10	5.3	
SAN FRANCISCO U	16			20.6	13.9	17.2	0.8	25.6	7	11.1	31+	0	0			35	13	19	5	0	0	0	3.0	W#	11.2	SE	10					68
SANTA CATALINA	478	960.0		21.7	14.4	18.2		27.2	25	10.6	16	0	0			9		7	3	0	0	0						14	7	10	4.8	
SANTA MARIA	73	1007.9	1016.7	22.8	10.6	16.9	1.1	28.3	25+	7.2	13	0	0	11.7	79	26	11	13	4	0	0	0	2.7	WNW	11.2*	WNW	29	11	11	9	5.0	
STOCKTON	9	1014.8	1016.5	23.9	11.7	17.8		34.4	1	6.7	31	1	0	11.1	71	37		21	6	0	0	0	2.7	W	9.4*	WNW	23+	10	14	7	5.1	
COLORADO																																
ALAMOSA	2297	775.4		20.6	- 1.7	9.4	2.5	25.0	2+	- 6.7	16	0	23			7	- 8	5	3	0	18	T						14	10	7	4.3	
COLORADO SPRINGS	1882	814.2	1017.1	22.2	6.7	14.6	4.4	28.3	4+	- 2.8	31	0	1	- 0.6	41	10	- 8	10	1	0	76	254	4.1	NNE	14.3*	NNE	13	13	11	7	4.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
COLORADO	M.	Mb.	Mb.	°C.	C.	C.	C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s							%
DENVER	1610	840.4	1016.8	23.3	5.6	14.4	3.1	29.4	4+	- 3.9	27	0	2	0.0	45	8	- 18	4	2	0	28	254	3.4	S	12.1	N	13	18	6	7	4.1	83
GRAND JUNCTION	1478	862.1	1016.9	23.9	8.9	16.3	3.5	31.1	1	1.1	31	0	0	0.6	41	15	- 4	10	5	1	0	0	2.4	SE	14.3	SW	12	16	9	6	4.1	75
PUEBLO	1414	858.8	1016.5	25.6	6.7	16.2	3.5	31.1	9+	0.6	31	0	0	1.1	42	6	- 19	6	1	0	T	0	3.9	WSW	19.2	N	31	16	9	6	3.7	79
CONNECTICUT																																
BRIDGEPORT	2	1019.2	1020.0	20.0	8.9	14.4	1.4	27.2	19	3.3	30+	0	0	8.3	70	8	- 77	5	2	1	0	0	5.5	WSW	15.6*	NW	30+	16	9	6	3.7	
HARTFORD	52	1012.6	1018.5	22.8	5.6	13.9	2.7	32.8	7	- 0.6	10+	1	3	5.6	64	9	- 72	5	2	1	T	T	2.8	S	14.8	NW	30	18	6	7	3.9	82
NEW HAVEN	2	1018.9		19.4	7.8	13.7	1.4	26.1	21+	0.6	13	0	0			7	- 81	6	2	1	0	0	3.3		15.2	NW	30	18	7	6	3.8	82
DELAWARE																																
WILMINGTON	24	1017.2	1020.5	21.7	7.8	14.7	1.0	27.2	19+	2.2	31+	0	0	7.2	64	5	- 69	5	1	1	0	0	3.0	NW	17.0*	WNW	3	17	8	6	3.5	
DIST.OF COLUMBIA																																
WASHINGTON U	22			23.9	10.6	17.2		30.0	7	5.6	30	0	0			0	- 75	0	0		0	0										
WASH NATL AP	4	1016.2	1020.8	23.3	8.9	16.2	1.2	28.9	7	4.4	31+	0	0	7.8	62	T	- 78	T	0	1	0	0	3.3	S	17.4	NW	29	18	6	7	3.5	83
FLORIDA																																
APALACHICOLA U	4	1017.1		26.7	16.7	21.4	-0.4	30.6	28	7.2	30	0	0			2	- 60	1	2	0	0	0	3.3	N	15.2	E	15	24	5	2	2.0	88
DAYTONA BEACH	9	1016.0	1017.8	26.1	17.8	22.1	-0.9	30.0	28	7.2	31	0	0	17.2	77	69	- 74	17	10	1	0	0	4.7	NNE	12.5*	N	23	13	10	8	4.6	
FORT MYERS	4	1015.7		30.0	18.3	24.3	-0.2	31.7	22+	12.2	31+	0	0			1	-103	1	1	2	0	0	4.6		12.1*	NNE	7+	19	9	3	3.5	
JACKSONVILLE	7	1017.0	1018.4	26.1	15.6	20.8	-0.8	30.6	28	5.0	31	0	0	15.0	75	39	- 92	15	7	0	0	0	3.8	N	17.9	NE	24	15	8	8	3.7	75
KEY WEST	2	1014.0	1015.1	28.3	23.3	25.8	-0.3	30.6	4+	20.6	31+	0	0	20.0	73	46	-102	37	7	2	0	0	6.1	ENE	16.1	NE	6	16	9	6	4.2	75
LAKELAND U	65			27.8	18.3	23.0	-0.6	30.6	28+	10.0	30	0	0			8	- 66	6	5	1	0	0	3.8					15	14	2	3.4	74
MIAMI BEACH	3			27.8	22.2	25.1	-0.7	31.7	23	17.8	30	0	0			98	- 73	49	11	0	0	0	6.9	E				8	14	9	5.5	63
MIAMI	2	1014.0	1015.1	28.3	20.6	24.6	-0.9	30.0	27+	16.1	30	0	0	19.4	74	113	- 96	54	12	2	0	0	5.1	NE	14.3*	ENE	6	6	15	10	5.7	
ORLANDO	32	1012.9	1017.4	28.3	18.3	23.2	-0.1	31.1	28+	9.4	31	0	0	16.7	71	12	- 89	4	6	1	0	0	4.6	NNE	9.4*	N	29+	13	13	5	3.8	
PENSACOLA	4			27.2	15.0	21.3		32.2	22	3.3	30	1	0			0	- 89	0	0	0	0	0	2.9	NE	14.8	N	29					
TALLAHASSEE	18	1016.9	1019.6	27.8	12.2	19.9	-0.9	31.1	28+	0.0	31	0	1	12.8	69	11	- 50	11	1	0	0	0	4.2	N	11.2*	N	29	25	2	4	2.3	
TAMPA	6	1016.1	1017.7	30.0	16.7	23.2	-0.6	32.8	1	5.0	30	1	0	16.1	71	7	- 63	6	3	0	0	0	5.6	NNE	13.0*	E	15	17	12	2	3.2	75
WEST PALM BEACH	5	1015.1	1016.2	28.9	20.6	24.6	-1.1	31.1	21	14.4	30	0	0	18.3	72	351	149	169	13	4	0	0	5.1	ENE	16.5*	ENE	6	6	16	9	5.9	
GEORGIA																																
ATHENS	245	991.8	1020.8	25.6	10.6	18.2	0.9	31.1	12	2.2	31	0	0	10.0	64	T	- 73	T	0	1	0	0	2.8	NE	10.3*	WNW	28	25	4	2	1.6	
ATLANTA	306	979.0	1021.2	25.0	12.2	18.4	1.3	29.4	21	3.9	31+	0	0	9.4	62	T	- 62	T	0	0	0	0	2.9	ENE	8.9*	NW	28	26	3	2	1.6	93
AUGUSTA	44	1013.3	1020.1	26.1	8.9	17.6	-0.8	31.1	12	- 1.7	31	0	2	10.6	69	T	- 51	T	1	1	0	0	2.9	NW	11.2*	NNW	12	27	1	3	1.7	
COLUMBUS	117	1006.3		26.7	11.1	19.1	0.5	31.7	21	0.6	31+	0	0			0	- 45	0	0	0	0	0	3.0		9.8*	NW	28	23	4	4	2.6	
MACON	109	1006.4	1020.1	26.7	11.1	18.9	-0.1	32.2	21	1.1	31	1	0	10.6	63	0	- 51	0	0	0	0	0	3.0	NE	9.4	NW	29	26	2	3	1.9	90
ROME	194	998.3		26.7	7.2	16.7	0.5	31.1	21	- 2.2	30	0	2			T	- 74	T	0	1	0	0						26	3	2	1.6	
SAVANNAH	15	1016.7	1019.3	26.1	12.2	19.3	-0.3	30.0	28	1.7	31+	0	0	11.7	67	1	- 65	1	1	1	0	0	4.8	NE	11.2	N	29	21	7	3	2.7	86
THOMASVILLE U	86			26.7	14.4	20.4	-0.5	31.7	4	5.0	30	0	0			T	- 58	T	0		0	0										
HAWAII																																
HILO	9	1014.0	1016.0	28.3	19.4	23.9	-0.1	28.9	31	17.8	27	0	0	20.0	80	289	14	44	27	0	0	0	3.6	WSW	10.3	E	11+	1	15	15	7.3	33
HONOLULU	2	1015.5	1015.9	30.6	22.8	26.5	0.8	31.1	27+	18.3	31	0	0	18.9	66	27	- 19	10	10	0	0	0	4.7	ENE	12.1	E	6	12	13	6	4.8	71
KAHULUI	13	1012.6	1015.7	29.4	21.1	25.3		32.8	2	17.8	27+	1	0	19.4	73	26		10	12	0	0	0	6.9	NE	17.0*	ENE	5	14	10	7	4.8	72
LIHUE	35	1011.5	1017.2	29.4	22.2	25.9	0.9	30.6	4	18.9	10+	0	0	20.0	72	26	- 76	8	17	4	0	0	5.6	NE	10.7	NE	7	7	17	7	5.5	44
IDAHO																																
BOISE	865	920.7	1016.7	20.6	8.3	14.3	2.9	32.8	3	- 3.9	26	1	3	4.4	56	25	4	11	10	2	T	T	3.4	SE	13.0	SE	4	5	11	15	6.5	52
IDAHO FALLS 42NW R	1460			19.4	- 1.1	9.2	2.4	28.3	1	-11.1	27	0	18			8	- 2	4	5		0	0	3.1	N	14.8A	SSW	23					
IDAHO FALLS 46W R	1504	850.4		18.9	0.0	9.6	2.4	27.8	1	-11.7	27	0	15			9	- 8	6	3		25	25	2.4	SW	12.5A	SW	23					
LEWISTON	431	964.7		20.0	7.2	13.4	2.3	28.3	2	- 2.2	27	0	3			15	- 16	10	6	0	0	0						8	6	17	6.4	
POCATELLO	1355	865.1	1017.9	21.7	3.9	12.7	3.2	30.6	3	- 7.8	27	0	6	1.7	52	8	- 14	4	5	1	0	0	4.1	WSW	17.0	S	5	9	18	4	5.3	71
ILLINOIS																																
CAIRO U	96	939.2		27.2	13.9	20.6	3.9	33.3	11	3.3	30	1	0			9	- 64	9	2	3	0	0	3.0	S#	13.0	SW	31	21	6	4	2.8	86
CHICAGO O HARE	201	994.8	1019.6	23.9	7.8	15.8		32.8	6	- 2.8	30+	1	5	7.8	62	7		3	6	2	0	0	3.5	S	10.3*	WNW	16	13	10	8	4.7	
CHICAGO MIDWAY	186	997.0	1019.9	24.4	11.7	17.9	4.9	34.4	6	2.2	30	1	0	8.9	61	16	- 55	11	4	1	0	0	4.4	S	10.7	NW	28+	13	10	8	4.6	62
MOLINE	177	996.7	1019.0	25.0	10.6	18.0	5.6	33.3	6	0.6	29	1	0	10.0	65	16	- 46	6	6	1	0	0	3.5	SSW	10.3	NW	28	15	10	6	4.1	66
PEORIA	199	998.0	1020.4	25.0	10.6	17.9	4.9	32.2	6	1.1	30+	1	0	8.3	60	36	- 28	19	4	3	0	0	3.7	S	10.3	W	28	17	6	8	3.7	77
ROCKFORD	222	991.9	1019.2	23.9	9.4	16.7	5.3	32.2	6	0.0	30	1	1	9.4	66	26	- 42	20	5	4	0	0	3.7	SSW	8.9*	SSW	30+	14	7	10	4.7	
SPRINGFIELD	179	996.1	1019.3	26.7	11.7	19.1	5.4	32.8	7	1.7	30+	2	0	8.3	56	27	- 47	23	5	3	0	0	4.5	S	12.5	NW	28	17	10	4	3.2	83

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1004.6	1020.6	28.3	7.2	17.8	3.0	33.9	11	- 2.8	30	4	2	7.2	58	11	- 55	7	2	2	0	0	2.2	NW	13.9	NW	27	20	8	3	2.5	88
FORT WAYNE	241	989.5	1020.9	25.0	8.3	16.5	4.6	31.7	7+	- 2.8	30	0	1	6.7	57	12	- 60	12	3	1	0	0	3.1	WSW	13.4	SW	2	15	9	7	4.0	78
INDIANAPOLIS	242	990.6	1020.8	25.0	8.3	16.7	3.7	30.0	23+	- 2.8	30	0	1	7.2	59	4	- 62	7	3	1	0	0	3.2	E	11.6*	N	28	16	10	5	3.7	80
SOUTH BEND	234	992.0	1020.1	23.9	9.4	16.6	4.7	33.3	6	0.0	30	1	1	6.7	58	31	- 50	14	4	3	0	0	3.6	S	8.9*	NW	28+	15	6	10	4.6	
IOWA																																
BURLINGTON	212	993.5	1019.1	26.1	11.7	18.9	5.9	33.3	6	1.1	29	1	0	8.9	59	30	- 38	14	8	6	0	0	4.4	SSW	17.0	SW	16	19	7	5	3.6	81
DES MOINES	289	987.1	1018.3	24.4	11.7	18.1	5.4	35.0	5	- 2.2	29	2	1	10.0	64	65	13	47	7	5	0	0	3.9	S	12.5	N	31	16	10	5	3.7	73
DUBUQUE	325	993.2		22.2	10.0	16.1	5.7	30.0	6	1.1	29	0	0			7	- 63	3	5	3	0	0			12.5*	SSW	1	8	14	9	5.1	
SIOUX CITY	334	975.8	1017.2	23.3	8.9	16.3	4.6	33.9	5	- 3.9	29	3	2	8.9	68	21	- 15	11	3	3	0	0	3.5	ESE	13.9	S	23	15	6	10	4.4	63
WATERLOO	265	985.5	1017.6	23.9	8.9	16.3	5.1	35.0	6	- 2.8	29	2	1	9.4	69	32	- 22	13	8	6	0	0	4.0	S	9.8*	NW	28	15	8	8	4.5	
KANSAS																																
CONCORDIA	448	967.1	1016.8	26.1	11.7	18.8		35.6	4	0.0	29	6	1	9.4	60	74		30	5	5	0	0	5.4	S	14.3	S	23+	21	4	6	2.8	83
DODGE CITY	791	929.2	1016.7	27.2	11.1	19.2	4.6	34.4	2+	1.7	31	9	0	7.2	54	17	- 20	14	4	4	0	0	5.4	SSW	15.6	N	31	20	5	6	3.2	84
GOODLAND	1111	890.2	1016.6	25.6	6.1	15.8	4.1	33.3	4	- 3.3	31	4	3	4.4	54	1	- 19	1	1	1	T	0	5.1	S	16.1*	SSW	13	22	5	4	2.8	
TOPEKA	267	982.2	1017.6	27.8	11.7	19.8	5.2	35.6	5	- 2.2	29	7	1	9.4	59	24	- 35	9	6	6	0	0	4.7	S	21.9	SE	16	19	5	7	3.4	80
WICHITA	403	968.7	1017.1	26.7	12.8	19.8	4.3	33.9	10+	2.8	29	6	0	10.6	62	63	2	35	2	5	0	0	5.0	S	18.8	N	31	17	5	9	3.7	77
KENTUCKY																																
COVINGTON	265	988.8	1020.7	25.0	7.8	16.6	2.6	31.1	11	- 3.9	30	0	1	6.1	55	6	- 51	3	4	2	0	0	2.8	SSW	9.4*	SW	2	19	9	3	3.1	
LEXINGTON	298	985.4	1021.3	25.6	10.0	17.7	3.2	30.0	20+	- 2.2	30	0	1	6.1	51	8	- 50	4	3	3	0	0	2.9	SSW	11.2*	WNW	11	23	7	1	2.3	
LOUISVILLE	144	1001.3	1020.7	26.1	8.9	17.5	3.4	31.7	11	0.0	30	0	1	8.9	63	21	- 37	19	3	1	0	0	2.1	SSE	10.3	S	2	19	9	3	2.8	86
LOUISIANA																																
ALEXANDRIA	28	1015.0	1020.0	30.0	11.1	20.6		33.3	11+	- 1.1	30	7	1	13.3	72	9		9	1	3	0	0	1.1	S	10.3	NNW	27	17	10	4	3.1	
BATON ROUGE	20	1016.8	1020.0	30.6	14.4	22.6	2.3	33.9	9+	5.0	30	10	0	13.3	64	5	- 57	5	2	2	0	0	1.7	NE	9.8	N	29	22	5	4	3.1	
LAKE CHARLES	4	1018.5	1019.8	29.4	15.6	22.6	1.2	33.3	10	6.1	30	1	0	16.1	73	T	- 78	T	0	2	0	0	2.5	ENE	8.0*	SSW	31+	15	12	4	3.8	
NEW ORLEANS	1	1017.5	1019.8	28.3	13.9	21.1	0.1	31.7	9	7.2	30	0	0	16.1	76	T	- 72	T	0	1	0	0	2.1	NE	8.0*	NNE	28	19	10	2	3.1	
NEW ORLEANS AUDUBON	2			29.4	17.8	23.6		32.2	4	11.7	30	1	0			0		0	0	0	0	0	1.3	NE#	6.3	NE	29	18	12	1	2.9	74
SHREVEPORT	77	1010.9	1020.1	30.6	13.9	22.2	2.6	34.4	4	6.7	30	11	0	11.7	56	0	- 71	0	0	0	0	0	3.1	SE	11.2	SSW	31	19	10	2	2.8	88
MAINE																																
CARIBOU	190	991.5		15.6	2.8	8.7	2.6	23.9	25+	- 5.0	22+	0	14			86	- 1	30	10	1	0	0						7	11	13	6.2	
PORTLAND	19	1013.0	1017.0	19.4	3.3	11.3	2.1	31.1	7	- 5.0	10	0	7	5.0	70	47	- 34	35	5	1	43	25	3.8	NW	20.1	N	29	18	8	5	3.8	74
MARYLAND																																
BALTIMORE	45	1016.0	1020.8	22.8	6.7	14.8	0.9	29.4	7	1.7	31	0	0	6.1	63	T	- 81	T	0	0	0	0	3.2	W	12.5	NW	30	19	6	6	3.2	85
BALTIMORE U	4			23.3	11.7	17.6	2.1	30.6	7	5.6	30	0	0			3	- 80	3	1		0	0										
FREDERICK	90			23.3	5.6	14.4	1.3	29.4	7	0.0	14	0	1			8	- 72	8	1	1	0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	993.3	1016.7	20.6	8.3	14.2	2.7	31.1	7	- 0.6	30	0	1			44	- 51	42	4		5	T	6.4	SSW	21.9	NW	30					76
BOSTON	5	1013.0	1017.6	21.1	10.0	15.6	2.8	32.2	7	1.7	30	1	0	5.6	57	32	- 48	30	4	1	T	T	5.8	SW	20.1	NW	30	21	3	7	3.4	82
NANTUCKET	13	1017.6	1018.1	17.2	9.4	13.2	1.1	22.8	21+	1.7	30	0	0	8.9	78	100	6	68	4	2	T	0	5.9	SW	29.1	N	29	17	5	9	4.1	69
PITTSFIELD	357			20.0	3.9	11.9	3.0	29.4	7	- 3.3	10	0	7			11	- 72	8	3		T	0										
WORCESTER	301	981.3	1018.1	20.0	7.8	13.8	3.5	29.4	7	0.0	30	0	1	4.4	58	37	- 51	28	3	1	13	T	4.6	W	14.8*	NNW	30	21	2	8	3.3	
MICHIGAN																																
ALPENA	210	993.7		20.6	3.9	12.3	3.6	30.0	6	- 6.1	30	0	10			24	- 37	10	7	2	0	0	2.5	SW	11.6	NW	2	9	10	12	5.3	68
DETROIT	189	993.8	1020.4	23.9	10.6	17.1	4.9	33.3	7	0.6	30	2	0	7.2	57	13	- 54	14	3	1	0	0	3.7	SW	21.5	NW	2	11	14	6	4.5	75
DETROIT M WAYNE CO	193	996.5	1020.7	22.8	6.1	14.6	2.9	32.8	6	- 2.8	30	2	4	7.2	69	14	- 51	17	4	1	0	0	2.9	SW				12	13	6	4.3	
DETROIT WILLOW RUN	217	992.1	1020.5	22.8	7.2	15.0	2.8	32.8	6	- 1.7	30	2	1	6.7	66	14	- 50	15	3	1	0	0	3.4	SSW	15.6*	WNW	2	12	13	6	4.3	
ESCANABA U	181			17.2	8.3	12.9	4.2	24.4	2	1.1	4	0	0			18	- 36				0	0										
FLINT	233	993.2	1021.1	22.2	6.7	14.6	4.1	31.7	6	- 5.6	30	0	3	6.7	65	15	- 45	9	3	2	0	0	3.4	SSW	11.2*	NW	2	9	13	9	4.9	
GRAND RAPIDS	210	994.8	1020.4	21.7	8.3	14.9	4.2	28.3	23	- 2.2	30	0	1	7.2	66	26	- 40	13	5	3	0	0	3.5	S	13.4	NW	2	12	7	12	5.1	65
LANSING	260	988.1	1020.3	22.8	6.7	14.7	3.9	31.7	6	- 5.6	30	0	6	6.7	65	14	- 50	10	3	2	0	0	2.7	SSW	15.6	NW	2	12	11	8	4.7	66
MARQUETTE U	206	990.4		20.0	9.4	14.9	6.0	29.4	1	1.7	4	0	0			23	- 36	11	10	2	T	T	3.6	W#	13.9	SW	5	12	4	15	5.7	62
MUSKEGON	191	997.3	1019.9	20.6	8.3	14.7	4.1	26.7	23+	- 2.2	30	0	1	9.4	75	47	- 18	19	7	5	0	0	4.6	SSW	17.0*	NNW	2	10	9	12	5.3	
SAULT STE MARIE	220	995.7	1018.5	18.3	6.1	12.2	4.8	26.1	24	- 2.8	30	0	4	7.2	79	4	- 68	1	6	0	0	0	3.4	ENE	10.3*	NW	7+	7	12	12	6.3	65
MINNESOTA																																
DULUTH	435	975.8	1017.5	19.4	7.2	13.3	6.6	28.9	5	- 2.8	29	0	1	6.1	67	26	- 29	25	2	0	0	0	4.6	SSW	17.0	W	2	14	8	9	4.7	69

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 32.2 °C or above	Temperature: No. of days Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .25 mm. or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers) Speed	Wind: Fastest mile (1.6 kilometers) Direction	Wind: Fastest mile (1.6 kilometers) Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
INTERNATIONAL FALLS	359	974.2	1015.6	19.4	5.0	12.0	6.2	31.1	5	- 6.7	29	0	7	6.1	71	9	- 36	8	3	0	0	0	4.6	S	12.5*	W	26+	14	6	11	5.0	
MINNEAPOLIS	251	984.2	1017.8	21.1	7.8	14.5	5.4	30.0	5	- 3.9	29	0	1	6.7	65	21	- 20	10	4	1	0	0	3.3	SE	13.9	NW	31	16	5	10	4.4	71
ROCHESTER	395	970.6	1018.6	20.6	8.3	14.5	4.8	31.1	6	- 2.8	29	0	2	7.8	69	38	- 6	12	10	7	0	0	5.2	S	13.4*	WSW	6	15	7	9	4.3	
ST CLOUD	315	978.4		20.6	6.7	13.6	5.1	30.0	5+	- 5.0	29	0	3			15	- 26	14	2	0	0	0						15	5	11	4.6	
MISSISSIPPI																																
JACKSON	93	1007.6	1020.2	29.4	12.8	21.1	0.0	33.9	13	0.6	30	6	0			0		0	0	0	0	0	2.5	E	8.9	NNW	28	20		2	2.8	
MERIDIAN	89	1010.2	1020.8	29.4	9.4	19.4	0.8	34.4	12	- 1.7	30	8	1	10.6	66	0	- 56	0	0	0	0	0	1.6	N	9.4*	N	29	18	10	3	3.4	
VICKSBURG U	71	1010.4		28.9	15.6	22.2	2.4	32.2	13+	6.1	30	3	0			T	- 52	T	0	1	0	0	2.8		7.6	NE	29+	18	10	3	3.1	89
MISSOURI																																
COLUMBIA	237	989.7	1018.0	27.8	13.3	20.4	5.6	33.3	10	1.7	29	4	0	8.3	51	20	- 59	12	6	4	0	0	4.2	SSE	11.6	N	31+	17	7	7	3.5	76
KANSAS CITY	226	982.9	1017.4	28.3	16.1	22.2	6.8	36.1	10+	3.3	29	7	0	8.9	47	24	- 49	9	7	5	0	0	3.9	SSW	11.6	SW	15	17	9	5	3.5	77
ST JOSEPH	247	983.0		28.3	11.1	19.9	5.8	36.1	10	- 2.2	29	6	1			13	- 42	10	3	4	0	0	3.0	SSE	9.4*	N	31	21	7	3	2.6	
ST LOUIS	163	998.8	1019.6	26.7	12.2	19.4	4.4	34.4	11	0.6	29	4	0	8.3	53	72		43	5	5	0	0	3.8	SSE	14.8	SW	17	15	10	6	3.7	86
ST LOUIS RFC	142			27.2	15.0	21.0	5.0	33.3	11	5.0	29	4	0			56	- 14	38	6		0	0										
SPRINGFIELD	386	971.9	1019.1	28.3	12.2	20.2	4.8	33.3	7	- 2.2	29	4	1	8.9	54	11	- 85	8	4	1	0	0	4.8	SSE	13.0	N	31	18	7	6	3.4	91
MONTANA																																
BILLINGS	1087	892.5	1016.6	20.0	5.6	12.7	2.7	32.2	4	- 5.6	27	1	5	0.6	50	8	- 20	5	4	1	25	T	4.5	WSW	11.2	NW	25+	11	11	9	4.9	71
GLASGOW	694	940.5		19.4	5.0	12.2	4.7	30.0	3	- 7.2	31	0	6			3	- 13	2	4	0	0	0						14	5	12	4.9	
GREAT FALLS	1116	888.7	1016.2	18.9	5.6	12.3	3.1	29.4	2	- 5.0	31	0	5	0.0	48	16	- 3	7	5	2	0	0	5.6	SW	17.0	SW	25+	12	5	14	5.5	65
HAVRE	787	926.3		19.4	3.3	11.4	3.5	30.6	3	-10.0	31	0	6			16	- 4	10	5	1	0	0	3.9		23.2	NW	25	14	6	11	5.0	69
HELENA	1187	880.2	1017.8	18.3	2.8	10.5	2.9	29.4	3	- 6.1	31	0	7	1.7	62	35	19	20	9	3	T	0	3.3	WSW	15.2	S	4	9	11	11	5.3	61
KALISPELL	904	913.2		15.0	0.0	7.7	1.6	24.4	1	- 7.2	27	0	16			17	- 14	8	7	1	T	0	2.1					7	9	15	6.3	
MILES CITY	801			20.6	5.6	13.2	3.7	33.9	4	- 7.2	27	1	5			T	- 22	T	0	1	0	0	3.5	SE	11.2*	WSW	25					
MISSOULA	972	901.4	1019.3	16.1	1.1	8.6	1.9	29.4	3	- 7.8	31	0	12	3.3	75	16	- 9	8	7	2	T	T	2.5	NNW	13.9	NW	22	6	8	17	6.7	44
NEBRASKA																																
GRAND ISLAND	561	950.9	1017.3	23.9	6.7	15.3	2.8	33.3	1	- 2.8	31	2	4	7.2	66	2	- 23	2	1	0	0	0	4.2	S	13.0*	S	29	20	4	7	3.2	
LINCOLN U	351			25.6	11.7	18.6	4.9	34.4	5	- 2.2	29	5	1			18	- 22	13	4	4	0	0	4.1	S#	15.6	SW	14	21	7	3	3.0	84
NORFOLK	471	961.3		23.9	7.8	15.9	4.3	35.0	1	- 5.0	29	2	3			13	- 17	9	4	3	0	0						16	7	8	3.9	
NORTH PLATTE	847	917.3	1016.3	23.9	5.6	14.5	3.9	32.8	1	- 5.6	31	1	2	6.1	64	17	- 6	15	3	3	0	0	4.0	SSE	15.6	SE	13	18	7	6	3.3	74
OMAHA	298	977.3	1017.1	26.1	10.0	18.0	4.8	35.0	5	- 2.2	29	2	1	8.9	61	27	- 17	15	5	2	0	0	3.6	SSE	12.5	NW	17	20	7	4	3.2	81
OMAHA N OMAHA AP	403	969.2		24.4	11.7	17.8	5.7	33.9	5	1.1	29	2	0			28	- 14	15	3	1	0	0						19	8	4	3.5	
SCOTTSBLUFF	1204	881.2	1017.0	23.3	5.0	14.1	3.9	31.7	4	- 3.9	28	0	3	3.9	58	27	10	26	5	0	0	0	4.2	NW	13.4*	WNW	13	20	2	9	3.4	
VALENTINE	789	925.3		23.3	6.1	14.7	5.1	35.0	5+	- 4.4	31	2	2			15	- 7	15	3	2	0	0	4.2	N#	16.5	S	13	20	7	4	3.3	84
NEVADA																																
ELKO	1547	846.8	1017.9	20.6	1.1	10.7	2.4	29.4	3+	- 6.7	27	0	14	1.1	57	45	26	29	7	0	132	51	2.5	SW	10.7*	S	11	8	11	12	5.9	
ELY	1907	811.3	1017.0	19.4	1.1	10.4	2.7	27.8	3	- 8.3	31	0	13	0.0	55	9	- 9	4	8	2	0	0	3.9	S	18.8	S	4	8	16	7	5.0	79
LAS VEGAS	659	949.7	1015.2	27.8	14.4	21.2	1.7	37.2	1	9.4	31	8	0	5.0	41	15	10	9	5	2	0	0	2.9	W	20.6*	S	4	19	6	6	3.6	79
RENO	1342	863.7	1017.7	21.7	1.1	11.3	1.2	32.2	2	- 6.7	31	1	15	1.7	57	6	- 7	4	4	0	0	0	2.2	S	17.0	S	22	9	9	13	5.6	60
WINNEMUCCA	1310	869.2		21.7	2.2	11.9	3.2	31.7	2	- 8.9	31	0	10			16	- 5	9	6	3	0	0	3.2	S	16.1	SE	4	7	8	16	6.4	62
NEW HAMPSHIRE																																
CONCORD	103	1006.9	1017.8	21.7	2.8	12.1	2.8	32.2	7	- 3.9	10	1	9	3.9	65	31	- 37	22	5	1	T	0	2.3	NW	15.2	NW	30	19	7	5	3.4	78
MT WASHINGTON OBS	1909	806.3		5.6	- 1.7	1.7	2.3	13.3	7	-13.3	31	0	16			99	- 58	51	10	2	323	25	14.7	W#	50.1Y	W	30	10	8	13	5.9	59
NEW JERSEY																																
ATLANTIC CITY	18	1018.2	1020.5	22.2	8.9	15.5	1.5	28.3	7	3.3	5	0	0	7.8	66	4	- 77	3	2	1	0	0	4.1	WSW	15.6*	NW	3	19	7	5	3.3	73
ATLANTIC CITY U	3			19.4	10.6	14.9	0.1	26.1	17	4.4	31+	0	0			1	- 86	T	2	0	0	0	5.7		17.9*	N	29					
NEWARK	3	1018.7	1019.9	22.2	10.0	16.2	2.6	28.9	7	3.9	30	0	0	6.7	59	5	- 74	4	2	1	0	0	4.3	SW	16.5*	NNW	29	19	7	5	3.5	
TRENTON U	17	1012.4		22.2	9.4	15.6	1.8	28.3	27+	3.3	30	0	0			1	- 71	1	1	1	0	0	3.5	SW#	16.1	NW	30	18	8	5	3.3	77
NEW MEXICO																																
ALBUQUERQUE	1618	851.6	1016.9	23.9	8.9	16.4	1.7	30.6	2+	4.4	31	0	0	1.7	44	19		11	4	2	0	0	2.8	SE	12.1	SE	28	19	7	5	3.5	84
CLAYTON	1515	848.5		24.4	8.3	16.3	3.4	31.1	1	1.1	31	0	0			5	- 20	3	4	0	T	0						19	5	7	3.3	
RATON	1944	809.5		22.8	3.9	13.2	2.6	27.8	2+	- 2.2	31	0	2			7	- 19	4	5	3	30	25						16	8	7	4.0	
ROSWELL	1103	895.7		28.3	6.1	17.3	2.6	31.7	3	3.3	30+	0	0			4	- 23	3	2	0	0	0	3.0		12.5	NW	31	14	11	6	4.1	86
SILVER CITY	1638	838.8		25.0	8.3	16.5		30.0	1	5.0	20	0	0			26		26	3	1	0	0						16	7	8	3.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
ALBANY	84	1015.4	1019.3	20.6	5.6	13.1	2.6	31.7	7	- 1.1	10+	0	3	5.0	62	5	- 65	3	2	1	0	0	3.0	SSE	15.2	W	30					78
BINGHAMTON	485	960.5	1019.8	18.9	6.7	12.7	3.1	27.8	7	0.0	30+	0	2	5.0	63	7	- 72	5	4	2	T	0	4.1	NNW	15.2	N	29	16	9	6	4.1	
BUFFALO	215	992.7	1020.8	20.0	7.8	13.9	3.5	26.1	18	1.7	30+	0	0	6.7	64	8	- 69	3	3	0	0	0	4.1	S	17.0	SW	7	13	10	8	4.6	77
NEW YORK U	40	1008.6		22.2	11.1	16.6	1.9	28.3	19+	3.3	30	0	0			4	- 76	3	2	1	0	0	3.6	SW#	14.3	NW	30	21	7	3	2.5	86
NEW YORK LA GUARDIA	6	1017.7	1019.4	21.1	11.7	16.3	1.6	27.2	7	5.0	30	0	0	7.2	59	2	- 84	1	2	1	0	0	4.6	SW	15.2	N	30+	17	10	4	3.4	
ROCHESTER	166	1001.1	1020.5	21.7	6.7	14.1	3.1	30.0	7	1.7	29+	0	0	6.1	64	6	- 60	3	3	0	0	0	4.2	SW	15.2	SW	7	17	7	7	3.9	72
SCHENECTADY	66			20.0	6.1	13.0	2.7	30.0	7	1.1	10	0	0			9	- 65	8	2	1	0	0						27	2	2	2.4	
SYRACUSE	127	997.4	1019.5	21.1	6.1	13.5	2.5	30.6	7	0.6	5	0	0	4.4	60	5	- 75	4	4	1	T	0	3.1	SE	14.8	W	3	16	9	6	4.0	78
NORTH CAROLINA																																
ASHEVILLE U	671	942.5		23.3	7.2	15.3	1.1	26.7	7+	- 0.6	31	0	1			T	- 63	T	0	0	0	0	2.5	N#	13.4	NW	29	26	3	2	1.5	92
CAPE HATTERAS R	2	1017.3	1018.0	21.7	13.9	17.7	-0.8	25.6	8+	5.0	17	0	0	13.3	75	155	47	91	11	1	0	0	5.8	NNE	15.6*	NNE	21+	18	4	9	3.8	73
CHARLOTTE	224	992.7	1020.8	25.0	10.0	17.6	0.9	28.9	27	0.0	31	0	1	8.9	61	1	- 75	1	1	1	0	0	3.0	NNE	12.1	NW	29	25	3	3	1.8	90
GREENSBORO	272	989.1	1021.3	23.3	7.8	15.4	0.3	28.3	8	- 1.7	31	0	1	7.2	64	7	- 62	6	3	0	0	0	3.2	NE	11.2	NW	29	22	5	4	2.3	81
RALEIGH	132	1006.3	1020.2	23.9	7.8	15.8	0.0	29.4	8	- 1.1	31	0	1	7.8	65	11	- 58	9	4	0	0	0	3.1	NNE	10.7*	NW	29	20	6	5	2.7	87
WILMINGTON	9	1019.0	1019.1	24.4	11.7	17.9	-0.6	29.4	3	1.7	31	0	0	11.7	72	98	22	92	4	2	0	0	4.4	NNE	15.6	N	20	19	6	6	3.5	75
WINSTON SALEM	295	985.2	1021.2	23.3	9.4	16.3	0.6	28.3	27	0.6	31	0	0	8.3	62	3	- 75	1	4	0	0	0	3.4	NE	10.7*	NNW	29	23	5	3	2.1	
NORTH DAKOTA																																
BISMARCK	502	955.2	1015.9	21.7	3.9	12.8	4.9	35.0	4	- 6.1	28	1	7	3.9	62	30	8	29	3	1	0	0	4.1	SSE	17.9	S	3	19	4	8	3.9	76
FARGO	274	981.2	1015.8	21.7	6.7	14.1	6.0	33.9	5	- 4.4	31	1	5	6.1	64	6	- 22	5	4	2	0	0	4.5	S	13.4	S	29	14	10	7	4.1	73
WILLISTON	579	946.7		21.1	4.4	12.8	4.9	33.9	4	- 8.9	31+	1	4			T	- 19	T	0	0	0	0	3.9	SW#	21.0	NW	24	15	7	9	4.2	75
OHIO																																
AKRON	369	983.0	1021.3	22.2	7.8	15.0	3.7	29.4	7	1.1	30+	0	0	4.4	56	12	- 51	7	2	0	T	0	3.2	WSW	10.3*	WSW	2	14	15	2	3.7	
CINCINNATI OBS	232			26.1	10.0	17.9	3.6	31.7	6	1.7	30	0	0			3	- 54	1	4	1	0	0	1.9	S#	7.6	SW	31					85
CINCINNATI U	169	997.7		26.1	11.1	18.7		31.7	6	3.9	30	0	0			2		2	3	1	0	0										
CLEVELAND	237	992.6	1020.6	21.7	8.9	15.2	4.2	30.0	7	1.7	14	0	0	6.1	60	18	- 43	20	5	2	0	0	3.7	SSE	13.0	SW	2	14	13	4	3.9	71
COLUMBUS	247	991.4	1021.5	25.0	6.1	15.5	2.6	30.0	7+	- 3.9	30	0	2	5.6	58	3	- 51	5	1	1	0	0	2.6	N	11.6	SW	2	20	9	2	2.9	81
COLUMBUS U	221			24.4	10.6	17.4	3.7	29.4	6	0.6	30	0	0			2	- 46	2	1	1	0	0										
DAYTON	304	988.5	1021.2	25.0	8.3	16.7	3.6	30.6	6	- 0.6	30	0	1	7.2	60	4	- 52	1	3	1	0	0	3.2	SSW	11.6	S	2	19	8	4	3.2	84
MANSFIELD	395			22.8	9.4	16.1	4.8	29.4	7	- 2.2	30	0	1			11	- 47	19	3	0	T	0						18	9	4	3.3	
TOLEDO	206	995.3	1020.7	23.9	6.7	15.1	3.9	32.8	7	- 5.0	30	1	3	5.6	60	17	- 44	19	2	1	0	0	2.9	SW	13.0	SW	7	15	11	5	4.2	71
YOUNGSTOWN	359	978.4	1021.2	22.2	6.7	14.3	3.0	28.9	7	- 1.7	30+	0	3	3.9	55	11	- 57	15	3	2	T	0	3.7	SSW	9.4*	NNW	29+	16	13	2	3.3	
OKLAHOMA																																
OKLAHOMA CITY	390	974.4	1017.6	29.4	13.9	21.7	4.8	35.0	4	4.4	29	10	0	9.4	52	52	- 12	49	4	1	0	0	5.0	SSE	17.0	SW	30	19	6	6	3.4	84
TULSA	206	993.7	1018.2	30.6	13.9	22.3	4.7	36.1	9	1.1	29	14	0	10.0	52	5	- 80	4	2	1	0	0	5.0	SSE	13.0	S	31+	18	7	6	3.3	79
OREGON																																
ASTORIA	2	1014.7	1015.4	16.7	8.9	12.7	1.1	21.1	10+	1.7	19	0	0	10.0	85	243	46	61	22	4	0	0	3.7	SSE	17.9*	SSW	24+	1	5	25	8.6	
BURNS U	1265	874.1		18.3	2.2	10.2	1.1	27.8	2+	- 7.2	31+	0	11			8	- 14	3	9	1	T	0						7	12	12	6.3	
EUGENE	110	1003.3		18.9	7.2	13.0	1.2	24.4	1	0.0	19	0	1			61	- 37	28	11	1	0	0	2.5		10.7*	SSW	24	5	5	21	8.0	
MEACHAM	1234			13.9	3.9	8.9	1.0	26.1	2	- 3.9	26	0	8			22	- 50	11	10	0	T	0						7	5	19	7.1	
MEDFORD	396	969.7	1017.5	19.4	6.1	12.9	0.7	32.8	2	- 3.3	31	2	5	7.2	75	36	- 14	16	12	0	0	0	1.9	WNW	11.2*	SE	14	4	11	16	7.2	
PENDLETON	452	963.1	1017.0	19.4	6.7	13.1	1.3	29.4	10	- 1.1	28	0	3	3.9	59	11	- 19	9	5	0	0	0	3.7	SE	12.5*	SW	24	9	10	12	5.9	
PORTLAND	6	1010.6	1016.3	17.2	7.2	12.3	0.0	23.3	2	- 1.1	26	0	1	8.9	82	77	- 14	27	14	1	0	0	3.6	ESE	19.2	SW	24	1	5	25	8.5	27
PORTLAND U	9			18.3	10.0	14.2	0.6	24.4	14+	3.3	26	0	0			85	- 14	39	14		0	0										
ROSEBURG	154	998.1		19.4	7.2	13.1	0.7	27.8	14	- 1.1	26	0	2			52	- 25	25	16	0	0	0	1.6	N#	8.9	S	24	2	8	21	8.0	32
SALEM	59	1009.5	1017.0	17.2	6.7	12.1	-0.2	23.9	1	- 1.7	19	0	1	8.9	83	91	- 8	40	14	1	0	0	3.1	S	13.9*	S	24	3	6	22	7.9	
SEXTON SUMMIT R	1169	884.2		12.8	5.0	8.9	-1.5	26.7	1	0.0	30	0	1			76	- 11	27	16	0	0	0	5.8	S				7	8	16	6.8	
PACIFIC AREA																																
CANTON ISLAND	3	1009.0	1009.5	32.2	26.1	29.2	0.4	33.3	26+	23.3	30	23	0	22.8	71	49	21	15	7	0	0	0	3.9	E	9.4*	E	8	5	9	17	7.2	
ENIWETOK	5	1007.8	1009.8	31.1	25.0	28.0	-0.3	32.8	2	23.3	23+	7	0			305	74	70	26	1	0	0	4.1									
TAGUAC GUAM R	110			29.4	22.8	26.1	-0.2	30.6	30+	19.4	31+	0	0			459	126	125	23	2	0	0	2.6	E#	12.1	SW	13					55
JOHNSTON	2	1011.8	1012.7	28.3	26.1	27.2	0.0	28.9	27+	25.0	30+	0	0	23.3	79	28	- 55	8	14	0	0	0	6.5	E	13.0	E	16	1	8	22	8.1	75
KOROR R	29	1006.8	1009.3	30.6	25.0	27.7	0.4	32.2	29+	22.2	20	2	0	25.0	87	260	- 73	54	24	6	0	0	4.1	W	8.9	SW	17+	0	1	30	9.9	58
KWAJALEIN	2	1009.3		30.6	24.4	27.7	-0.1	32.2	28+	22.8	10+	3	0			504	228	87	24	2	0	0	3.7		15.6	E	3	1	4	27	8.9	
PONAPE R	37	1004.5	1008.9	30.0	23.3	26.7	0.2	32.2	3	22.2	27+	1	0	23.9	88	525	120	93	28	4	0	0	2.1	SW	7.6	NW	23+	0	0	31	9.8	37
TRUK MOEN ISLAND	2	1008.0	1008.2	30.0	24.4	27.2	0.2	31.7	2	22.8	18+	0	0	24.4	84	422	80	118	25	6	0	0	4.0	SW	13.0	NW	28+	0	1	30	9.7	30
WAKE	3	1009.8	1009.8	30.6	25.0	27.6	0.1	31.7	15+	22.2	14	0	0	23.3	76	141	7	38	18	0	0	0	4.7	ENE	13.9*	S	25	4	16	11	6.7	
YAP R	16			30.0	23.9	27.1	-0.4	32.2	26	22.8	12	1	0			423	88	111	24	1	0	0										

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
PENNSYLVANIA	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							°°
ALLENTOWN	115	1006.2	1020.5	22.2	6.1	14.1	2.0	28.3	27+	1.1	14	0	0	6.7	66	4	- 72	2	3	1	0	0	3.4	SW	17.9*	WNW	3	17	10	4	3.2	
ERIE	223	994.2	1020.6	20.6	8.9	14.8	3.4	31.1	7	2.8	30+	0	0	6.1	60	29	- 55	12	4	3	0	0	5.9	S	13.9*	SSW	2	16	13	2	3.5	
HARRISBURG	102	1007.1	1021.0	22.2	6.1	13.9	0.8	30.6	7	0.0	14	0	1	5.0	61	1	- 74	1	3	0	0	0	3.0	W	13.4	NW	30	20	5	6	3.3	82
PHILADELPHIA	2	1015.7	1020.2	21.1	6.7	13.9	0.8	27.2	7	1.1	14+	0	0	6.7	66	2	- 68	2	1	1	0	0	3.6	WSW	14.8	N	12	17	7	7	3.9	73
PITTSBURGH	347	990.6	1021.2	23.3	6.7	14.9	3.2	28.9	7	- 1.1	30	0	2	3.3	50	4	- 60	3	4	3	T	0	2.8	N	10.3*	NNW	29+	16	9	6	3.7	86
PITTSBURGH U	228			23.9	8.9	16.4	3.1	29.4	7	2.2	30	0	0			4	- 59	2	4	0	0	0										84
READING U	81	1008.2		22.8	8.9	15.9	1.9	29.4	7	4.4	30+	0	0			4	- 68	1	2	1	0	0	3.4	N#	21.0	NW	30	19	8	4	3.0	78
SCRANTON	287	986.8	1020.5	21.1	6.7	13.7	3.2	28.3	7	1.7	14+	0	0	5.6	63	1	- 88	1	2	1	T	0	2.9	NNW	11.6	NW	30	18	9	4	3.5	84
WILLIAMSPORT	161	1002.2	1021.3	22.2	5.0	13.7	2.0	30.0	7	0.0	14	0	1	4.4	62	5	- 80	3	3	1	T	0	3.2	NW	11.6*	W	31	18	8	5	3.5	
RHODE ISLAND																																
BLOCK ISLAND	34	995.3		17.2	10.0	13.4	0.6	22.8	16	2.2	30	0	0			38	- 39	36	5	2	0	0						17	5	9	4.0	
PROVIDENCE	17	1011.9	1018.0	20.6	7.2	13.8	2.0	30.0	7	1.1	30+	0	0	6.1	65	41	- 37	41	4	2	T	0	4.6	WSW	14.8*	N	29	18	7	6	3.5	77
SOUTH CAROLINA																																
CHARLESTON	12	1017.0	1019.0	27.2	12.2	19.6	0.6	30.0	28+	2.8	30	0	0	12.2	68	58	- 14	56	3	1	0	0	4.1	NNE	17.9Y	N	25	25	3	3	2.5	82
CHARLESTON U	3			24.4	15.6	20.1	0.0	28.9	28	8.9	31+	0	0			84	14	84	3	0	0	0	5.5		18.8	NE	25					
COLUMBIA	66	1007.5	1020.5	26.7	9.4	17.9	-0.2	31.7	12	0.6	31	0	0	8.9	64	T	- 60	T	0	1	0	0	2.9	NNE	9.4*	NNW	29+	25	2	4	1.8	83
FLORENCE	45	1013.9	1019.6	25.0	10.6	17.9	-0.4	30.0	12	1.1	31	0	0	8.9	63	11	- 44	6	4	1	0	0	3.8	NE	10.3*	NE	29	25	2	4	2.0	
GNVLE SPARTANBURG	292	983.9	1020.9	25.0	10.6	17.8	0.6	28.9	27+	1.7	31	0	0	8.9	60	6	- 79	6	1	2	0	0	3.0	NE	13.9	NW	29	26	0	5	1.7	85
SOUTH DAKOTA																																
HURON	391	968.9	1016.1	23.3	7.2	15.2	5.3	38.9	5	- 5.0	31	2	5	7.2	66	40	11	17	9	5	0	0	4.8	SSE	15.2	S	29	13	8	10	5.0	66
RAPID CITY	965	902.8	1016.5	22.8	7.8	15.2	5.2	34.4	4	- 2.2	28	3	3	2.2	48	20	- 1	11	3	2	T	0	4.6	NNW	15.2	N	23	17	8	6	3.4	76
SIOUX FALLS	433	965.2	1017.0	22.8	6.7	14.5	4.3	34.4	5	- 6.7	29	2	3	7.8	69	42	10	18	4	3	0	0	3.8	SSE	10.7*	NW	28	14	6	11	4.6	
TENNESSEE																																
BRISTOL	459	966.7	1021.2	26.1	7.8	16.9	2.7	28.9	24+	- 0.6	31	0	1	5.6	54	2	- 53	2	2	1	0	0	1.2	NE	8.9*	NW	29	23	6	2	1.9	
CHATTANOOGA	204	993.5	1021.4	27.2	8.9	18.2	2.1	31.7	21	0.6	30	0	0	9.4	66	6	- 71	6	1	1	0	0	2.1	S	11.6	NW	28	20	10	1	2.0	93
KNOXVILLE	290	985.0	1021.7	25.0	8.9	16.7	0.6	28.3	3	- 0.6	30	0	1	7.8	61	T	- 66	T	0	0	0	0	2.1	NE	13.0	N	28	26	4	1	1.5	94
MEMPHIS	80	1005.5	1020.2	28.9	11.7	20.3	2.8	33.3	13	1.1	30	6	0	10.6	57	T	- 69	T	0	0	0	0	2.5	SE	10.7	SW	31	21	8	2	2.4	97
MEMPHIS U	83			28.3	16.1	22.1	3.9	32.8	13	6.7	29	1	0			1	- 72	0	1		0	0										
NASHVILLE	176	1000.7	1020.7	27.2	10.0	18.6	2.2	30.6	22+	0.6	30	0	0	10.0	63	T	- 59	T	0	0	0	0	2.3	S	11.2	NW	28+	21	8	2	2.4	89
OAK RIDGE	276	988.1		25.6	7.8	16.7	1.2	29.4	21	- 1.1	30	0	1			T	- 68	T	0	0	0	0	1.5		12.1Y		21	26	3	2	1.5	
TEXAS																																
ABILENE	536	956.7	1017.3	30.6	15.0	22.8	3.8	33.9	9+	6.7	29	11	0	10.0	50	10	- 62	9	4	3	0	0	3.5	SSE	15.6	SW	23	19	4	8	3.6	77
AMARILLO	1099	891.6	1016.3	27.2	10.6	19.0	3.7	32.8	2	4.4	31	2	0	5.0	47	39	- 6	34	3	1	0	0	6.3	SSW	13.0	SW	29	18	10	3	3.3	89
AUSTIN	182	996.8	1018.7	30.6	17.2	23.9	2.4	35.0	8	12.2	1	12	0	13.3	57	20	- 52	15	3	2	0	0	2.7	S	10.3	NW	24	16	8	7	3.9	71
BROWNSVILLE	5	1015.3	1017.7	29.4	20.0	24.7	0.3	32.2	18	16.7	30+	1	0	18.9	75	26	- 64	10	7	2	0	0	4.5	SE	13.4	S	24	8	15	8	5.6	52
CORPUS CHRISTI	13	1017.4	1018.7	28.9	19.4	24.2	0.6	31.7	11+	15.0	2	0	0	18.3	73	66	- 4	26	9	5	0	0	4.0	ESE	12.1	E	25	13	7	11	5.2	62
DALLAS	147	999.8	1018.4	30.0	15.6	22.9	3.0	34.4	8+	7.2	29	11	0	10.6	51	T	- 68	T	1	1	0	0	4.2	SSE	12.5	N	31	19	5	7	3.1	79
DEL RIO	313			30.0	16.7	23.4		34.4	8	11.7	1	8	0			21		11	3	2	0	0	3.8					14	7	10	4.5	
EL PASO	1194	888.7	1015.6	26.7	11.7	19.1	0.6	31.1	2	7.8	3	0	0	4.4	42	14	- 8	8	3	1	0	0	2.4	SSE	17.4	N	31	19	5	7	3.3	89
FORT WORTH	166	997.6	1018.3	31.1	15.0	23.1	3.1	35.6	7+	8.3	29	13	0	11.1	51	6	- 60	5	3	2	0	0	3.4	SSE	11.2*	SSW	30	20	4	7	3.2	
GALVESTON U	2			27.2	22.2	24.7	1.6	30.6	10	18.3	29+	0	0			1	- 71	1	1	0	0	0	3.8	SE	11.2	NE	29					79
HOUSTON U	12			30.0	19.4	24.8	2.4	34.4	8	13.3	30+	6	0			T	- 91	T	1		0	0										
HOUSTON	15	1016.5	1019.1	30.6	17.2	23.9	1.4	33.3	11+	10.0	30	6	0	16.7	73	8	- 88	4	3	2	0	0	3.3	ESE	10.3*	SSE	23	12	7	12	4.9	74
LAREDO	152	1002.4	1017.7	31.7	19.4	25.4	1.3	35.0	9+	14.4	1	15	0	16.1	62	22	- 19	16	5	4	0	0	3.0	ESE	10.3*	E	7	12	12	7	4.8	
LUBBOCK	988	906.4	1017.3	27.8	10.0	18.8	2.6	32.8	2	3.9	31	1	0	8.3	55	15	- 36	8	3	1	0	0	5.0	SSE	13.9*	NNW	31	16	12	3	3.5	
MIDLAND	870	918.1	1015.8	30.0	13.3	21.7	2.9	32.8	9	8.3	29+	3	0	7.2	45	4	- 38	4	1	1	0	0	3.8	S	12.5*	NNE	31	15	8	8	4.2	
PORT ARTHUR	5	1017.6	1019.2	30.6	16.7	23.4	2.4	35.0	12	8.9	30	10	0	17.2	75	0	- 73	0	0	1	0	0	2.9	NE	11.6	SW	31	12	16	3	4.2	76
SAN ANGELO	580	950.4	1017.1	30.0	13.3	21.7	1.2	33.3	9	5.6	29	8	0	10.6	54	8	- 38	5	4	2	0	0	2.9	SSE	12.5*	NNE	31	17	6	8	3.7	
SAN ANTONIO	241	993.1	1018.6	30.0	16.7	23.4	1.9	33.9	8	11.1	1	8	0	14.4	62	70	6	43	5	2	0	0	3.1	SE	11.6	W	24	14	9	8	4.2	72
VICTORIA	32	1012.8		30.6	17.8	24.2	1.6	33.3	12+	12.8	30	9	0			32	- 57	20	3	2	0	0	3.2		13.9Y		31+	11	12	8	4.6	
WACO	152	996.3	1018.4	31.1	16.7	23.8	3.1	35.0	8+	10.6	29	13	0	12.2	53	28	- 37	23	4	2	0	0	4.7	SSE	13.0*	SSE	24	18	7	6	3.4	
WICHITA FALLS	303	980.7	1017.3	32.2	14.4	23.2	4.3	36.7	9+	5.6	29	16	0	10.0	50	9	- 64	7	4	3	0	0	3.9	S	12.5*	N	31	18	7	6	3.4	
UTAH																																
MILFORD	1533	846.6		23.3	3.9	13.5	3.1	32.2	3	- 1.1	14	1	5			10	- 9	5	5	2	0	0						17	7	7	4.0	
SALT LAKE CITY	1286	870.1	1018.1	21.7	6.7	14.3	2.8	31.7	3	- 1.1	28	0	3	4.4	58	27	- 3	9	6	1	T	0	4.4	SSE	13.4	SE	5	9	13	9	5.2	73
WENDOVER	1291	872.5		20.6	8.9	14.6	2.8	30.0	4	1.7	31	0	0			14	3	12	4	0	0	0						14	8	9	3.9	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

OCTOBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
VERMONT	M.	Mb.	Mb.	°C.	°C.	C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
BURLINGTON	101	1003.4	1018.1	18.3	3.3	10.9	1.7	28.3	7	- 4.4	9	0	11	4.4	66	13	- 63	8	3	0	T	0	3.9	S	15.2	NW	30	9	11	11	5.4	74
VIRGINIA																																
LYNCHBURG	289	995.6		23.9	8.9	16.2	1.6	29.4	7	- 0.6	31	0	1			20	- 47	13	4	0	0	0	2.5		9.8	NE	21	23	2	6	2.5	80
NORFOLK	8	1019.1	1020.4	20.6	10.6	15.6	-1.1	27.8	8	1.1	31	0	0	10.6	75	31	- 43	11	7	2	0	0	5.0	NNE	15.2	NE	22	19	2	10	3.8	86
RICHMOND	49	1014.4	1020.7	23.3	6.1	14.8	-0.3	28.9	8	- 2.8	31	0	2	7.8	71	8	- 69	4	2	2	0	0	3.4	NNE	9.4	N	28	19	5	7	3.0	73
ROANOKE	358	979.3	1021.6	23.9	7.8	15.8	1.3	30.6	7	2.2	14	0	0	6.1	58	7	- 75	6	2	0	0	0	3.1	NE	15.6*	NNW	29	25	1	5	2.2	
WASHINGTON																																
OLYMPIA	58	1008.2	1015.5	16.1	6.7	11.3	0.6	22.2	15	- 0.6	26+	0	4	8.9	88	152	18	36	17	3	0	0	2.9	S	19.7*	S	24	1	5	25	8.7	
SEATTLE TACOMA	122	1001.6	1015.9	16.1	8.9	12.5	1.4	24.4	14	2.8	19	0	0	8.9	82	129	26	36	19	0	0	0	4.0	S	15.6*	S	21	2	6	23	8.4	
SEATTLE U	4			16.7	10.6	13.4	0.9	25.0	14	4.4	19	0	0			106	22	21	20	0	0	0			26.8	SW	21					29
SPOKANE	718	947.9	1016.9	16.7	4.4	10.6	1.4	29.4	2	- 3.3	19	0	6	3.9	68	28	- 12	20	6	0	0	0	3.8	SSW	17.0	SW	24	7	7	17	6.7	55
STAMPEDE PASS R	1206	879.4		9.4	2.8	6.1	0.3	20.6	2+	- 3.3	27	0	11			153	- 71	42	19	0	564	203						2	6	23	8.6	
TATOOSH ISLAND R	31	1010.8	1013.8	14.4	10.0	12.3	1.3	18.9	14+	6.1	25	0	0	8.9	82	346	137	91	25	5	0	0	8.2	ENE	31.3	S	24	2	5	24	8.3	37
WALLA WALLA U	289			20.0	8.9	14.4	1.6	29.4	10	1.1	27+	0	0			15	- 24	0	4		0	0										
YAKIMA	323	977.3	1016.6	18.3	3.3	10.9	0.7	26.7	2	- 6.1	29	0	8	3.3	63	1	- 14	1	2	0	0	0	3.3	W	13.9*	SSW	21	7	6	18	6.7	
WEST INDIES																																
SAN JUAN P.R.	2	1010.2	1012.[illegible]	31.7	23.9	27.5	0.8	33.9	10	21.1	31	13	0	22.8	79	41	-107	16	12	4	0	0	2.9	SE	11.2	SW	9	4	18	9	6.2	61
SWAN ISLAND	9	1009.8		30.6	25.0	27.7	0.1	31.1	17+	22.8	26	0	0			135	-112	32	19	5	0	0						1	10	20	8.2	
WEST VIRGINIA																																
BECKLEY	763	933.7	1022.1	21.7	6.1	13.7		25.0	19+	- 1.7	30	0	2	5.0	60	4		3	2	0	T	0	3.3	SSE	10.7*	NNW	29+	23	5	3	2.5	
CHARLESTON	286	985.8	1021.4	24.4	5.6	15.1	1.1	28.9	11	- 2.2	31	0	2	6.7	64	2	- 63	2	3	0	T	0	1.7	SW	7.6*	NW	28	18	11	2	3.2	
ELKINS	600	952.6	1022.6	22.2	1.1	11.6		26.7	24+	- 5.6	31	0	12	5.0	74	8		5	4	0	T	0	2.0	NNW	10.3*	WNW	29	15	9	7	4.5	
HUNTINGTON	252	991.3	1021.6	25.0	6.7	15.9		28.9	24+	- 2.8	30	0	2	7.2	61	T	- 52	T	0	0	0	0	1.7	NNW	7.6*	WSW	2	19	8	4	3.3	
PARKERSBURG U	187			24.4	7.2	15.8	1.9	28.9	7+	0.0	31	0	1			6	- 46	4	5	1	T	0	2.1		11.6	NW	29					83
WISCONSIN																																
GREEN BAY	208	992.9	1018.7	20.0	7.2	13.6	4.5	31.1	6	0.6	30+	0	0	8.3	76	19	- 30	9	7	4	0	0	3.4	SW	12.1	NW	2	14	5	12	5.1	58
LA CROSSE	199	993.5	1018.4	21.7	10.6	16.2	5.6	33.9	6	1.7	29	1	0	8.9	69	37	- 19	17	6	4	0	0	3.7	S	17.0*	NW	2	14	7	10	4.9	
MADISON	262	983.6	1019.1	22.2	6.7	14.5	4.3	32.2	6	- 3.3	29	1	4	7.2	66	16	- 40	8	9	2	0	0	3.4	S	13.4	N	28	10	8	13	5.7	52
MILWAUKEE	205	994.4	1019.6	21.1	8.9	14.8	4.8	31.7	6	- 1.7	30	0	1	9.4	72	9	- 45	4	6	2	0	0	4.2	SSW	13.4	N	11	12	10	9	5.0	64
WYOMING																																
CASPER	1621	839.7	1016.9	20.6	5.0	12.6	3.5	28.9	4	- 9.4	28	0	5	- 2.8	42	8	- 13	8	4	2	36	25	4.7	WSW	15.6*	WSW	25	15	8	8	4.2	
CHEYENNE	1867	816.5	1017.7	20.0	5.0	12.4	3.8	27.8	4+	- 6.1	31	0	4	0.0	50	27	6	24	4	1	T	T	5.2	WNW	13.9	N	31	17	4	10	4.1	77
LANDER	1696	837.5	1016.8	20.0	4.4	12.0	3.6	29.4	4+	- 6.1	28	0	7	0.0	49	9	- 22	8	2	0	61	25	2.6	WSW	16.5	S	12	15	9	7	4.0	83
SHERIDAN	1202	886.0	1017.1	21.1	3.9	12.6	3.8	32.8	4	- 7.8	28	1	5	1.1	51	13	- 15	10	3	1	33	25	2.7	WNW	15.6	NW	23	14	7	10	4.5	69

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

Data in this table are obtained by conversion from data in the English Units table.

HEATING DEGREE DAYS

(Base 65°F.)

OCTOBER 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	35	39	142
Huntsville	35	44	139
Mobile	17	17	31
Montgomery	34	34	68
ALASKA			
Anchorage	866	1683	1982
Annette	493	1010	1389
Barrow	1653	4449	4178
Barter Island	1548	4079	3979
Bethel	1231	2525	2367
Cold Bay	823	2186	2196
Cordova	721	1813	2060
Fairbanks	1189	2175	2348
Juneau	625	1532	1847
King Salmon	1022	2075	2056
Kotzebue	1452	3076	2799
McGrath	1317	2489	2363
Nome	1213	2936	2764
St. Paul Is.	891	2688	2612
Shemya	695	2321	2337
Yakutat	670	1677	1875
ARIZONA			
Flagstaff	467	684	840
Phoenix (U)	0	0	
Phoenix	0	0	16
Prescott	148	151	272
Tucson	2	2	25
Winslow	103	103	233
Yuma	0	0	0
ARKANSAS			
Ft. Smith	22	32	139
Little Rock	26	30	136
Texarkana	12	14	78
CALIFORNIA			
Bakersfield	41	41	37
Bishop	162	184	308
Blue Canyon	394	648	520
Burbank	15	16	49
Eureka (U)	241	877	1114
Fresno	56	58	84
Long Beach	3	3	56
Los Angeles (U)	1	1	37
Los Angeles	1	1	170
Mt. Shasta (R)	433	656	588
Oakland	93	216	275
Point Arguello (R)	165	608	755
Red Bluff	90	90	53
Sacramento (U)	56	56	62
Sacramento	65	65	56
Sandberg (R)	241	314	232
San Diego	6	6	73
San Francisco (U)	67	432	586
San Francisco	88	252	362
Santa Catalina	55	79	
Santa Maria	80	319	434
Stockton	60	60	
COLORADO			
Alamosa	493	766	1082
Colorado Springs	211	249	647
Denver	229	271	517
Grand Junction	145	151	343
Pueblo	142	147	380
CONNECTICUT			
Bridgeport	216	364	373
Hartford	246	447	523
Middletown	300	589	
New Haven	257	408	446
DELAWARE			
Wilmington	199	306	321
DIST. OF COLUMBIA			
Washington (U)	90	153	
Washington	129	199	250
FLORIDA			
Apalachicola (U)	18	18	16
Daytona Beach	15	15	0
Fort Myers	0	0	0
Jacksonville	22	22	12
Key West	0	0	0
Lakeland (U)	4	4	0
Miami	0	0	0
Miami Beach	0	0	0
Orlando	3	3	0
Pensacola	* 26	26	19
Tallahassee	44	44	28
Tampa	15	15	0
West Palm Beach	0	0	0
GEORGIA			
Athens	65	87	127
Atlanta	55	74	142
Augusta	75	86	78
Columbus	40	43	87
Macon	43	48	71
Rome	104	122	185
Savannah	42	43	47
Thomasville (U)	27	29	25
IDAHO			
Boise	252	277	504
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	485	681	943
Idaho Falls 42NW(R)	503	689	986
Lewiston	275	323	526
Pocatello	316	377	673
ILLINOIS			
Cairo (U)	35	46	200
Chicago (Midway)	98	156	391
Chicago (O'Hare)	176	302	
Moline	108	207	458
Peoria	93	181	419
Rockford	127	241	529
Springfield	80	145	363
INDIANA			
Evansville	84	128	299
Ft. Wayne	140	234	483
Indianapolis	117	208	406
South Bend	144	270	489
IOWA			
Burlington	79	152	415
Des Moines	95	167	449
Dubuque	145	295	649
Sioux City	154	215	529
Waterloo	158	291	572
KANSAS			
Concordia	89	108	321
Dodge City	73	82	284
Goodland	173	218	468
Topeka	64	82	327
Wichita	50	59	262
KENTUCKY			
Lexington	84	140	293
Louisville	86	158	320
LOUISIANA			
Alexandria	31	34	
Baton Rouge	12	12	37
Lake Charles	9	9	19
New Orleans	2	2	
(Audubon Park)			
New Orleans	9	9	25
Shreveport	12	12	59
MAINE			
Caribou	535	1183	1211
Greenville (U)	510	1198	
Portland	395	819	768
MARYLAND			
Baltimore (U)	90	158	216
Baltimore	197	294	312
Frederick	216	349	373
MASSACHUSETTS			
Blue Hill Obs. (R)	262	515	511
Boston	198	362	385
Nantucket	279	463	496
Pittsfield	347	821	827
Worcester	277	607	637
MICHIGAN			
Alpena	335	860	910
Detroit (City AP)	131	242	453
Detroit	221	424	495
(M. Wayne Co.)			
Detroit (Willow Run)	195	369	447
Escanaba (U)	295	697	928
Flint	227	499	612
Grand Rapids	203	382	606
Lansing	231	466	597
Marquette (U)	222	627	907
Muskegon	216	425	652
S. Ste. Marie	342	879	1132
MINNESOTA			
Duluth	280	653	1127
Internat. Falls	350	714	1247
Minneapolis	216	378	757
Rochester	226	434	735
St. Cloud	263	440	849
MISSISSIPPI			
Jackson	27	30	65
Meridian	38	43	81
Vicksburg (U)	18	23	53
MISSOURI			
Columbia	51	88	305
Kansas City	35	46	275
St. Joseph	58	83	351
St. Louis (RFC)	52	76	238
St. Louis	74	116	293
Springfield	41	67	268
MONTANA			
Billings	333	413	694
Butte	544	966	
Glasgow	341	430	956
Great Falls	338	487	830
Havre	383	528	952
Helena	427	622	985
Kalispell	591	956	1170
Miles City	294	333	688
Missoula	535	845	1062
NEBRASKA			
Grand Island	193	282	444
Lincoln (U)	90	131	382
Norfolk	168	231	517
North Platte	219	285	569
Omaha	96	136	422
Omaha N. Omaha AP	98	163	511
Scottsbluff	236	282	597
Valentine	214	286	679
NEVADA			
Elko	422	618	829
Ely	435	642	897
Las Vegas	17	17	74
Reno	389	571	743
Tonopah	294	368	
Winnemucca	359	481	780
NEW HAMPSHIRE			
Concord	342	686	787
Mt. Washington	924	2840	
Obs. (R)			
NEW JERSEY			
Atlantic City	170	273	290
Atlantic City (U)	189	309	
Newark	139	247	315
Trenton (U)	165	300	321
NEW MEXICO			
Albuquerque	124	124	226
Clayton	127	143	382
Raton	275	336	594
Roswell	59	63	235
Silver City	109	109	
NEW YORK			
Albany	296	594	597
Binghamton	315	768	744
Buffalo	241	573	637
New York (U)	134	259	263
New York	136	219	250
(LaGuardia)			
Rochester	247	576	581
Schenectady	293	567	
Syracuse	276	573	581
NORTH CAROLINA			
Asheville (U)	164	219	293
Cape Hatteras (R)	77	85	78
Charlotte	81	105	148
Greensboro	163	229	225
Raleigh	149	206	185
Wilmington	67	84	74
Winston-Salem	126	186	192
NORTH DAKOTA			
Bismarck	311	479	855
Devils Lake (U)	318	524	1008
Fargo	262	408	858
Grand Forks FAA	248	537	
Pembina	308	514	
Williston	314	431	
OHIO			
Akron	189	375	521
Cincinnati (U)	55	83	
Cincinnati	119	201	333
Cincinnati Obs.	76	120	302
Cleveland	191	405	572
Columbus	174	287	400
Columbus (U)	95	159	
Dayton	120	223	394
Mansfield	151	338	542
Sandusky (U)	167	267	385
Toledo	199	361	539
Youngstown	231	512	530
OKLAHOMA			
Oklahoma City	23	30	189
Tulsa	20	25	155
OREGON			
Astoria	307	684	889
Burns (U)	449	673	774
Eugene	289	429	563
Meacham	518	996	1076
Medford	306	339	413
Pendleton	308	382	477
Portland (U)	229	289	370
Portland	329	466	502
Roseburg	291	385	472
Salem	340	520	505
Sexton Summit (R)	521	1031	794
PENNSYLVANIA			
Allentown	234	403	443
Erie	221	442	518
Harrisburg	242	399	361
Philadelphia (U)	91	179	
Philadelphia	242	367	357
Pittsburgh (U)	135	232	351
Pittsburgh	196	378	489
Reading (U)	150	267	311
Scranton	253	459	615
Williamsport	250	456	495
RHODE ISLAND			
Block Island	266	444	401
Providence	259	446	484
SOUTH CAROLINA			
Charleston (U)	21	26	34
Charleston	33	35	59
Columbia	70	84	84
Florence	69	92	78
Greenville-	75	95	
Spartanburg			
SOUTH DAKOTA			
Huron	205	279	654
Pierre	210	277	
Rapid City	205	272	680
Sioux Falls	222	338	674
TENNESSEE			
Bristol	88	121	308
Chattanooga	51	61	188
Knoxville	101	119	201
Memphis (U)	22	30	114
Memphis	33	43	142
Nashville	48	76	188
Oak Ridge	102	127	231
TEXAS			
Abilene	6	8	99
Amarillo	42	53	250
Austin	0	0	31
Brownsville	0	0	0
Corpus Christi	0	0	0
Dallas	7	9	62
Del Rio (U)	0	0	
El Paso	17	17	58
Fort Worth	4	4	65
Galveston (U)	0	0	0
Houston (U)	0	0	0
Houston	0	0	0
Laredo	0	0	0
Lubbock	27	38	192
Midland	3	4	87
Port Arthur	4	4	25
San Angelo	4	7	65
San Antonio	0	0	31
Victoria	0	0	6
Waco	2	2	43
Wichita Falls	8	9	109
UTAH			
Milford	265	298	542
Salt Lake City	243	262	463
Wendover	241	262	420
VERMONT			
Burlington	411	902	738
VIRGINIA			
Lynchburg	140	200	274
Norfolk	156	200	136
Richmond	197	268	238
Roanoke	150	215	280
WASHINGTON			
Olympia	383	617	759
Seattle (U)	274	391	555
Seattle	268	351	605
Seattle-Tacoma	320	506	747
Spokane	426	566	750
Stampede Pass (R)	677	1634	1658
Tatoosh Island (R)	327	1020	1286
Walla Walla	246	283	
Walla Walla (U)	231	267	397
Yakima	406	530	606
WEST VIRGINIA			
Beckley	249	484	
Charleston	177	274	320
Elkins	367	648	
Huntington	144	231	262
Parkersburg (U)	151	234	324
WISCONSIN			
Green Bay	266	541	788
La Crosse	151	295	630
Madison	228	451	653
Milwaukee	217	410	614
WYOMING			
Casper	324	391	845
Cheyenne	323	412	890
Lander	351	441	906
Sheridan	328	395	885

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

* Moved to Airport 10/11/63

STORM SUMMARY

OCTOBER 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE				† DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama *																													
Alaska										0	1	9	0																
Arizona										0	0	4	0													0	0	4	0
Arkansas *																													
California						0	0	1	2	0	0	2	2	0	0	3	0									8	?	5	6
Colorado	1	1	0	0	0																								
Connecticut *																													
Delaware *																													
Florida *																													
Georgia																										0	0	4	0
Hawaii *																													
Idaho												4			1														
Illinois *																													
Indiana *																													
Iowa						0	0	5	5					1	0	4	0												
Kansas	2	1																											
Kentucky																4	3												
Louisiana																										0	0	0	?
Maine										0	0	5	0	0	0	4	0												
Maryland						0	0	3	?	0	0	3	0																
Massachusetts	1	1	0	0	3					0	0	5	0	0	0	4	0												
Michigan	1	1	0	0	4					0	0	5	0																
Minnesota	2	1	0	0	4																								
Mississippi																										0	0	0	?
Missouri														0	0	4	0												
Montana *																													
Nebraska *																													
Nevada																		0	0	4	0								
New Hampshire										0	0	4	0	0	0	4	0												
New Jersey *																													
New Mexico *																													
New York *																													
North Carolina						0	0	3	4	0	0	5	5																
North Dakota N																													
Ohio *																													
Oklahoma	1	1	0	0	4	0	0	°4	C					0	0	4	0												
Oregon *																													
Pacific Area *																													
Pennsylvania *																													
Puerto Rico *																													
Rhode Island *																													
South Carolina						0	0	3	0																				
South Dakota														1	0	0	0												
Tennessee *																													
Texas	4	3	0	0	4																								
Utah *																													
Vermont										0	0	3	0	0	0	3	0												
U.S. Virgin Is. *																													
Virginia *																													
Washington										0	0	5	5																
West Virginia *																													
Wisconsin *																													
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
° Includes crop damage.
C Crop damage.
N No report received by printing deadline.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

OCTOBER 1963

Drought conditions prevailed throughout most of the continental United States during October. Numerous stations throughout the Country reported no measurable precipitation. Many small streams were dry in portions of their channel. Record low stages occurred on many rivers throughout the land.

The only flooding reported during October (minor), was on the Choctawatchee River in Florida and this was due to precipitation during the latter part of September.

ST. LAWRENCE DRAINAGE

Lake Erie Drainage.--Precipitation was sparse throughout the Lake Erie Drainage. This was the second lowest October total of precipitation of record at Ft. Wayne, Ind., and the third lowest for all months of record. The total precipitation for the month was 0.48 inch compared to the previous lowest total of 0.34 inch in October 1924.

ATLANTIC SLOPE DRAINAGE

Precipitation averaged around 70 percent of normal during October in Maine. Precipitation was sparse, with most of it occurring on the 4th and on the last few days of the month when as much as 1 to 2.5 inches occurred. Much of the precipitation in the northern regions was in the form of snow. The dry ground in other areas absorbed most of the precipitation and kept the streams low.

Drought conditions prevailed in Vermont, with no measurable rain during the last 20 days of the month.

The Lehigh and Lackawaxen Rivers in Pennsylvania remained at very low (not record) stages during the month. Some small streams were dry in parts of the channel. At Allentown, Pa., precipitation totaled 0.15 inch, and the month was the second driest October on record dating back to 1912. The average precipitation in the Lehigh Basin during October was 0.14 inch and in the Lackawaxen, 0.20 inch.

Record low stages occurred on the Susquehanna River at Wilkes-Barre, Harrisburg, and Sunbury, Pa., on the 17th, 24th, and 30th. The river levels were below normal seasonal stages due to a moisture deficiency existing throughout the period.

Reservoirs and streams were at very low levels in New Jersey by the end of the month. It was the driest month of record at many stations in the State.

There was no precipitation of any consequence over the Potomac and Rappahannock Basins during October. The Potomac River above Chain Bridge near Washington, D. C., recorded an average flow at 890 cubic feet per second. The U. S. Geological Survey reported this as the lowest average October flow since 1941, and the third lowest October flow on record. Only a trace of precipitation was recorded at the Washington National Airport during October. This was the driest month recorded since the beginning of records in 1871. The next lowest amount recorded at Washington National Airport was 0.14 inch in September 1884.

In eastern North Carolina, it was the driest month since 1954. The total rainfall during October for the month averaged about 25 percent, or less, of normal.

There were several stations in South Carolina that did not receive any rain during the entire month. This prolonged dry spell was alleviated in the immediate coastal counties by Hurricane Ginny on the 25th-26th. Generally from 2 to 5 inches of rain occurred in one 24-hour period in the coastal communities during the passage of the hurricane. No flooding due to high tides resulted along the coast. The lowest stage (1.47 ft.) was recorded on the Pee Dee River at Peedee, S. C., since October 1954.

This was one of the driest, if not the driest October on record in Georgia. The majority of the reporting stations did not report any rainfall during the month. It is believed that this drought of 33 days duration over such an extensive area is unsurpassed.

EAST GULF OF MEXICO DRAINAGE

The 33-day drought (rainless days) in Atlanta, Ga., approached the record long drought of September 13 to October 21, 1884 (39 days). The total rainfall for Atlanta, Ga., in October 1963 was only a trace, which established a new record low monthly precipitation. The previous record low was 0.02 inch of precipitation in October 1891 and August 1925.

The minor flooding on the Choctawatchee River at Caryville, Fla., on October 2 was due to excessively heavy rains on the mornings of September 27, 28, and 29. These rains came after a prolonged dry spell and the antecedent precipitation index was exceptionally low.

Drought conditions prevailed in Alabama throughout the entire month of October.

In Mississippi the Pearl River reached a low of 4.87 ft., on October 31. This is the lowest stage reported at this point since the recorded low of 5.36 ft., September 15, 1954. The Pascagoula River at Merrill, Miss., exceeded the low reported last month (1.92 ft., on October 25).

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Rivers in the Upper Mississippi Basin remained low throughout the month. Lack of precipitation was most severe over the eastern third of Minnesota and Wisconsin. Streams this October ranged from 1 to 1.5 feet lower than October 1962, and 0.5 to 1.0 foot below their long-term mean October stages.

Missouri Basin.--The Missouri River which is regulated from Yankton, S. Dak., upstream maintained uniform flow. Tributaries to the Missouri in South Dakota were generally low, but did not cease to flow.

The dry weather which started in Missouri in September continued through most of October and by the end of the month the drought which extended throughout the State was one of the most critical of record. All rivers and tributaries throughout the area continued at unusually low stages and in many places barge movements were restricted due to low water.

Ohio Basin.--All tributary streams in the upper Ohio Basin were low, with near record low stages being reached by the end of the month. Stages on the main Allegheny, Monongahela, and upper Ohio Rivers were maintained near seasonal levels through the releases from the flood control reservoirs. Flash boards were installed on the navigation dams on the Monongahela River to maintain sufficient depths for navigation. Precipitation in Pennsylvania and West Virginia during October was well below normal, with many substations reporting the lowest October precipitation of record.

Drought conditions which began September 13 in Ohio continued until the end of October. No measurable rainfall was reported at the Columbus Airport Station for 48 consecutive days. Evaporation continued at a high rate,

with the daily maximum temperature at Columbus, Ohio, averaging the highest of record.

This was the driest October of record in some areas of Indiana, with little local runoff from scattered light rains at the end of the month. Streams continued only slightly above record low levels.

This was the driest month of record at Nashville, Tenn., with only a trace of rain.

Arkansas Basin. --There was no precipitation in the Arkansas Basin during the first 15 days of October. Many stations reported no measurable precipitation during the entire month. The Arkansas River at Tulsa, Okla., showed a monthly mean stage of 3.2 feet, which is 1.6 feet below normal. Downstream at Van Buren, Ark., the monthly average was 2.7 feet below normal. The Cimarron River at Perkins, Okla., reported an average stage of 3.0 feet which is 1.4 feet below normal.

Lower Mississippi Basin. --At the end of October the Mississippi River at Memphis, Tenn., had been below the zero (0.0) feet of the gage since September 10 for a total of 52 days. This was the fourth longest period of record that the Mississippi had been below zero (0.0) of the gage at this point. Considerable difficulty was experienced in the Memphis reach (Caruthersville, Mo., to Helena, Ark.,) due to low water. Several tows were grounded, barges could not be loaded as heavily as usual, and the U. S. Engineer dredges were kept busy keeping the channel open.

Drought conditions continued generally in the Vicksburg, Miss., area with only a trace of precipitation recorded for the month. This equaled the driest October of record. The 2 months, September-October together, were the driest 2-month period of record. The Mississippi River at Vicksburg, Miss., was at the lowest stage (-3.7 feet) since October 28, 1956.

WEST GULF OF MEXICO DRAINAGE

At Bon Wier, Tex., the Sabine River was below the zero of the gage from the 14th through the 31st. Practically no rain occurred over the Sabine Basin in Texas during October.

PACIFIC SLOPE DRAINAGE

Columbia Basin. --Continued mild, rainless weather kept the Willamette River and its tributaries very flat during the first two-thirds of October. Streamflow at Salem, Oreg., averaged near 10,000 c.f.s. during this period. The first substantial rains of the fall season (October 21-23) caused minor rises on all northwest Oregon streams. The flow at Salem, Oreg., increased to a minor crest of 18,000 c.f.s. on the 25th, then receded slowly to the month's end. October average monthly stages in the Portland-Vancouver harbors were near the long-term mean value.

Puget Sound Drainage. --Precipitation and temperature were above average for October. Heavy rains from the 20th to the 22d caused the Nooksack, Skagit, Stillaguamish, and Snoqualmie Rivers in Washington to approach flood stages.

FLOOD STAGE DATA

(All dates in October unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
EAST GULF OF MEXICO DRAINAGE	*Ft.*			*Ft.*	
Choctawhatchee: Caryville, Fla.	12	2	2	12.1	2

* Provisional

RAWINSONDE DATA

Average monthly values

OCTOBER 1963

ALBANY, N. Y. — 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	86	5.8	84	265	1.7
1000	31	163			253	3.5
950	31	593	11.1	57	304	12.0
900	31	1,041	9.6	53	318	15.5
850	31	1,514	7.2	50	318	15.9
800	31	2,011	5.2	45	315	17.7
750	31	2,533	2.4	42	314	19.0
700	31	3,091	- .5	37	307	19.4
650	31	3,677	- 3.4	34	303	21.0
600	31	4,310	- 6.6	31	302	21.2
550	31	4,979	-10.9		297	22.0
500	31	5,712	-15.8		294	23.7
450	31	6,490	-21.3		294	24.9
400	31	7,357	-27.7	31	294	24.9
350	31	8,303	-34.7		289	25.3
300	31	9,361	-42.8		287	25.1
250	31	10,570	-50.7		284	28.2
200	31	12,002	-56.1		280	26.8
175	31	12,851	-56.1		282	26.8
150	31	13,826	-57.6		279	27.2
125	31	14,973	-59.3		279	22.5
100	30	16,369	-60.8		281	20.4
80	30	17,760	-59.5		285	14.8
70	30	18,595	-58.9		286	11.8
60	30	19,564	-58.6		291	10.1
50	30	20,711	-57.8		285	8.2
40	29	22,121	-56.6		298	6.8
30	29	23,951	-54.7		299	5.6
25	29	25,120	-53.5		289	5.8
20	28	26,566	-51.5		280	7.6
15	19	28,431	-49.4		276	10.1
10	8	30,947	-47.8			
7						

ALBUQUERQUE, N. MEX. — 842 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,619	11.6	56	4	1.9
1000	30	148				
950	30	587				
900	30	1,050				
850	30	1,536				
800	30	2,047	13.4	42	225	4.5
750	30	2,586	10.1	45	243	7.0
700	30	3,158	5.9	51	248	8.4
650	30	3,756	1.5	53	253	8.2
600	30	4,401	- 3.0	49	243	8.0
550	30	5,079	- 6.5	36	252	9.9
500	30	5,824	-11.2		251	12.0
450	29	6,618	-16.9		254	12.2
400	29	7,500	-23.7		263	12.6
350	29	8,462	-30.8		265	15.7
300	29	9,538	-38.9		270	21.4
250	29	10,765	-47.8		274	27.2
200	29	12,210	-55.8		277	28.9
175	29	13,055	-58.4		275	25.4
150	29	14,016	-62.3		276	23.7
125	29	15,130	-66.4		270	17.3
100	29	16,473	-69.0		273	13.8
80	29	17,808	-67.2		268	5.1
70	29	18,620	-64.7		269	1.7
60	29	19,564	-62.7		95	1.0
50	29	20,694	-60.8		93	1.0
40	29	22,090	-58.3		349	1.6
30	29	23,911	-55.7		322	3.9
25	28	25,076	-53.6		308	3.7
20	26	26,517	-51.2		286	7.0
15	19	28,395	-48.4		275	11.3
10	6	31,100	-44.6			

AMARILLO, TEXAS — 895 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,095	12.6	62	235	7.8
1000	31	147				
950	31	585				
900	31	1,050				
850	31	1,534	17.2	46	233	18.1
800	31	2,049	14.5	40	234	15.0
750	31	2,585	10.7	41	229	9.5
700	31	3,162	6.2	41	238	8.2
650	31	3,761	2.4	35	223	6.8
600	31	4,408	- 1.8		224	6.0
550	31	5,088	- 5.7		242	6.4
500	31	5,835	-10.7		253	8.2
450	31	6,630	-16.5		263	11.3
400	31	7,513	-23.2		273	13.0
350	31	8,476	-30.6		276	14.6
300	31	9,553	-38.9		287	18.8
250	31	10,780	-47.9		291	23.3
200	31	12,224	-55.8		289	28.2
175	31	13,069	-58.4		287	26.0
150	31	14,032	-61.7		283	23.7
125	31	15,152	-65.7		280	21.4
100	31	16,499	-68.1		283	15.5
80	31	17,840	-66.6		280	6.4
70	30	18,654	-64.8		243	1.9
60	30	19,594	-62.7		86	1.0
50	30	20,723	-60.6		41	2.1
40	30	22,120	-58.3		29	2.3
30	29	23,942	-55.0		339	3.5
25	29	25,112	-53.1		322	4.3
20	27	26,560	-50.7		306	6.0
15	19	28,443	-47.6		284	15.5
10	10	31,109	-44.3			

ANCHORAGE, ALASKA — 991 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	29	2.0	79	339	2.1
1000	31	- 45				
950	31	373	2.6	68	28	4.5
900	31	807	1.2	64	91	4.5
850	31	1,265	- 1.3	65	115	5.6
800	31	1,746	- 4.4	68	136	8.0
750	31	2,252	- 7.4	68	147	11.7
700	31	2,786	-10.8	65	153	11.7
650	31	3,347	-14.4	61	162	10.5
600	31	3,954	-18.6	58	164	9.1
550	31	4,589	-23.2	55	171	9.9
500	31	5,288	-28.0	50	179	7.4
450	31	6,029	-33.9	48	177	8.2
400	31	6,850	-40.2		177	8.0
350	31	7,748	-46.7		164	7.4
300	31	8,755	-53.1		173	9.1
250	31	9,922	-54.7		218	10.7
200	31	11,359	-51.6		242	13.8
175	31	12,227	-50.7		244	15.0
150	31	13,231	-50.6		245	17.1
125	31	14,420	-50.2		246	19.8
100	31	15,877	-50.4		250	20.0
80	31	17,332	-50.7		252	22.1
70	31	18,205	-51.2		257	22.1
60	31	19,203	-51.3		259	21.2
50	31	20,386	-51.8		257	23.9
40	30	21,824	-52.0		261	25.4
30	28	23,690	-52.2		260	27.6
25	28	24,870	-52.2		262	28.2
20	27	26,322	-52.2		264	28.6
15	25	28,193	-52.9		270	33.6
10	15	30,841	-51.9		273	42.0
7	8	33,225	-50.7			

*** ANNETTE, ALASKA — 999 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	37	9.0	83	150	11.1
1000	31	27			143	8.7
950	31	447	6.4	81	156	20.6
900	31	893	3.1	85	165	26.0
850	31	1,354	- .1	86	172	28.6
800	31	1,838	- 3.1	83	178	28.6
750	31	2,347	- 6.1	74	183	28.7
700	31	2,886	- 9.5	69	190	28.0
650	30	3,450	-13.5	61	191	28.7
600	30	4,059	-17.4	54	193	30.5
550	30	4,702	-21.8	52	194	29.9
500	30	5,401	-26.6	50	196	29.7
450	30	6,148	-32.7	46	199	30.5
400	30	6,973	-38.9	45	197	30.5
350	30	7,877	-45.0		203	33.4
300	30	8,894	-50.3		217	29.1
250	30	10,074	-52.4		233	22.7
200	26	11,528	-50.7		232	22.1
175	24	12,390	-50.5		239	22.7
150	24	13,394	-51.1		249	22.9
125	23	14,577	-51.7		246	23.3
100	21	16,039	-52.2		243	20.6
80	21	17,481	-52.7		242	21.2
70	21	18,341	-52.9		242	20.4
60	21	19,336	-53.5		242	20.2
50	21	20,507	-54.1		247	18.1
40	21	21,936	-54.5		244	20.4
30	20	23,787	-54.5		260	15.9
25	20	24,955	-54.5		261	14.8
20	20	26,385	-54.0		277	13.6
15	19	28,242	-53.3		286	12.0
10	14	30,844	-52.3		289	16.3
7	6	33,223	-49.7			

ATHENS, GA. — 992 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	11.5	84	10	3.7
1000	31	181				
950	31	615	16.2	53	41	8.7
900	31	1,074	13.7	53	36	8.2
850	31	1,554	11.5	45	33	8.2
800	31	2,059	8.6	46	8	8.2
750	31	2,592	5.8	39	357	10.7
700	31	3,153	3.0		358	11.1
650	31	3,748	.3		352	11.8
600	31	4,388	- 3.2		347	11.5
550	31	5,066	- 7.2		335	12.6
500	31	5,808	-12.3		332	14.4
450	31	6,596	-18.2		326	14.6
400	31	7,474	-24.7		324	14.8
350	31	8,431	-32.2		322	14.6
300	31	9,500	-40.6		309	17.5
250	31	10,718	-48.8		303	22.1
200	31	12,162	-55.0		293	28.0
175	31	13,009	-57.8		293	28.2
150	31	13,974	-60.9		289	27.2
125	31	15,099	-64.1		294	23.1
100	31	16,456	-66.5		297	15.7
80	31	17,809	-65.0		316	10.3
70	31	18,630	-63.8		338	5.2
60	31	19,574	-61.6		16	2.5
50	31	20,709	-59.6		21	3.7
40	31	22,111	-57.7		38	2.5
30	31	23,939	-54.2		352	2.9
25	31	25,114	-51.8		316	3.9
20	29	26,578	-48.5		271	9.1
15	26	28,483	-46.6		284	12.6
10	13	31,243	-41.8			
7						

*** BARROW, ALASKA — 1009 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	-11.2	77	39	5.1
1000	31	77	-11.2	79	45	6.0
950	31	469	-13.4	87	53	9.9
900	31	880	-14.4	87	40	8.2
850	31	1,312	-15.2	69	34	7.6
800	31	1,769	-16.5	64	23	6.0
750	30	2,256	-17.8	59	1	4.9
700	30	2,768	-19.8	57	322	4.9
650	30	3,314	-22.2	58	299	6.0
600	30	3,900	-25.4	57	276	11.1
550	30	4,523	-29.4	54	269	14.4
500	30	5,202	-34.0	52	270	16.9
450	30	5,933	-39.0		270	20.6
400	30	6,732	-44.6		263	24.5
350	30	7,614	-50.7		255	20.2
300	30	8,605	-56.0		249	20.8
250	30	9,759	-56.7		250	19.6
200	30	11,187	-53.0		251	17.1
175	28	12,045	-52.4		247	17.7
150	26	13,043	-52.2		242	15.5
125	26	14,222	-52.3		245	17.1
100	26	15,663	-53.1		246	17.1
80	26	17,097	-54.2		247	18.8
70	26	17,959	-54.6		250	21.6
60	26	18,938	-55.3		249	23.9
50	25	20,109	-55.8		252	27.2
40	25	21,528	-56.2		251	32.1
30	24	23,352	-56.6		256	38.3
25	24	24,508	-56.8		258	41.4
20	23	25,927	-57.3		255	43.1
15	20	27,755	-56.7		259	50.5
10	18	30,317	-55.7		266	66.0
7	13	32,554	-53.6			

BARTER IS., ALASKA — 1006 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	- 9.3	79	44	2.9
1000	31	60			346	.4
950	31	452	-11.8	78	46	3.5
900	31	868	-13.1	81	16	1.9
850	31	1,303	-13.2	77	322	1.6
800	31	1,765	-13.2	71	281	4.1
750	31	2,256	-14.3	64	272	6.6
700	31	2,776	-16.9	61	267	8.2
650	30	3,325	-19.9	57	264	9.9
600	29	3,917	-23.6	53	267	14.2
550	29	4,542	-27.5	49	272	16.5
500	29	5,227	-32.0	45	267	19.4
450	29	5,956	-37.2		269	23.3
400	29	6,768	-42.9		269	27.6
350	29	7,656	-48.8		268	28.7
300	29	8,655	-54.6		265	31.7
250	29	9,813	-56.8		264	33.0
200	27	11,226	-53.3		257	27.4
175	26	12,090	-52.4		259	23.9
150	26	13,088	-51.9		254	22.1
125	26	14,270	-51.5		251	20.6
100	23	15,697	-52.6		255	22.0
80	21	17,118	-53.5		251	23.5
70	21	17,976	-54.0		252	24.7
60	21	18,963	-54.5		251	24.7
50	19	20,123	-55.3		252	27.2
40	18	21,555	-55.7		256	32.4
30	18	23,385	-56.1		259	34.8
25	17	24,530	-56.3		261	36.9
20	11	25,907	-56.6		257	43.7
15	7	27,726	-56.2			
10	5	30,245	-55.7			

BETHEL, ALASKA — 995 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	39	- 4.5	87	334	6.8
1000	31	- 5				
950	31	402	- 3.4	76	1	12.0
900	31	827	- 4.7	69	356	9.9
850	31	1,276	- 6.1	64	347	8.2
800	31	1,749	- 8.0	61	337	6.6
750	31	2,247	-10.3	55	329	6.0
700	31	2,778	-13.2	51	333	5.2
650	31	3,335	-16.8	49	315	3.5
600	31	3,935	-20.7	47	278	3.7
550	31	4,570	-25.0	47	246	3.7
500	31	5,259	-29.7	47	225	4.5
450	31	5,999	-35.0		218	4.3
400	31	6,814	-40.8		239	5.2
350	31	7,711	-46.6		236	7.8
300	31	8,720	-52.3		240	9.5
250	31	9,893	-53.4		262	11.3
200	30	11,337	-50.8		264	16.3
175	30	12,207	-50.3		264	18.5
150	30	13,214	-49.8		263	20.4
125	28	14,405	-50.1		259	21.2
100	28	15,863	-50.2		262	23.7
80	28	17,318	-50.6		266	24.7
70	28	18,188	-50.8		260	24.3
60	28	19,191	-51.1		267	26.2
50	27	20,365	-51.5		265	27.2
40	26	21,820	-51.7		268	29.5
30	26	23,687	-51.4		272	31.9
25	23	24,867	-51.1		273	31.5
20	21	26,331	-51.4		272	30.5
15	16	28,186	-50.9		269	34.0
10	6	30,945	-49.6			

BISMARCK, N. DAK. — 956 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	505	6.5	83	199	1.0
1000	31	133				
950	31	560			239	1.4
900	31	1,012	13.9	47	262	7.6
850	31	1,492	11.8	42	269	8.9
800	31	1,997	8.8	40	279	10.9
750	31	2,525	5.3	38	283	12.6
700	31	3,087	1.6	35	290	15.9
650	31	3,676	- 2.2	40	284	18.6
600	31	4,312	- 6.4	42	281	20.4
550	31	4,978	-11.0	44	278	22.5
500	31	5,712	-15.8	42	278	24.5
450	31	6,492	-21.1	39	282	28.6
400	31	7,359	-27.0		281	32.4
350	31	8,308	-34.3		281	34.6
300	31	9,368	-42.4		283	35.0
250	31	10,577	-50.7		279	35.7
200	31	12,009	-56.1		277	38.3
175	31	12,857	-56.8		274	39.8
150	31	13,829	-58.8		277	38.5
125	31	14,969	-60.7		274	33.4
100	31	16,354	-61.5		270	26.8
80	31	17,744	-59.9		274	20.2
70	31	18,581	-60.1		279	15.9
60	31	19,539	-60.3		277	11.1
50	31	20,676	-59.9		284	7.0
40	31	22,073	-58.7		291	6.0
30	30	23,887	-57.2		304	5.8
25	30	25,043	-56.1		311	5.8
20	29	26,470	-54.8		290	8.9
15	21	28,327	-52.4		290	14.6
10	9	30,978	-49.2			

BOISE, IDAHO — 917 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	868	10.7	65	143	5.2
1000	31	137				
950	31	571				
900	31	1,025	12.7	54	146	4.7
850	31	1,505	11.7	47	181	3.3
800	31	2,010	8.9	47	218	5.4
750	31	2,537	5.5	48	246	9.9
700	31	3,103	1.9	49	243	14.6
650	31	3,695	- 1.6	49	235	19.8
600	31	4,331	- 5.7	47	232	25.4
550	31	5,003	-10.2	45	234	28.0
500	31	5,737	-15.0	43	241	30.5
450	31	6,523	-20.3	38	243	32.4
400	31	7,390	-26.5	37	242	37.5
350	30	8,344	-33.3		243	33.2
300	30	9,409	-41.3		241	34.8
250	30	10,624	-50.0		243	37.7
200	30	12,057	-57.1		246	39.8
175	30	12,900	-58.5		248	40.8
150	28	13,870	-59.6		245	39.8
125	27	15,003	-61.1		245	32.8
100	26	16,386	-61.6		246	22.3
80	26	17,771	-60.7		235	13.6
70	26	18,607	-60.2		233	8.7
60	26	19,566	-59.6		230	6.4
50	25	20,707	-59.4		234	3.3
40	23	22,122	-58.3		229	1.4
30	20	23,942	-56.5		336	2.9
25	19	25,111	-55.3		299	2.5
20	13	26,553	-53.7			
15	5	28,412	-52.6			
10						
7						
5						
4						

*** BROWNSVILLE, TEXAS — 1017 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	7	20.5	88	34	1.4
1000	31	152	23.0	76	90	3.5
950	31	597	20.2	76	107	7.8
900	31	1,064	17.5	65	118	8.0
850	31	1,551	14.9	56	106	7.6
800	31	2,062	12.0	56	88	6.2
750	31	2,594	9.1	55	89	4.7
700	31	3,169	6.2	48	86	4.3
650	31	3,768	3.0	42	123	1.9
600	31	4,419	- .6	42	243	1.0
550	31	5,102	- 4.5	39	253	3.5
500	31	5,855	- 9.6	42	237	6.2
450	30	6,652	-14.7	41	245	9.7
400	30	7,543	-21.1	42	250	14.8
350	30	8,514	-28.3	38	254	19.4
300	30	9,601	-36.3	36	255	28.2
250	30	10,844	-44.4		261	35.7
200	30	12,309	-53.6		262	45.1
175	30	13,156	-59.0		270	41.0
150	30	14,111	-64.3		272	31.1
125	30	15,211	-69.6		275	22.5
100	30	16,528	-72.8		284	10.7
80	29	17,842	-70.1		2	3.9
70	29	18,649	-66.7		58	5.8
60	26	19,578	-64.0		85	8.2
50	26	20,703	-61.0		93	9.9
40	25	22,101	-57.8		86	7.6
30	25	23,932	-54.0		80	9.3
25	24	25,113	-50.9		72	6.0
20	24	26,577	-47.5		88	5.2
15	24	28,497	-43.3		70	4.5
10	22	31,258	-38.0		88	2.9
7	18	33,751	-34.2		232	11.3
5	13	36,146	-29.2			

BUFFALO, N. Y. — 995 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	218	9.7	76	210	3.7
1000	31	180				
950	31	610	13.5	56	271	7.[illegible]
900	31	1,063	11.0	50	294	9.9
850	31	1,538	8.2	51	294	11.5
800	31	2,036	5.7	48	296	13.0
750	31	2,559	3.0	45	290	13.4
700	31	3,118	- .1	45	291	16.1
650	31	3,705	- 3.4	40	296	18.5
600	31	4,336	- 7.2	34	296	21.0
550	31	5,006	-10.9		295	21.[illegible]
500	31	5,736	-15.5		296	22.3
450	31	6,516	-21.1		297	23.9
400	31	7,383	-27.7		290	24.5
350	31	8,328	-34.8		292	25.6
300	31	9,386	-42.7		288	27.4
250	31	10,594	-51.1		294	28.4
200	31	12,021	-57.0		294	29.1
175	31	12,866	-57.0		294	28.6
150	31	13,839	-58.0		294	26.[illegible]
125	31	14,983	-59.7		289	24.5
100	31	16,373	-60.7		291	21.6
80	31	17,764	-59.9		291	17.3
70	31	18,607	-59.2		297	13.6
60	31	19,567	-59.0		297	10.9
50	31	20,715	-57.9		304	8.4
40	31	22,126	-56.7		294	8.4
30	30	23,956	-54.7		292	7.4
25	30	25,127	-53.2		295	6.8
20	28	26,560	-51.6		286	8.4
15	19	28,444	-49.2		287	13.4
10	5	31,178	-44.5			

*** BURRWOOD, LA. — 1019 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	22.2	78	49	6.6
1000	31	166	22.0	68	47	9.1
950	31	606	18.9	62	65	10.5
900	31	1,072	14.7	61	78	9.7
850	31	1,555	13.2	50	70	8.9
800	31	2,064	11.1	41	54	9.5
750	31	2,596	8.6	37	51	9.7
700	31	3,167	5.6	32	44	10.1
650	31	3,766	2.6	27	28	8.5
600	31	4,414	- 1.0	23	4	6.4
550	31	5,098	- 5.3	25	323	6.0
500	31	5,845	-10.1	32	306	8.7
450	31	6,644	-15.5	32	295	13.0
400	31	7,529	-21.5	28	297	17.3
350	31	8,499	-28.9	30	291	21.0
300	31	9,582	-37.4	32	286	25.1
250	31	10,816	-46.2		279	35.2
200	31	12,274	-54.4		275	45.6
175	31	13,119	-58.5		275	41.8
150	31	14,077	-63.1		276	35.4
125	31	15,184	-68.0		279	26.4
100	31	16,514	-70.3		291	16.7
80	31	17,845	-67.9		327	10.9
70	30	18,659	-65.5		22	7.0
60	30	19,595	-62.9		86	5.2
50	30	20,723	-60.8		73	5.1
40	30	22,120	-57.8		71	6.0
30	29	23,948	-53.7		75	6.0
25	29	25,127	-50.6		80	4.7
20	29	26,592	-47.4		261	1.2
15	29	28,507	-44.2		302	6.2
10	26	31,248	-39.5		279	10.1
7	24	33,717	-35.0		256	20.6
5	16	36,077	-30.9		268	37.3
4	6	37,628	-29.2			

***CANTON IS., PACIFIC AREA — 1010 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	4	27.6	76	91	6.8
1000	31	93	26.9	72	94	7.8
950	31	541	22.9	76	96	11.3
900	31	1,016	19.8	65	98	12.0
850	31	1,508	18.0	47	97	11.1
800	31	2,025	15.3	43	89	10.5
750	31	2,568	12.6	37	82	12.0
700	31	3,146	9.8	31	82	13.6
650	31	3,755	6.5	27	94	13.8
600	31	4,411	2.8	25	93	13.8
550	31	5,106	- 1.7	28	82	15.5
500	31	5,862	- 6.1	29	85	16.7
450	31	6,680	-10.2	24	88	18.8
400	31	7,581	-15.6	16	91	19.2
350	31	8,574	-22.2	13	99	19.8
300	31	9,691	-30.7	14	100	13.2
250	31	10,957	-41.2		88	10.9
200	31	12,433	-53.6		80	5.2
175	31	13,277	-60.8		82	5.4
150	31	14,218	-68.7		109	5.4
125	31	15,287	-77.0		135	7.2
100	30	16,543	-83.5		101	10.7
80	26	17,810	-74.0		90	21.4
70	24	18,601	-67.5		88	15.2
60	24	19,539	-64.0		121	3.9
50	23	20,674	-57.9		253	8.2
40	23	22,088	-55.8		262	13.0
30	22	23,932	-52.9		268	11.8
25	21	25,112	-50.9		275	13.2
20	19	26,570	-47.9		273	21.0
15	19	28,478	-45.4		272	21.8
10	19	31,204	-41.6		266	17.7
7	19	33,636	-39.9		268	15.7
5	13	35,946	-36.1		282	14.6

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1963

Standard pressure surface (mb.)	CAPE HATTERAS, N. C. 1017 MB						CARIBOU, ME. 992 MB						CHARLESTON, S. C. 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	4	16.3	83	21	8.7	31	191	4.5	89	276	4.3	31	13	13.7	86	353	6.0
1000	31	147	17.2	73	29	12.6	31	126					31	162	17.1	72	20	11.5
950	31	580	14.6	69	35	15.3	31	546	7.0	70	294	12.0	31	595	16.4	61	38	17.9
900	31	1,040	12.1	58	38	14.4	31	991	5.9	63	303	15.2	31	1,059	14.1	57	31	15.5
850	31	1,517	10.4	48	39	11.8	31	1,458	3.8	61	306	18.6	31	1,540	11.7	50	25	14.6
800	31	2,020	8.5	41	36	10.9	31	1,949	2.1	54	302	21.8	31	2,045	9.2	37	22	13.2
750	31	2,547	6.0	38	32	9.9	31	2,470	.2	54	296	23.3	31	2,579	6.7	35	8	11.8
700	31	3,114	2.9	38	20	8.4	31	3,020	- 2.1	57	291	26.8	31	3,142	4.2		4	10.9
650	31	3,706	0.0		2	7.8	31	3,604	- 5.3	57	292	28.6	31	3,738	1.1		1	11.3
600	31	4,348	- 3.8		6	8.4	31	4,231	- 8.7	53	291	31.1	31	4,382	- 2.6		350	12.8
550	31	5,022	- 7.8		353	8.7	31	4,895	-12.6	47	286	31.1	31	5,059	- 6.7		339	10.7
500	31	5,765	-12.6		338	11.1	31	5,623	-17.2	42	285	31.3	31	5,806	-11.6		331	13.0
450	31	6,552	-18.2		332	9.7	31	6,396	-22.8	39	280	32.2	31	6,598	-17.7		331	10.7
400	31	7,430	-24.7		305	13.8	31	7,258	-29.2	39	273	33.2	31	7,477	-24.2		322	12.2
350	31	8,388	-31.7		298	16.7	31	8,198	-36.4		274	34.4	31	8,436	-31.5		307	14.2
300	31	9,460	-39.6		287	19.2	31	9,269	-44.1		275	35.0	30	9,507	-39.9		286	17.7
250	31	10,684	-48.0		268	20.8	31	10,452	-51.0		271	38.5	30	10,730	-47.9		283	20.8
200	31	12,134	-54.3		259	28.6	31	11,890	-54.2		270	40.4	30	12,180	-54.0		282	28.4
175	31	12,986	-56.5		262	27.4	31	12,747	-54.6		270	37.5	30	13,032	-57.1		282	28.6
150	31	13,957	-59.5		263	26.0	31	13,731	-55.8		271	32.8	30	14,000	-60.4		283	26.8
125	31	15,091	-62.3		270	23.3	31	14,887	-57.4		271	28.0	30	15,125	-64.4		286	23.7
100	31	16,462	-64.1		277	15.9	31	16,296	-57.7		273	22.7	30	16,483	-65.8		292	16.1
80	31	17,827	-62.8		280	7.8	31	17,708	-57.0		275	18.8	30	17,840	-64.7		307	6.2
70	31	18,655	-61.7		267	5.8	31	18,556	-57.3		279	16.7	30	18,663	-63.0		316	2.7
60	30	19,613	-60.1		287	3.9	31	19,528	-56.7		276	13.6	30	19,612	-60.8		334	.8
50	30	20,754	-58.5		301	1.7	31	20,685	-56.4		281	12.4	30	20,749	-59.4		73	1.9
40	30	22,164	-56.2		16	2.3	30	22,107	-55.4		270	8.7	30	22,155	-56.9		12	2.3
30	30	24,005	-52.9		7	1.4	29	23,944	-53.9		274	8.5	30	23,992	-53.1		23	2.1
25	30	25,186	-50.8		306	3.5	28	25,117	-53.0		262	6.4	30	25,174	-50.4		300	1.4
20	29	26,651	-48.0		277	7.6	28	26,560	-51.9		263	6.6	28	26,540	-47.2		281	7.6
15	27	28,554	-45.3		272	13.8	27	28,429	-50.1		260	11.3	21	28,551	-45.0		274	17.9
10	25	31,293	-40.1		273	26.2	26	31,106	-46.4		263	24.1	6	31,256	-41.5			
7	22	33,762	-34.6		272	34.2	18	33,482	-42.7		269	35.2						
5	12	36,118	-30.9				5	35,681	-38.8									

Standard pressure surface (mb.)	COLD BAY, ALASKA 997 MB						COLUMBIA, MO. 991 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	30	3.2	77	318	9.5	31	238	14.7	66	165	4.1
1000	31	3			319	11.1	31	156				
950	31	416	.1	79	322	14.4	31	598	19.0	45	225	12.6
900	31	849	- 2.9	85	318	15.0	31	1,058	17.0	44	249	13.2
850	31	1,300	- 5.5	84	315	15.2	31	1,543	14.1	46	257	12.4
800	31	1,774	- 8.1	71	312	17.1	31	2,052	10.7	50	259	11.5
750	31	2,272	-10.6	58	318	17.1	31	2,586	7.1	53	260	10.3
700	31	2,801	-13.4	50	311	15.3	31	3,151	3.3	52	261	11.7
650	31	3,359	-16.6	50	306	14.2	31	3,742	- .7	48	262	13.0
600	31	3,960	-19.9	48	302	17.1	31	4,383	- 4.5	39	266	13.2
550	31	4,599	-23.8	46	302	18.6	31	5,055	- 8.6	35	272	14.2
500	31	5,291	-28.3	47	296	16.5	31	5,796	-13.0		278	15.7
450	30	6,037	-33.7	46	288	20.4	31	6,585	-18.6		283	17.3
400	30	6,861	-39.3	46	290	24.3	31	7,459	-25.0		288	21.4
350	30	7,764	-45.3		281	27.0	30	8,416	-31.1		290	24.5
300	30	8,782	-49.7		279	28.4	30	9,485	-40.5		289	27.4
250	30	9,870	-50.7		277	31.5	29	10,700	-48.8		293	32.8
200	30	11,431	-49.1		281	34.4	29	12,142	-55.3		296	33.4
175	30	12,308	-49.3		277	34.6	29	12,986	-57.6		297	28.4
150	30	13,317	-49.8		277	31.5	29	13,955	-59.6		297	30.1
125	30	14,499	-50.3		280	29.5	29	15,085	-63.2		297	24.9
100	30	15,955	-50.3		282	27.0	29	16,449	-64.4		297	18.1
80	29	17,411	-51.7		276	23.1	28	17,814	-63.6		307	12.8
70	29	18,284	-51.3		278	25.4	28	18,629	-62.9		318	7.0
60	29	19,279	-51.7		278	22.9	28	19,595	-61.7		326	4.9
50	29	20,456	-51.3		282	21.4	28	20,718	-60.2		316	5.2
40	30	21,905	-51.7		283	21.0	27	22,109	-58.5		342	4.1
30	30	23,772	-51.6		280	21.6	27	23,930	-55.6		322	4.9
25	30	24,954	-51.7		281	21.0	26	25,104	-53.6		292	5.8
20	29	26,401	-51.9		281	19.6	25	26,546	-51.2		284	9.3
15	28	28,269	-51.3		291	17.3	24	28,422	-48.7		281	18.3
10	21	30,901	-50.4		282	21.4	7	31,084	-45.0			
7	17	33,258	-48.1		287	23.9						
5	7	35,557	-45.5									

Standard pressure surface (mb.)	DAYTON, OHIO 986 MB						DEL RIO, TEXAS 981 MB						DENVER, COLO. 841 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	297	10.0	75	53	.6	31	314	18.1	78	101	6.2	31	1,611	7.8	60	209	3.7
1000	31	181					31	151					31	158				
950	31	616	15.4	50	235	6.4	31	596	19.5	70	143	12.8	31	590				
900	31	1,071	13.0	46	274	8.2	31	1,058	17.7	64	168	15.9	31	1,046				
850	31	1,549	10.7	38	288	9.1	31	1,545	15.1	61	164	13.0	31	1,523				
800	31	2,052	8.1	35	292	9.1	31	2,057	12.2	57	146	9.5	31	2,031	13.3	38	270	3.9
750	31	2,578	5.2	37	299	9.5	31	2,592	9.3	48	136	6.4	31	2,569	10.4	39	286	4.9
700	31	3,142	1.7	38	296	10.5	31	3,163	5.9	41	155	5.1	31	3,142	6.5	40	284	8.4
650	31	3,731	- 2.0	36	292	11.8	31	3,769	2.5	36	140	3.9	31	3,742	1.9	42	274	12.7
600	31	4,361	- 5.7		295	14.4	31	4,409	- 1.1	35	123	4.1	31	4,386	- 2.8	44	279	12.0
550	31	5,037	- 9.6		294	14.6	31	5,092	- 5.4		126	3.5	31	5,061	- 7.5	40	271	14.4
500	31	5,774	-14.5		291	16.1	31	5,839	-10.2		57	1.2	31	5,805	-12.4	35	266	15.2
450	31	6,557	-20.5		294	18.3	31	6,641	-15.8		297	2.1	31	6,595	-18.2		258	15.0
400	31	7,427	-26.6		291	19.6	31	7,521	-22.0		328	5.6	31	7,471	-24.6		256	16.1
350	31	8,377	-33.9		291	21.0	31	8,489	-29.4		322	9.7	31	8,428	-32.1		263	20.2
300	31	9,438	-41.9		294	23.7	31	9,571	-37.8		315	11.1	31	9,497	-40.6		263	23.3
250	31	10,650	-50.5		297	26.0	31	10,804	-46.4		302	17.3	31	10,713	-49.6		264	29.5
200	31	12,080	-57.0		295	28.6	31	12,262	-53.8		288	24.3	31	12,149	-56.1		276	33.6
175	31	12,923	-58.1		296	29.5	31	13,111	-58.0		288	23.9	31	12,994	-57.9		275	30.3
150	31	13,891	-59.4		294	27.8	31	14,072	-62.7		288	22.5	31	13,959	-61.1		271	28.6
125	31	15,025	-61.9		292	23.9	31	15,182	-67.9		286	17.7	31	15,082	-64.1		270	24.1
100	31	16,400	-63.3		296	18.8	31	16,509	-71.2		284	10.7	31	16,438	-66.4		261	15.5
80	31	17,773	-62.6		304	14.4	31	17,830	-69.8		302	4.7	31	17,795	-64.7		251	8.4
70	31	18,604	-61.6		309	10.3	31	18,633	-67.2		31	3.1	31	18,619	-63.4		247	4.1
60	31	19,557	-60.4		316	8.2	31	19,568	-64.1		85	6.0	31	19,562	-62.2		269	1.4
50	31	20,696	-59.4		318	5.8	31	20,693	-61.1		83	6.4	31	20,693	-60.9		30	1.2
40	31	22,101	-57.3		319	4.9	30	22,084	-58.4		84	5.6	30	22,085	-58.9		313	1.9
30	31	23,928	-55.2		303	4.7	30	23,908	-54.9		71	5.6	29	23,908	-56.4		296	6.0
25	31	25,096	-53.8		291	6.6	30	25,079	-52.6		69	5.1	29	25,071	-54.3		285	9.1
20	31	26,538	-51.2		285	8.9	29	26,533	-49.6		49	1.7	27	26,517	-52.4		277	15.0
15	29	28,417	-48.2		275	15.2	25	28,420	-46.2		279	9.1	21	28,410	-50.0		270	22.5
10	20	31,110	-45.0		274	19.2	13	31,122	-41.8				5	31,065	-48.0			
7	6	33,546	-42.5															

Standard pressure surface (mb.)	DODGE CITY, KANS. 927 MB						EL PASO, TEXAS 885 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	792	12.6	69	201	3.7	31	1,193	12.7	60	186	.9
1000	31	147					31	153				
950	31	581					31	595				
900	31	1,043	18.0	49	220	10.7	31	1,058				
850	31	1,532	17.4	39	224	14.8	31	1,539	16.7	43	178	3.9
800	31	2,047	14.3	38	232	13.4	31	2,053	14.1	44	192	5.2
750	31	2,586	10.7	38	240	9.9	31	2,593	10.1	46	208	4.5
700	31	3,160	6.5	40	240	9.9	31	3,164	5.6	49	207	2.5
650	31	3,759	2.2	39	249	9.3	31	3,763	1.8	43	179	2.7
600	31	4,406	- 2.3	37	255	9.5	31	4,408	- 1.9	34	81	1.4
550	31	5,086	- 6.6	28	259	10.9	31	5,086	- 5.6		252	3.5
500	31	5,830	-11.4		265	15.0	31	5,838	-10.3		263	4.5
450	31	6,622	-17.2		271	15.9	31	6,639	-16.0		278	5.1
400	31	7,504	-23.8		277	19.2	31	7,520	-22.5		282	11.5
350	31	8,465	-31.1		280	21.2	31	8,486	-29.9		285	13.4
300	31	9,539	-39.6		280	23.1	31	9,565	-38.0		282	17.3
250	31	10,762	-48.6		283	27.0	31	10,796	-47.4		286	23.1
200	31	12,203	-55.9		284	32.6	31	12,244	-55.2		278	27.2
175	31	13,048	-57.9		288	30.1	31	13,089	-58.7		282	29.3
150	31	14,018	-60.9		285	24.3	31	14,047	-63.1		281	23.5
125	31	15,141	-64.3		284	19.0	31	15,155	-67.8		277	17.3
100	31	16,497	-66.5		275	12.8	31	16,486	-70.6		275	12.8
80	31	17,851	-65.2		277	5.4	31	17,816	-68.2		300	4.1
70	31	18,673	-64.0		325	2.1	31	18,626	-65.7		43	1.2
60	31	19,614	-62.6		310	2.3	31	19,564	-63.1		69	2.3
50	31	20,742	-60.8		17	2.1	31	20,691	-60.8		64	2.9
40	31	22,139	-58.5		331	2.9	31	22,087	-58.2		58	3.7
30	31	23,972	-55.5		301	6.6	31	23,912	-54.7		51	5.4
25	31	25,141	-53.3		295	9.1	31	25,086	-51.9		44	5.1
20	31	26,584	-50.6		284	12.8	31	26,539	-49.4		314	2.3
15	28	28,464	-48.3		281	18.8	27	28,436	-46.3		279	9.3
10	13	31,170	-45.9				13	31,134	-41.6			

Standard pressure surface (mb.)	ELY, NEV. 812 MB						FAIRBANKS, ALASKA 983 MB						FLINT, MICH. 994 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,908	4.5	71	193	6.4	31	135	- 3.6	83	343	2.3	31	234	8.9	81	210	3.1
1000	31	166					31	3					31	181				
950	31	597					31	405	- 2.3	75	49	4.5	31	615	13.7	58	262	9.5
900	31	1,053					31	832	- 3.8	79	110	5.8	31	1,067	11.8	52	279	10.3
850	31	1,526					31	1,283	- 4.9	78	139	4.9	31	1,543	9.4	50	283	10.3
800	31	2,025	8.8	57	189	7.8	31	1,759	- 6.2	77	175	4.3	31	2,044	6.8	49	283	11.5
750	31	2,561	7.7	50	187	9.5	31	2,257	- 8.8	74	195	5.8	31	2,570	4.0	45	284	13.2
700	31	3,125	4.0	50	216	11.5	31	2,793	-11.8	68	210	6.0	31	3,130	1.0	38	285	15.2
650	31	3,724	.3	49	225	15.2	31	3,351	-15.4	65	217	6.0	31	3,717	- 2.4	37	287	17.7
600	31	4,361	- 3.7	44	233	15.9	31	3,957	-19.5	62	213	6.2	31	4,353	- 6.3	34	293	20.2
550	31	5,037	- 8.0	39	233	16.7	31	4,590	-23.9	55	221	8.9	31	5,021	-10.7		290	22.3
500	31	5,776	-13.1	39	235	18.3	31	5,287	-28.9	53	232	10.1	31	5,755	-15.7		289	24.3
450	31	6,566	-18.5	35	244	17.1	31	6,028	-34.2	48	239	11.7	31	6,535	-21.1		291	23.3
400	31	7,438	-24.7	32	246	21.2	31	6,848	-40.4		232	14.2	31	7,401	-27.4		289	23.9
350	31	8,395	-32.0	31	247	22.7	31	7,745	-47.2		227	16.1	31	8,348	-34.5		287	27.4
300	31	9,466	-40.3		247	25.8	31	8,750	-53.8		224	16.9	31	9,407	-42.1		290	29.5
250	31	10,686	-48.8		255	28.2	31	9,908	-57.8		230	18.5	31	10,619	-50.0		289	29.9
200	31	12,125	-56.4		257	29.9	31	11,329	-53.6		237	17.9	31	12,052	-56.3		294	33.6
175	31	12,968	-58.8		251	31.9	31	12,191	-51.9		239	20.6	31	12,998	-56.8		296	31.9
150	31	13,930	-61.0		249	27.6	31	13,192	-51.1		243	20.6	31	13,873	-57.8		296	30.9
125	31	15,054	-63.9		249	23.1	31	14,376	-51.4		242	21.6	30	15,016	-59.8		293	24.5
100	31	16,414	-65.6		249	15.7	31	15,826	-51.3		247	23.7	29	16,400	-61.0		295	21.8
80	31	17,774	-64.1		249	8.5	30	17,281	-51.5		246	24.3	29	17,790	-60.2		298	16.9
70	31	18,607	-62.6		239	6.2	30	18,146	-51.8		249	26.0	29	18,625	-59.6		302	12.6
60	31	19,548	-61.2		252	4.1	30	19,145	-52.4		253	26.0	29	19,590	-58.9		305	9.9
50	31	20,683	-60.2		291	2.1	30	20,322	-53.0		253	29.7	29	20,735	-58.2		306	8.0
40	29	22,088	-58.7		261	2.7	30	21,758	-53.3		257	31.5	29	22,144	-57.0		311	8.4
30	29	23,905	-56.3		279	3.5	28	23,522	-53.7		257	35.0	27	23,973	-54.9		306	8.4
25	28	25,069	-54.5		262	5.4	26	24,797	-54.1		261	37.1	27	25,142	-53.6		287	8.2
20	28	26,504	-52.5		266	9.1	24	26,220	-54.4		263	41.2	25	26,581	-51.9		285	9.1
15	17	28,368	-49.9		267	13.8	22	28,075	-54.0		268	43.1	18	28,448	-49.8		281	9.9
10							22	30,575	-54.2		270	50.3						
7							14	32,987	-54.0		275	54.4						
5							6	35,305	-52.3									

Standard pressure surface (mb.)	FORT WORTH, TEXAS 998 MB						GLASGOW, MONT. 934 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	180	16.6	73	203	2.9	31	696	7.3	67	84	1.9
1000	31	163					31	129				
950	31	608	21.1	53	209	14.2	31	554				
900	31	1,073	18.7	48	205	11.5	31	1,006	12.3	44	282	6.0
850	31	1,561	15.5	47	186	9.1	31	1,484	10.9	38	289	11.5
800	31	2,072	12.1	49	168	4.3	31	1,986	7.6	39	283	14.2
750	31	2,606	8.5	51	148	2.9	31	2,510	4.1	42	278	15.9
700	31	3,177	5.1	44	159	3.5	31	3,072	.6	41	275	19.8
650	31	3,775	1.3	39	155	3.3	31	3,657	- 3.2	39	270	22.7
600	31	4,419	- 2.4	32	206	2.3	31	4,292	- 7.3	40	269	25.3
550	31	5,098	- 6.3		246	3.1	31	4,998	-12.0	39	272	27.4
500	31	5,843	-11.2		302	3.5	31	5,686	-16.9		272	29.9
450	31	6,641	-16.7		312	5.8	31	6,460	-22.2		270	33.2
400	31	7,519	-23.1		300	8.7	31	7,324	-28.5		270	36.5
350	31	8,483	-30.5		297	12.4	31	8,268	-35.2		270	41.4
300	31	9,560	-39.0		299	15.3	31	9,325	-42.7		272	42.0
250	31	10,786	-48.0		297	20.2	31	10,533	-50.8		274	45.3
200	31	12,231	-55.4		293	23.7	31	11,965	-56.7		270	45.3
175	31	13,076	-58.5		291	24.5	31	12,810	-57.4		272	44.7
150	31	14,036	-62.3		290	23.3	31	13,781	-58.2		270	44.5
125	31	15,151	-66.2		293	19.4	31	14,924	-59.9		266	38.1
100	31	16,493	-69.0		293	12.4	31	16,216	-60.5		266	31.5
80	31	17,832	-67.4		304	5.8	31	17,708	-59.3		267	21.2
70	31	18,647	-65.3		20	3.3	31	18,546	-59.1		269	16.9
60	31	19,548	-62.7		85	3.7	31	19,510	-59.3		272	12.8
50	31	20,714	-60.4		57	3.5	31	20,650	-59.4		274	9.5
40	28	22,115	-57.8		59	3.9	30	22,049	-58.6		288	7.8
30	28	23,943	-54.1		24	3.7	26	23,852	-57.3		304	6.4
25	27	25,115	-52.1		341	4.7	24	25,007	-56.5		329	5.8
20	26	26,563	-49.4		312	6.6	18	26,432	-55.7		319	6.6
15	24	28,461	-45.7		288	12.0	13	28,280	-54.3			
10	12	31,216	-41.6									

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1963

GRAND JUNCTION, COLO. 855 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	11.2	50	131	5.1
1000	31	145				
950	31	583				
900	31	1,046				
850	31	1,524	12.8	47	130	6.0
800	31	2,035	12.8	43	150	7.6
750	31	2,571	9.7	44	217	5.8
700	31	3,143	5.5	50	237	9.1
650	31	3,743	1.3	51	236	11.8
600	31	4,384	-3.1	50	243	13.0
550	31	5,064	-7.5	42	251	15.5
500	31	5,804	-12.6	40	253	16.9
450	31	6,596	-18.3	38	256	16.9
400	31	7,470	-24.3	38	255	20.2
350	31	8,429	-32.0		255	24.5
300	31	9,499	-40.1		260	27.6
250	31	10,719	-48.9		266	33.4
200	31	12,158	-56.2		274	34.8
175	31	13,002	-58.6		273	32.6
150	31	13,963	-61.9		269	28.2
125	31	15,082	-65.0		267	25.8
100	31	16,436	-66.7		263	16.3
80	31	17,788	-65.6		257	9.7
70	30	18,613	-63.8		245	5.6
60	29	19,550	-62.2		246	2.9
50	29	20,680	-60.8		282	2.7
40	29	22,073	-58.8		301	3.5
30	28	23,886	-56.7		289	5.8
25	28	25,046	-55.2		288	8.5
20	27	26,478	-53.2		279	11.7
15	26	28,342	-50.6		275	17.7
10	25	31,010	-47.7		270	27.4
7	21	33,386	-44.7		269	40.4
5	16	35,621	-43.2			

GREAT FALLS, MONT. 888 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	8.1	59	224	5.6
1000	31	130				
950	31	559				
900	31	1,011				
850	31	1,487	10.9	44	237	12.8
800	31	1,990	8.0	46	250	15.0
750	31	2,517	4.4	48	255	17.3
700	31	3,078	.9	47	257	20.4
650	30	3,667	-2.5	46	254	23.5
600	30	4,304	-6.7	48	251	26.2
550	30	4,972	-11.0	47	249	28.6
500	30	5,705	-15.9	43	253	33.0
450	30	6,488	-21.6	41	248	35.5
400	30	7,253	-27.3		254	37.9
350	30	8,302	-34.1		257	41.0
300	30	9,366	-41.8		258	43.3
250	30	10,580	-50.3		262	43.5
200	30	12,012	-57.2		260	44.1
175	30	12,854	-58.0		257	47.6
150	29	13,829	-59.0		255	45.6
125	28	14,965	-59.8		254	38.7
100	28	16,357	-60.1		253	32.1
80	28	17,753	-59.2		250	23.9
70	28	18,593	-59.3		251	19.6
60	28	19,557	-59.2		251	15.0
50	25	20,710	-58.8		256	9.5
40	24	22,113	-58.7		270	6.8
30	24	23,926	-57.7		283	6.6
25	24	25,079	-56.7		297	7.5
20	23	26,499	-55.3		291	8.0
15	23	28,342	-53.8		292	10.1
10	17	30,980	-51.0		282	16.9
7	15	33,336	-47.8		284	22.5
5	12	35,583	-44.4			

GREEN BAY, WIS. 994 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	9.0	89	237	2.3
1000	31	156				
950	31	587	13.6	60	247	9.3
900	31	1,039	11.6	56	262	10.9
850	31	1,516	9.3	52	261	11.3
800	31	2,016	6.6	47	265	14.6
750	31	2,542	3.8	44	263	16.9
700	31	3,101	.7	41	268	17.9
650	31	3,689	-2.9	42	270	19.2
600	31	4,323	-7.0	44	271	21.8
550	31	4,990	-11.4	40	270	22.0
500	31	5,721	-16.2	35	278	21.8
450	31	6,500	-21.3		281	23.5
400	31	7,364	-27.4	35	284	24.9
350	31	8,311	-34.6		283	28.6
300	31	9,370	-42.5		287	30.9
250	31	10,579	-50.8		287	34.8
200	31	12,010	-56.1		294	36.3
175	31	12,859	-56.1		296	33.2
150	30	13,843	-58.1		295	31.3
125	30	14,985	-60.4		294	28.6
100	30	16,373	-60.9		297	23.9
80	30	17,761	-60.1		298	16.9
70	30	18,596	-59.5		308	14.6
60	30	19,561	-59.2		306	11.7
50	30	20,705	-58.4		308	8.5
40	30	22,112	-57.5		315	6.8
30	30	23,936	-55.6		295	8.2
25	30	25,104	-53.9		288	8.9
20	28	26,537	-52.0		277	10.5
15	21	28,393	-49.6		278	15.3
10						
7						
5						

GREENSBORO, N. C. 990 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	8.9	87	16	6.6
1000	31	185				
950	31	618	14.3	54	16	8.2
900	31	1,072	12.6	49	25	10.7
850	31	1,550	10.2	47	23	10.9
800	31	2,052	7.9	38	11	10.9
750	31	2,584	5.2	32	8	10.9
700	31	3,143	2.5	28	6	11.1
650	31	3,736	-.6		358	11.3
600	31	4,376	-4.2		350	11.8
550	31	5,050	-8.3		342	12.0
500	31	5,789	-13.4		342	13.4
450	31	6,577	-19.2		342	13.2
400	31	7,449	-25.9		336	12.4
350	31	8,401	-33.1		325	15.2
300	31	9,467	-41.1		312	16.3
250	31	10,684	-49.2		299	18.3
200	31	12,124	-55.8		291	25.3
175	30	12,971	-57.5		287	24.9
150	30	13,940	-59.8		286	24.1
125	30	15,069	-63.2		286	22.3
100	30	16,433	-65.1		291	17.9
80	30	17,796	-63.8		298	9.9
70	30	18,624	-62.6		294	5.8
60	30	19,571	-61.2		316	4.7
50	30	20,708	-59.5		340	2.5
40	29	22,109	-57.6		3	2.7
30	25	23,929	-55.3		328	2.1
25	22	25,095	-52.7		298	4.7
20	21	26,542	-50.3		289	9.3
15	21	28,432	-47.3		269	17.5
10	9	31,146	-44.3			
7						
5						

GUAM, MARIANA IS. 996 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	111	24.6	94	211	1.4
1000	31	73				
950	31	528	23.6	85	166	3.3
900	31	997	21.1	82	237	4.7
850	31	1,491	18.4	80	233	4.7
800	31	2,010	15.6	78	211	3.9
750	31	2,557	13.1	71	205	3.1
700	31	3,134	10.2	67	179	2.7
650	31	3,750	7.3	60	162	2.7
600	31	4,404	3.6	62	147	3.1
550	31	5,104	-.2	55	110	4.3
500	31	5,863	-4.6	52	119	4.9
450	31	6,686	-9.6	47	128	6.8
400	31	7,586	-15.6	49	120	7.6
350	31	8,580	-22.3	43	127	8.0
300	31	9,694	-30.4		123	9.1
250	31	10,963	-40.7		118	7.4
200	31	12,442	-53.0		110	10.3
175	31	13,288	-60.3		94	13.8
150	31	14,231	-67.8		85	16.5
125	31	15,305	-75.5		79	21.6
100	30	16,577	-80.4		86	29.3
80	24	17,848	-75.6		94	25.8
70	24	18,630	-71.0		96	23.3
60	24	19,554	-66.2		93	18.1
50	23	20,677	-60.4		98	8.5
40	21	22,080	-56.4		317	2.7
30	20	23,928	-51.8		280	7.0
25	20	25,115	-50.1		277	8.7
20	20	26,579	-48.0		285	7.6
15	16	28,486	-44.8		297	2.3
10	9	31,200	-42.0			
7	5	33,606	-41.2			
5						

HILO, HAWAII 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	11	21.1	88	237	6.4
1000	31	140	22.8	82	237	4.5
950	31	585	20.0	80	94	3.9
900	31	1,051	16.9	84	91	6.4
850	31	1,537	14.0	85	85	6.8
800	31	2,048	11.9	69	89	6.6
750	31	2,590	10.2	46	95	7.8
700	31	3,160	8.3	34	106	7.2
650	31	3,769	5.4		93	5.2
600	31	4,419	1.6		88	5.2
550	31	5,112	-3.0	25	86	5.1
500	31	5,864	-7.9		90	2.1
450	31	6,670	-13.5		339	.6
400	31	7,561	-19.8		313	3.5
350	31	8,539	-26.6		290	8.4
300	31	9,633	-34.9		284	15.0
250	31	10,881	-44.3		287	21.0
200	31	12,342	-54.7		275	23.9
175	31	13,186	-60.3		280	22.9
150	31	14,134	-65.8		274	19.0
125	31	15,228	-70.4		273	12.6
100	31	16,542	-73.2		276	5.6
80	31	17,851	-71.6		55	1.2
70	31	18,644	-69.2		84	6.0
60	31	19,571	-65.7		91	10.1
50	31	20,686	-62.8		88	12.4
40	31	22,076	-58.1		86	11.3
30	31	23,906	-54.1		86	6.0
25	30	25,082	-51.3		110	3.5
20	30	26,542	-48.1		32	1.6
15	30	28,453	-44.5		9	2.1
10	26	31,182	-41.0		249	5.1
7	11	33,606	-38.4			
5						

HUNTINGTON, W. VA. 993 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	8.3	90	122	.6
1000	31	190				
950	31	624	15.9	51	248	3.1
900	31	1,079	13.4	46	297	4.9
850	31	1,558	10.7	43	314	7.6
800	31	2,061	7.8	42	310	7.2
750	31	2,589	5.2	39	317	7.6
700	31	3,151	2.4	33	320	8.5
650	31	3,743	-1.0	35	319	9.1
600	31	4,381	-4.9		319	10.7
550	31	5,055	-8.8		313	12.0
500	31	5,792	-13.4		305	13.8
450	31	6,576	-19.4		303	14.0
400	30	7,448	-26.0		302	15.3
350	30	8,399	-33.3		301	17.5
300	30	9,464	-41.3		304	18.3
250	30	10,679	-49.7		307	20.4
200	30	12,114	-56.1		302	25.3
175	30	12,960	-57.3		300	24.9
150	30	13,931	-58.9		294	24.9
125	30	15,067	-61.8		296	21.6
100	30	16,443	-62.9		293	17.5
80	30	17,818	-62.5		302	12.4
70	30	18,646	-61.5		315	9.9
60	30	19,602	-60.2		328	6.6
50	30	20,743	-58.8		328	4.7
40	29	22,146	-57.1		338	3.5
30	29	23,977	-54.5		318	4.7
25	28	25,147	-52.5		305	6.2
20	28	26,595	-50.2		280	9.1
15	25	28,480	-47.1		285	16.5
10	7	31,118	-45.7			
7						
5						

* INTERNAT. FALLS, MINN. 972 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	7.6	82	202	3.9
1000	31	127				
950	31	554	11.1	70	223	8.5
900	31	1,005	11.2	58	253	14.0
850	31	1,481	9.0	49	268	14.0
800	31	1,980	6.3	43	269	13.8
750	31	2,500	3.1	44	270	14.6
700	31	3,062	-.2	41	272	17.9
650	31	3,645	-3.7	37	273	20.2
600	31	4,279	-7.8	37	271	23.3
550	31	4,943	-12.5	41	270	23.9
500	31	5,671	-17.3	37	275	23.1
450	31	6,445	-22.7	37	276	26.8
400	31	7,307	-29.2	35	279	28.7
350	31	8,248	-35.8	33	281	32.8
300	31	9,303	-43.2		281	36.1
250	31	10,510	-50.9		284	40.2
200	31	11,939	-56.8		287	37.5
175	31	12,784	-57.2		286	38.9
150	31	13,759	-57.6		284	38.9
125	31	14,905	-59.2		284	33.6
100	31	16,299	-60.4		288	26.6
80	31	17,692	-59.4		288	23.9
70	31	18,531	-59.1		293	18.3
60	31	19,496	-59.1		292	17.3
50	31	20,639	-59.1		298	12.0
40	31	22,039	-58.5		304	9.3
30	31	23,852	-57.3		308	8.2
25	31	25,006	-56.4		301	8.4
20	29	26,430	-55.1		292	8.7
15	29	28,273	-52.9		280	10.3
10	28	30,904	-49.0		270	17.9
7	25	33,283	-45.1		266	29.7
5	11	35,537	-43.1			

JACKSON, MISS. 1009 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	94	13.2	87	156	1.6
1000	31	171	17.5	72	165	2.1
950	31	609	19.2	52	184	2.9
900	31	1,077	16.4	51	19	.4
850	31	1,561	13.1	53	6	3.1
800	31	2,069	10.5	45	19	5.4
750	31	2,601	7.5	37	28	5.8
700	31	3,169	4.6	30	21	6.2
650	31	3,765	1.2	25	12	5.1
600	31	4,408	-2.9		347	5.2
550	31	5,086	-6.9		320	7.0
500	31	5,831	-11.5		312	8.2
450	31	6,626	-17.0		310	10.7
400	31	7,507	-23.1		304	14.4
350	31	8,470	-30.4		303	16.7
300	31	9,547	-38.7		296	23.1
250	31	10,773	-47.7		290	28.2
200	31	12,216	-55.5		286	30.9
175	31	13,062	-58.3		288	31.1
150	31	14,022	-61.9		286	26.6
125	31	15,139	-65.6		290	22.7
100	31	16,484	-68.2		298	15.7
80	31	17,825	-66.7		316	8.7
70	31	18,640	-64.8		358	5.4
60	31	19,582	-62.4		50	3.9
50	31	20,713	-60.2		64	3.5
40	31	22,112	-57.9		63	4.9
30	29	23,944	-54.0		27	4.7
25	29	25,121	-51.4		7	2.9
20	28	26,578	-48.2		297	5.4
15	19	28,468	-45.5		292	14.8
10	7	31,206	-43.8			
7						
5						

JACKSONVILLE, FLA. 1019 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	16.4	87	340	5.2
1000	31	162	19.0	76	360	10.9
950	31	601	18.0	66	31	16.9
900	31	1,065	15.1	63	39	14.2
850	31	1,547	12.4	58	34	13.4
800	31	2,054	9.9	50	30	10.5
750	31	2,586	7.2	44	17	9.7
700	31	3,153	4.5	37	7	9.3
650	31	3,750	1.6		356	11.3
600	31	4,396	-1.7		344	12.2
550	31	5,071	-6.2		337	12.8
500	31	5,822	-11.3		319	13.6
450	31	6,616	-16.6		308	15.7
400	31	7,499	-23.0		299	20.8
350	31	8,463	-30.3		291	23.1
300	31	9,541	-38.6		288	29.5
250	31	10,771	-46.6		285	34.6
200	31	12,227	-53.7		277	39.6
175	31	13,077	-57.4		276	40.4
150	31	14,041	-61.8		278	33.8
125	30	15,159	-65.7		279	28.9
100	30	16,507	-67.7		290	19.6
80	29	17,857	-65.6		331	5.4
70	29	18,677	-63.9		21	1.9
60	29	19,620	-61.6		114	1.7
50	29	20,755	-59.2		93	4.7
40	29	22,162	-56.2		80	3.7
30	27	23,998	-52.4		67	3.9
25	25	25,188	-49.5		113	1.6
20	25	26,660	-46.1		273	3.7
15	24	28,582	-43.0		282	11.3
10	18	31,354	-36.7		270	20.0
7	14	33,848	-32.8		267	37.5
5						

JOHNSTON IS., PACIFIC AREA 1013 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	26.8	82	92	12.4
1000	31	119	25.6	81	90	14.4
950	31	569	21.6	82	93	17.3
900	31	1,037	18.6	80	93	17.5
850	31	1,526	15.8	76	93	15.0
800	31	2,040	13.5	69	95	13.8
750	31	2,580	11.4	55	92	12.2
700	31	3,156	8.2	47	89	10.3
650	31	3,759	4.6	43	85	8.9
600	31	4,413	1.1	34	91	7.2
550	31	5,103	-2.6	32	88	5.1
500	31	5,859	-6.8		93	1.6
450	31	6,672	-12.0		267	2.1
400	31	7,566	-18.3	37	247	3.9
350	31	8,548	-25.4	38	261	11.3
300	31	9,648	-33.8		264	18.8
250	31	10,900	-43.8		265	25.8
200	31	12,360	-55.7		269	32.2
175	31	13,198	-62.0		270	35.4
150	30	14,136	-68.3		267	30.5
125	30	15,214	-73.7		258	22.0
100	30	16,505	-76.2		231	5.2
80	30	17,801	-72.9		96	7.8
70	30	18,589	-69.9		84	10.5
60	28	19,517	-66.5		89	15.5
50	27	20,629	-62.7		90	12.6
40	26	22,072	-58.2		82	7.2
30	25	23,852	-54.2		51	2.1
25	25	25,033	-50.6		343	1.6
20	25	26,496	-48.0		270	4.7
15	21	28,394	-45.0		355	3.7
10	17	31,107	-41.9		281	2.3
7	10	33,519	-39.0			
5						

KING SALMON, ALASKA 994 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	-1.2	86	351	4.9
1000	31	-37				
950	31	376	-.4	74	16	8.5
900	31	805	-2.5	74	19	7.6
850	31	1,257	-4.3	70	352	6.4
800	31	1,734	-6.1	67	346	3.7
750	31	2,238	-8.3	64	340	3.9
700	31	2,770	-11.3	59	330	2.5
650	31	3,332	-14.9	58	263	1.0
600	31	3,935	-19.0	55	197	1.9
550	31	4,576	-23.5	51	159	1.6
500	31	5,267	-28.6	48	138	2.5
450	31	6,009	-34.0	49	150	2.3
400	31	6,828	-40.0		212	1.6
350	31	7,728	-46.2		256	4.7
300	31	8,740	-51.4		257	7.2
250	31	9,917	-52.7		268	13.2
200	31	11,368	-50.1		269	17.7
175	31	12,240	-49.7		271	17.7
150	30	13,234	-49.6		269	19.2
125	30	14,427	-49.5		270	21.2
100	30	15,888	-49.5		269	20.8
80	30	17,348	-50.2		268	21.2
70	30	18,222	-50.6		270	21.4
60	30	19,222	-51.0		268	20.8
50	30	20,407	-51.3		267	21.8
40	30	21,857	-51.4		269	22.1
30	30	23,723	-51.8		271	24.1
25	29	24,899	-51.9		272	23.9
20	29	26,345	-51.8		272	26.4
15	28	28,216	-52.0		274	25.4
10	17	30,859	-52.9		276	30.1
7	6	33,022	-52.6			
5						

‡ KOROR, CAROLINE IS. 1007 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	30	28.2	84	260	7.4
1000	31	92	27.5	84	260	9.3
950	31	542	23.6	83	260	17.5
900	31	1,018	20.7	81	264	19.0
850	31	1,511	18.1	78	270	18.5
800	31	2,030	15.5	74	268	16.3
750	31	2,572	12.9	67	262	15.0
700	31	3,154	10.1	58	263	13.0
650	31	3,764	6.7	51	263	11.3
600	31	4,422	3.1	51	261	10.5
550	31	5,118	-.8	50	263	7.6
500	31	5,879	-5.0	47	284	4.3
450	31	6,695	-9.5	38	287	2.3
400	31	7,603	-15.2	33	221	2.9
350	31	8,598	-22.1	33	158	2.5
300	31	9,712	-30.5		80	5.2
250	31	10,981	-40.7		75	12.6
200	31	12,459	-53.2		76	20.6
175	31	13,305	-60.4		76	24.1
150	31	14,249	-67.8		84	32.8
125	31	15,324	-75.3		87	34.8
100	31	16,597	-80.4		84	28.2
80	31	17,873	-74.4		88	28.4
70	30	18,663	-67.9		86	22.5
60	30	19,601	-62.5		82	6.2
50	30	20,742	-57.7		270	8.9
40	29	22,164	-54.8		274	17.7
30	27	24,023	-51.9		262	23.9
25	26	25,214	-49.9		263	26.0
20	24	26,679	-47.5		261	22.7
15	21	28,604	-44.5		255	24.3
10	11	31,342	-41.0			
7						
5						

KOTZEBUE, ALASKA 1002 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	-8.0	80	20	7.2
1000	31	18			11	6.2
950	31	420	-6.3	66	45	9.1
900	31	841	-7.4	64	39	8.2
850	31	1,285	-8.5	62	27	6.8
800	31	1,754	-10.2	58	29	5.1
750	31	2,245	-12.4	54	359	3.7
700	31	2,774	-15.1	48	321	3.1
650	31	3,325	-18.3	47	283	4.1
600	31	3,924	-22.1	49	266	6.4
550	31	4,551	-26.4	45	243	8.4
500	31	5,240	-31.2	42	243	10.5
450	31	5,973	-36.9	46	240	12.0
400	31	6,782	-42.7		234	14.4
350	31	7,672	-48.9		232	16.5
300	31	8,670	-55.3		230	19.8
250	31	9,824	-57.4		236	21.0
200	31	11,248	-53.6		240	17.5
175	31	12,109	-52.6		245	16.7
150	31	13,107	-51.8		244	18.1
125	31	14,290	-51.6		251	19.4
100	31	15,737	-51.9		253	22.5
80	31	17,181	-52.4		257	22.9
70	31	18,043	-52.8		256	25.1
60	31	19,038	-53.0		257	27.8
50	31	20,211	-53.8		257	30.3
40	30	21,649	-53.9		260	36.1
30	30	23,495	-54.1		261	41.8
25	29	24,678	-54.1		262	42.7
20	26	26,127	-53.9		263	47.8
15	26	27,972	-53.9		262	53.2
10	19	30,578	-53.8		270	62.2
7	10	32,938	-54.6			
5	5	35,102	-55.8			

LAKE CHARLES, LA. 1020 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	16.5	93	56	3.1
1000	31	173	21.2	67	88	3.5
950	31	613	19.2	58	125	4.5
900	31	1,079	16.4	51	109	6.4
850	31	1,564	13.5	46	103	6.6
800	31	2,072	10.9	41	74	5.4
750	31	2,602	8.3	34	56	5.6
700	31	3,175	4.9	33	61	5.2
650	31	3,776	1.4	28	53	4.5
600	31	4,417	-2.0		16	2.9
550	31	5,099	-5.7		326	4.3
500	31	5,846	-10.4		297	6.2
450	31	6,648	-16.0		285	8.4
400	31	7,529	-22.6		280	13.0
350	31	8,495	-29.7	34	280	17.9
300	31	9,576	-38.1		277	22.1
250	31	10,806	-47.4		278	26.2
200	31	12,256	-54.5		274	36.3
175	31	13,104	-58.5		276	35.4
150	31	14,063	-62.5		281	27.4
125	31	15,177	-66.8		282	20.8
100	31	16,513	-69.5		293	13.0
80	31	17,850	-67.0		327	7.4
70	31	18,672	-64.8		34	5.6
60	31	19,608	-62.1		87	5.8
50	31	20,737	-60.1		86	5.2
40	30	22,143	-57.0		77	6.8
30	29	23,984	-52.6		47	4.1
25	29	25,170	-49.7		28	2.1
20	26	26,635	-46.2		280	5.2
15	22	28,550	-43.3		283	15.0
10	7	31,257	-38.6			
7						
5						

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 19[illegible]

Standard pressure surface (mb)	LANDER, WYO. 832 MB						LAS VEGAS, NEV. 940 MB						* LIHUE, HAWAII 1013 MB						LITTLE ROCK, ARK. 1011 MB						MCGRATH, ALASKA [illegible] MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	1,696	7.2	59	225	1.4	31	660	16.5	51	263	3.5	31	36	24.3	78	49	9.9	31	79	12.8	82	263	1.0	31	103	- 6.2	83	339	1.6
1000	31	149					31	124					31	152	23.7	78	54	12.0	31	171	17.3	64	222	2.1	31	- 7				
950	31	579					31	566					31	599	20.0	84	67	15.2	31	610	19.9	45	218	7.6	31	499	- 4.6	77	31	5.1
900	31	1,033					31	1,031	19.3	40	309	1.7	31	1,065	16.7	86	71	14.4	31	1,077	17.1	47	247	7.0	31	822	- 4.7	78	63	7.6
850	31	1,515					31	1,520	16.5	41	245	1.7	31	1,550	13.7	79	78	13.0	31	1,563	14.1	49	274	6.6	31	1,272	- 5.1	69	72	5.8
800	31	2,019	10.2	44	223	1.9	31	2,033	13.0	43	178	5.6	31	2,061	12.3	55	83	12.0	31	2,072	11.1	49	298	5.1	31	1,748	- 6.3	64	65	3.7
750	31	2,550	7.3	44	266	3.7	31	2,568	9.1	44	179	8.4	31	2,598	10.5	37	84	10.5	31	2,604	7.8	44	322	4.5	31	2,247	- 8.6	63	115	1.6
700	31	3,120	4.1	42	266	8.2	31	3,140	5.4	40	180	9.3	31	3,173	7.9	22	84	7.4	31	3,174	4.2	43	358	4.5	31	2,783	-11.4	64	191	2.1
650	31	3,715	.1	41	263	15.3	31	3,738	1.7	39	193	9.4	31	3,778	5.0	20	80	6.8	31	3,771	.2	41	331	4.5	31	3,343	-14.9	56	177	2.9
600	31	4,355	- 4.3	40	261	19.6	31	4,384	- 2.3	36	211	12.8	31	4,430	1.4	21	76	7.6	31	4,411	- 3.6	35	319	6.8	31	3,949	-19.0	55	190	2.7
550	31	5,029	- 8.8	38	258	20.0	31	5,059	- 6.9	35	218	14.0	31	5,119	- 3.3	21	70	6.2	31	5,089	- 7.4		313	8.4	31	4,582	-23.6	52	193	4.1
500	31	5,768	-13.9	36	255	21.4	31	5,807	-11.8	34	229	15.0	31	5,872	- 8.2	21	56	6.6	31	5,831	-12.1		311	10.1	31	5,281	-28.5	49	193	4.5
450	31	6,554	-19.6	39	255	23.9	31	6,596	-17.2	33	237	16.9	31	6,676	-13.6	21	38	6.2	31	6,621	-17.6		298	12.8	31	6,016	-34.0	46	199	5.8
400	31	7,426	-25.8	37	256	28.2	31	7,481	-23.4	33	245	18.6	31	7,567	-20.0	23	14	6.8	31	7,502	-23.8		310	14.0	31	6,843	-40.3		193	6.8
350	31	8,379	-33.0		255	29.5	31	8,445	-30.4		250	21.2	31	8,544	-27.0	25	2	9.3	31	8,463	-31.2		295	16.9	30	7,728	-47.1		189	9.7
300	31	9,446	-41.0		260	34.8	31	9,523	-38.5		254	24.7	31	9,636	-35.4	23	337	9.9	31	9,537	-39.5		298	20.4	31	8,732	-53.9		198	11.3
250	31	10,662	-49.5		266	34.6	31	10,752	-47.7		256	32.4	31	10,881	-44.9		310	16.3	31	10,761	-48.5		304	24.9	30	9,894	-55.5		227	10.9
200	31	12,099	-56.5		268	37.1	31	12,200	-55.6		257	32.6	31	12,338	-55.3		303	18.5	31	12,204	-55.8		297	22.3	30	11,329	-52.1		238	14.0
175	31	12,942	-58.2		268	36.1	31	13,045	-58.5		253	32.6	31	13,179	-60.7		299	19.2	31	13,048	-58.3		301	24.1	30	12,196	-50.7		243	14.8
150	31	13,909	-60.1		265	35.2	31	14,007	-61.7		251	29.7	31	14,126	-66.0		294	13.8	31	14,010	-61.5		296	22.5	30	13,201	-50.3		243	15.7
125	31	15,040	-62.7		260	29.3	31	15,128	-65.0		249	23.7	31	15,220	-70.4		293	7.0	31	15,130	-64.9		298	19.4	28	14,398	-50.3		246	16.7
100	31	16,410	-63.8		265	19.6	31	16,480	-66.9		252	18.1	30	16,536	-72.8		255	2.7	31	16,482	-67.2		306	13.4	28	15,855	-50.3		253	20.0
80	31	17,780	-62.8		254	13.6	31	17,833	-65.2		244	9.7	30	17,846	-71.3		52	1.7	31	17,830	-66.1		321	7.4	28	17,309	-50.6		253	22.7
70	31	18,610	-61.5		255	11.8	30	18,661	-63.1		251	7.4	29	18,638	-68.2		87	5.6	31	18,669	-64.5		359	5.6	28	18,178	-51.0		258	23.7
60	31	19,561	-60.9		247	7.6	30	19,607	-61.3		269	4.5	27	19,571	-65.0		78	9.1	31	19,589	-62.4		23	4.9	28	18,182	-51.4		260	24.5
50	31	20,696	-60.3		264	7.6	29	20,745	-59.4		324	2.3	25	20,685	-61.9		81	13.6	30	20,719	-60.1		44	2.9	28	20,364	-52.1		258	27.4
40	29	22,095	-58.8		288	2.9	28	22,145	-57.6		320	2.7	25	22,076	-58.5		87	13.2	29	22,128	-57.3		15	2.7	28	21,906	-52.6		261	30.1
30	29	23,909	-56.8		349	2.5	27	23,974	-54.8		296	5.2	25	23,902	-54.0		86	9.5	28	23,961	-54.2		29	2.5	28	23,664	-53.1		262	32.6
25	28	25,065	-55.5		315	6.2	28	25,154	-53.0		291	5.1	25	25,077	-51.7		91	9.1	27	25,137	-51.9		2	2.7	28	24,838	-53.2		266	34.4
20	28	26,493	-53.8		286	12.2	21	26,599	-51.0		277	9.5	25	26,533	-48.7		74	3.9	26	26,587	-4[illegible].3		325	4.3	28	26,276	-53.2		267	35.4
15	21	28,362	-51.5		284	15.5	16	28,493	-47.9				25	28,440	-45.2		323	1.2	21	28,473	-46.5		301	8.5	26	28,129	-53.3		268	40.2
10	9	31,030	-46.9										23	31,172	-39.8		235	4.9	[illegible]	31,193	-42.1				14	30,781	-50.9			
7													19	33,627	-36.2		245	10.7												
5													15	35,986	-32.2		245	17.1												
4													6	37,525	-30.3															

Standard pressure surface (mb)	‡ MAJURO, MARSHALL IS. 1010 MB						MARCUS IS., N. PACIFIC 1010 MB						MEDFORD, OREG. 970 MB						MÉRIDA, MÉXICO 1015 MB						* MIAMI, FLA. 1015 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	3	28.7	79	260	1.9	31	9	27.1	79	102	9.9	31	401	8.5	87	328	.6	31	11	19.2	96	47	5.1	31	4	21.5	88	359	4.7
1000	31	93	27.6	78	229	2.1	31	96	26.5	80	100	11.5	31	151					31	144	23.8	80	51	8.4	31	130	22.4	78	20	8.0
950	31	539	23.7	79	224	2.9	31	548	23.3	83	107	13.8	31	579	9.7	81	282	1.9	31	590	21.2	77	51	10.5	31	580	20.2	72	46	13.6
900	31	1,019	21.1	78	237	3.7	31	1,020	20.1	84	117	13.0	31	1,027	9.4	74	196	2.9	31	1,059	18.2	71	46	9.3	31	1,041	16.9	74	49	12.6
850	31	1,513	18.4	76	243	2.9	31	1,513	17.5	76	119	12.4	31	1,501	7.9	67	194	7.4	31	1,548	15.4	64	28	7.2	31	1,527	14.1	66	49	8.7
800	31	2,032	15.9	75	244	2.3	31	2,031	15.9	59	118	11.3	31	1,999	5.4	59	213	11.8	31	2,060	12.5	64	6	5.6	31	2,037	11.6	62	41	9.2
750	31	2,573	13.2	72	204	1.6	31	2,577	13.6	50	120	12.2	31	2,520	3.1	50	224	16.3	30	2,595	10.2	54	13	2.5	31	2,578	9.1	55	353	4.3
700	31	3,159	10.2	68	141	1.7	31	3,157	10.9	44	118	12.0	31	3,081	.2	49	226	21.8	30	3,174	8.1	44	350	3.5	31	3,145	6.5	44	318	5.8
650	31	3,766	6.7	68	109	3.5	31	3,771	7.3	45	110	10.5	31	3,667	- 3.0	46	230	24.9	30	3,777	5.5	30	333	3.1	31	3,748	3.3	43	305	7.0
600	31	4,428	3.0	69	111	4.3	31	4,426	3.5	44	110	10.5	31	4,301	- 6.9	43	232	29.1	30	4,435	2.0	31	348	4.5	31	4,395	- .1	34	302	10.3
550	31	5,120	- .6	66	86	7.0	31	5,125	- .4		104	9.5	31	4,971	-11.2	46	236	31.3	30	5,119	- 2.1	32	321	4.9	31	5,081	- 4.3	30	300	11.8
500	31	5,887	- 4.5	58	85	7.2	31	5,885	- 4.7		110	7.4	31	5,701	-15.6	42	239	34.0	30	5,885	- 6.5	32	298	5.8	31	5,832	- 9.0	27	291	14.8
450	31	6,704	- 9.1	48	80	8.4	31	6,704	- 9.8		106	5.4	31	6,483	-20.7	41	238	37.1	30	6,693	-11.6		291	8.4	31	6,633	-14.3	24	293	19.2
400	31	7,616	-14.7	38	97	8.2	31	7,608	-15.9		109	7.2	31	7,351	-26.8	42	240	39.2	30	7,596	-18.0		277	11.8	31	7,524	-20.5	24	287	23.9
350	31	8,615	-21.2	34	95	7.6	31	8,601	-22.9		94	7.4	31	8,301	-34.0	38	239	43.3	30	8,581	-24.6		273	19.2	31	8,498	-27.6	23	283	28.6
300	31	9,734	-29.4		91	7.2	31	9,713	-31.0		97	4.5	31	9,362	-41.9		239	44.3	30	9,684	-33.0		262	23.9	31	9,587	-35.9	22	279	36.1
250	31	11,009	-39.6		83	8.5	31	10,980	-41.0		100	2.1	31	10,576	-49.8		245	46.3	30	10,939	-42.9		264	30.3	31	10,827	-44.6		278	43.5
200	31	12,493	-52.5		57	9.1	31	12,461	-52.2		44	3.7	31	12,010	-56.9		247	41.8	30	12,405	-54.4		266	31.9	31	12,295	-53.7		271	47.6
175	31	13,342	-59.7		59	10.5	31	13,313	-58.6		41	4.3	31	12,854	-57.9		248	39.8	30	13,247	-60.9		256	29.3	31	13,136	-59.2		271	48.6
150	31	14,288	-67.4		63	9.7	31	14,266	-65.5		60	5.1	31	13,822	-59.3		245	39.8	30	14,189	-67.7		259	25.8	31	14,095	-65.1		270	40.6
125	31	15,365	-75.3		83	7.6	30	15,355	-72.6		57	8.5	31	14,960	-60.5		246	34.4	30	15,266	-73.6		259	19.4	31	15,191	-70.1		273	31.3
100	31	16,660	-78.9		79	14.6	26	16,641	-78.2		77	12.6	31	16,345	-61.3		240	27.0	30	16,558	-75.6		281	9.7	31	16,510	-71.8		286	17.3
80	31	17,924	-72.8		90	23.5	20	17,918	-75.7		94	17.7	31	17,735	-60.1		237	19.4	29	17,868	-69.9		15	4.5	31	17,836	-67.9		331	4.3
70	31	18,719	-67.4		95	17.5	20	18,700	-70.6		101	18.3	30	18,572	-59.7		236	15.7	29	18,666	-67.6		83	7.0	31	18,648	-66.4		72	2.7
60	30	19,657	-62.3		119	3.1	20	19,626	-66.5		95	17.1	30	19,534	-59.4		242	11.7	29	19,601	-64.7		87	9.5	31	19,580	-64.2		103	6.0
50	30	20,796	-57.3		262	12.2	20	20,741	-62.3		90	18.1	30	20,677	-58.8		243	6.4	29	20,725	-60.8		90	11.5	31	20,706	-61.0		85	6.2
40	29	22,216	-54.6		266	24.9	20	22,130	-58.9		93	17.5	29	22,078	-58.3		266	6.4	28	22,126	-56.6		79	8.4	31	22,103	-57.6		84	7.4
30	27	24,076	-50.5		263	30.3	20	23,958	-53.8		82	14.8	29	23,895	-56.6		267	5.2	28	23,976	-50.5		76	6.6	29	23,934	-52.8		71	5.4
25	26	25,271	-47.9		265	25.8	20	25,140	-50.1		82	10.7	29	25,052	-55.9		271	8.2	27	25,170	-48.2		59	4.1	29	25,117	-50.4		67	3.3
20	25	26,751	-45.4		263	26.4	20	26,603	-48.4		78	9.5	29	26,476	-54.3		271	9.1	26	26,652	-46.0		89	1.0	29	26,584	-46.9		192	1.9
15	20	28,674	-43.4		269	22.9	19	28,511	-44.7		180	2.3	28	28,330	-51.9		269	12.2	19	28,581	-42.1		232	2.5	27	28,510	-43.5		271	24.7
10	10	31,417	-39.8				17	31,235	-41.9		332	4.1	27	30,978	-48.7		269	17.9	9	31,344	-37.7				26	31,261	-38.8		258	6.2
7							13	33,668	-38.7		309	5.6	22	33,329	-46.8		263	24.9							21	33,729	-35.1		256	14.6
5							12	35,990	-36.5				21	35,587	-43.7		264	38.1							16	36,104	-30.3		267	20.6

Standard pressure surface (mb)	* MIDLAND, TEXAS 918 MB						MONTGOMERY, ALA. 1014 MB						NANTUCKET, MASS. 1016 MB						NASHVILLE, TENN. 999 MB						N. Y. INT. AP., IDLEWILD 1020 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	874	13.1	68	184	3.3	31	61	13.1	86	53	2.5	31	14	11.3	84	307	5.1	31	177	12.5	83	92	1.2	31	5	11.3	72	319	5.4
1000	31	148					31	178	17.1	68	65	5.2	31	150	13.3	70	279	6.0	31	175			123	2.1	31	169	13.4	58	321	9.1
950	31	586					31	615	18.0	58	82	7.0	31	581	12.1	60	310	12.8	31	612	17.1	51	224	4.9	31	599	13.0	50	340	10.9
900	31	1,047	17.8	57	183	9.5	31	1,080	15.3	58	63	5.1	31	1,032	9.6	56	321	13.6	31	1,070	14.3	51	275	3.5	31	1,054	10.9	47	342	12.2
850	31	1,535	16.4	52	194	14.2	31	1,562	12.5	55	37	6.0	31	1,506	8.3	45	318	13.0	31	1,551	11.5	51	315	5.1	31	1,529	8.6	45	334	13.2
800	31	2,049	13.4	47	197	9.1	31	2,069	9.8	47	33	7.0	31	2,005	6.0	43	313	13.6	31	2,056	8.7	44	332	5.4	31	2,029	6.5	35	323	12.4
750	31	2,589	9.8	44	185	3.9	31	2,600	7.3	38	18	8.4	31	2,530	3.2	42	310	15.0	31	2,585	6.0	40	340	6.2	31	2,555	3.5	34	320	12.0
700	31	3,158	6.1	38	148	1.6	31	3,168	4.5	32	11	9.3	31	3,087	.2	41	310	14.6	31	3,149	2.9	35	339	7.0	31	3,113	.3	34	315	14.6
650	31	3,760	2.5	34	143	2.5	31	3,767	1.6		16	9.1	31	3,675	- 2.9	35	301	15.9	31	3,742	- .7	34	334	7.6	31	3,703	- 2.8	31	318	15.9
600	31	4,404	- 1.5	35	153	3.3	31	4,408	- 2.2		349	9.9	31	4,309	- 6.2	32	291	18.5	31	4,381	- 4.4		316	8.9	31	4,335	- 6.0	28	310	17.3
550	31	5,088	- 5.5	29	212	3.7	31	5,092	- 6.2		327	8.5	31	4,976	-10.3		289	19.2	31	5,058	- 8.2		306	9.3	31	5,006	-10.2		305	18.8
500	31	5,833	-10.5	31	237	3.7	31	5,834	-11.1		322	9.7	31	5,713	-15.3		287	20.4	31	5,795	-12.8		300	11.8	31	5,739	-14.9		305	19.2
450	31	6,632	-16.0	28	263	4.5	31	6,633	-16.9		311	12.4	31	6,493	-20.9		286	22.1	31	6,586	-18.5		300	12.0	31	6,523	-20.6		303	18.5
400	31	7,512	-22.6	29	293	6.4	31	7,509	-23.4		308	13.4	31	7,361	-27.3		284	23.9	31	7,458	-25.1		299	13.2	31	7,387	-27.3		305	19.4
350	31	8,478	-30.0	30	295	11.5	31	8,471	-30.7		303	18.6	31	8,308	-34.4		281	25.3	31	8,413	-32.4		305	13.8	31	8,335	-34.3		300	20.6
300	31	9,557	-38.4	33	299	16.7	31	9,547	-38.9		304	25.4	31	9,368	-42.4		275	26.2	31	9,481	-40.8		303	17.1	31	9,395	-42.4		298	21.0
250	31	10,787	-47.3		302	20.0	31	10,777	-47.2		298	30.5	31	10,579	-50.1		267	27.8	31	10,698	-49.6		300	21.2	31	10,605	-50.4		291	24.9
200	31	12,235	-55.0		293	26.0	31	12,227	-55.1		291	33.6	31	12,015	-55.5		268	27.6	31	12,135	-56.4		296	24.1	31	12,039	-55.6		284	25.6
175	31	13,083	-58.2		288	24.9	30	13,075	-58.2		286	31.7	31	12,863	-56.8		268	27.6	31	12,978	-58.2		293	23.7	31	12,887	-56.7		277	25.1
150	31	14,044	-62.5		288	23.3	30	14,038	-61.5		286	31.5	31	13,837	-58.3		265	28.7	31	13,944	-60.4		291	22.5	31	13,860	-58.1		278	26.6
125	31	15,156	-67.3		285	18.6	30	15,160	-64.9		291	24.9	31	14,978	-60.4		267	24.3	31	15,072	-63.7		294	20.6	31	15,002	-60.3		278	25.8
100	31	16,489	-70.1		282	12.8	30	16,511	-67.5		296	17.9	31	16,365	-61.1		269	19.6	31	16,434	-65.2		301	14.2	31	16,387	-61.2		279	20.0
80	30	17,820	-68.3		289	5.1	30	17,857	-66.1		322	10.3	31	17,751	-60.6		265	15.2	31	17,774	-64.4		319	8.5	31	17,774	-60.6		281	14.8
70	30	18,635	-66.2		12	.8	30	18,678	-64.3		339	5.1	30	18,595	-59.7		271	11.8	31	18,618	-63.4		338	7.0	31	18,615	-60.1		283	12.8
60	30	19,565	-63.5		86	3.1	30	19,618	-62.0		20	3.7	30	19,551	-58.7		273	9.5	31	19,562	-62.1		5	5.4	31	19,569	-59.2		290	10.5
50	30	20,689	-61.4		77	3.3	30	20,750	-60.0		54	3.7	30	20,698	-57.7		274	7.2	30	20,700	-59.9		22	2.7	31	20,713	-58.5		288	7.4
40	30	22,081	-58.7		65	3.5	30	22,150	-57.8		67	4.3	29	22,106	-56.4		283	5.1	30	22,101	-57.7		4	2.7	31	22,121	-56.9		304	5.6
30	30	23,901	-55.2		35	5.4	29	23,979	-53.7		46	2.5	27	23,942	-54.4		294	3.5	29	23,933	-54.7		359	3.3	31	23,954	-54.2		297	1.6
25	29	25,068	-53.1		34	5.1	26	25,155	-51.3		324	3.3	25	25,116	-52.5		274	2.7	28	25,105	-52.8		308	3.9	30	25,122	-53.0		293	2.5
20	28	26,519	-49.9		294	2.5	23	26,618	-48.2		280	7.2	24	26,565	-50.5		258	5.4	28	26,554	-50.0		287	6.4	29	26,566	-51.0		296	4.1
15	26	28,408	-47.0		278	10.1	15	28,517	-44.9		271	13.4	23	28,447	-47.3		277	9.9	28	28,447	-46.9		283	11.7	28	28,481	-47.8		306	4.9
10	25	31,117	-42.9		279	16.3							22	31,144	-43.0		265	22.7	28	31,156	-43.4		272	18.6	6	31,166	-44.6			
7	21	33,560	-38.3		270	26.8							20	33,564	-38.9		266	35.9	27	33,574	-39.8		274	29.7						
5	13	35,905	-34.0		268	42.7							13	35,881	-35.2				24	35,985	-36.9									
4	7	37,523	-31.9																											

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1963

Standard pressure surface (mb)	NOME, ALASKA 1000 MB						NORFOLK, VA. 1020 MB						NORTH PLATTE, NEBR. 919 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	7	- 4.6	72	343	5.8	31	9	12.0	84	3	4.3	30	848	7.5	85	7	1.2
1000	31	10			346	6.0	31	174	14.7	69	8	7.4	30	143				
950	31	414	- 4.5	61	350	7.8	31	610	13.6	54	20	11.7	30	574				
900	31	839	- 6.5	60	357	8.7	31	1,062	11.6	50	28	12.6	30	1,023	13.2	67	139	1.7
850	31	1,285	- 7.9	55	357	8.2	31	1,539	9.4	46	29	11.7	30	1,506	15.0	44	237	4.5
800	31	1,755	- 9.5	51	360	8.2	31	2,040	7.5	38	23	10.9	30	2,017	12.5	42	268	8.7
750	31	2,251	-11.6	46	359	5.8	31	2,564	4.8	33	10	11.1	30	2,552	8.8	43	278	11.3
700	31	2,778	-14.3	43	350	5.8	31	3,129	1.9		2	10.9	30	3,122	4.7	46	274	12.4
650	31	3,331	-17.7	42	331	6.2	31	3,719	- 1.1		351	9.3	30	3,717	.6	44	281	14.6
600	31	3,932	-21.6	40	323	6.6	31	4,358	- 4.7		338	10.9	30	4,359	- 4.1	45	278	17.3
550	31	4,560	-25.8	38	295	5.2	31	5,029	- 9.1		333	11.1	30	5,035	- 8.4	39	277	19.0
500	31	5,251	-30.7	37	275	6.6	31	5,768	-13.9		325	11.1	30	5,773	-13.2	31	278	20.2
450	31	5,985	-36.1		249	8.5	31	6,552	-19.6		320	11.3	30	6,558	-18.9		280	22.7
400	31	6,800	-42.0		246	11.7	31	7,424	-26.2		325	12.8	30	7,432	-25.4		285	23.9
350	31	7,691	-48.3		236	13.0	31	8,375	-33.3		314	14.4	30	8,387	-32.7		290	27.6
300	31	8,691	-54.6		238	15.9	31	9,440	-41.1		304	15.9	30	9,452	-41.2		291	28.6
250	31	9,852	-55.6		248	18.1	31	10,656	-49.0		288	18.3	30	10,667	-49.7		284	31.7
200	31	11,286	-52.4		251	18.1	31	12,097	-55.1		272	26.0	30	12,104	-56.3		283	33.8
175	31	12,150	-51.5		259	18.3	31	12,945	-56.9		273	21.0	30	12,948	-57.8		284	35.5
150	31	13,152	-50.8		259	21.0	31	13,917	-59.0		270	23.1	30	13,915	-60.0		283	31.9
125	31	14,339	-50.9		257	20.0	31	15,051	-62.1		280	22.9	30	15,044	-63.0		278	23.7
100	31	15,791	-50.9		262	23.5	31	16,425	-63.1		282	15.7	29	16,407	-64.6		277	19.4
70	31	17,242	-51.2		261	25.4	31	17,801	-61.9		286	7.8	29	17,772	-63.7		283	12.0
50	31	18,110	-51.5		260	26.0	31	18,638	-60.7		284	5.4	29	18,601	-63.2		286	7.0
30	30	19,114	-51.9		265	28.0	30	19,592	-59.7		293	3.5	29	19,542	-62.3		310	3.7
20	29	20,287	-52.3		264	30.7	29	20,734	-58.5		332	2.9	29	20,670	-61.2		305	2.9
15	29	21,728	-52.7		264	33.6	28	22,143	-56.4		12	2.1	27	22,059	-59.2		324	3.5
10	29	23,683	-52.9		263	40.6	28	23,982	-53.3		353	2.1	27	23,869	-57.3		308	7.4
7	25	24,758	-53.1		265	41.0	24	25,150	-51.3		277	4.5	27	25,027	-55.2		298	8.7
5	20	26,173	-53.3		271	43.7	16	26,624	-48.1		260	8.4	27	26,457	-53.4		286	10.7
3	15	28,110	-52.4				10	28,552	-43.9				26	28,317	-50.7		283	16.5
2	10												25	30,974	-47.2		279	25.6
1	7												24	33,354	-44.4		276	31.5
.5	5												24	35,624	-41.3			

Standard pressure surface (mb)	* OAKLAND, CALIF. 1016 MB						OKLAHOMA CITY, OKLA. 973 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	6	13.0	86	11	.6	31	392	15.4	68	165	6.2
1000	31	139	14.2	80	207	.6	31	153				
950	31	574	13.4	67	264	1.0	31	595	20.5	50	196	14.8
900	31	1,028	13.3	52	269	3.3	31	1,060	19.2	47	219	20.4
850	31	1,508	11.5	45	249	4.5	31	1,549	16.2	47	229	15.2
800	31	2,013	9.5	40	231	6.0	31	2,062	12.6	49	235	10.7
750	31	2,537	6.7	35	224	8.7	31	2,598	8.8	49	234	6.8
700	31	3,109	3.4	31	232	11.8	31	3,167	5.0	45	224	4.9
650	31	3,700	- .1	31	230	14.4	31	3,765	1.2	38	226	5.4
600	31	4,344	- 3.7	30	230	16.3	31	4,408	- 2.5	29	249	4.7
550	31	5,017	- 7.9	27	234	16.7	31	5,086	- 6.7		268	6.8
500	31	5,762	-12.7	30	242	18.8	31	5,832	-11.7		285	9.1
450	31	6,548	-18.2	31	247	22.3	31	6,625	-17.2		295	11.3
400	31	7,429	-24.8	31	243	25.3	31	7,504	-23.8		289	11.7
350	31	8,386	-32.2	30	252	26.0	31	8,465	-31.1		296	15.9
300	31	9,457	-40.3		249	32.4	31	9,539	-39.6		299	19.4
250	31	10,678	-48.9		251	38.5	31	10,762	-48.4		297	24.1
200	31	12,120	-56.3		252	39.8	31	12,204	-55.7		294	26.2
175	31	12,964	-58.3		256	38.5	31	13,049	-58.2		299	25.4
150	31	13,930	-60.4		254	36.3	31	14,012	-61.6		290	25.3
125	31	15,060	-63.2		253	31.1	31	15,131	-65.6		291	20.2
100	31	16,427	-64.5		248	23.3	31	16,478	-67.6		292	12.4
70	31	17,796	-63.0		245	14.2	31	17,825	-66.0		296	4.9
50	31	18,626	-62.0		253	9.7	31	18,644	-64.5		327	2.5
30	31	19,575	-61.0		254	7.2	30	19,583	-62.7		8	2.3
20	31	20,713	-59.5		272	5.4	29	20,710	-60.6		34	1.7
15	29	22,110	-58.4		260	3.1	29	22,107	-58.2		344	2.9
10	29	23,927	-56.3		280	7.0	27	23,924	-55.0		327	3.3
7	29	25,089	-54.7		290	7.2	25	25,103	-52.7		329	4.9
5	28	26,519	-53.2		270	9.5	24	26,543	-50.4		288	10.1
3	28	28,383	-50.3		269	14.6	17	28,409	-47.0		287	17.9
2	26	31,055	-46.1		272	28.0	5	31,041	-44.2			
1	24	33,467	-41.9		270	32.6						
.5	6	35,792	-38.2									

Standard pressure surface (mb)	OLYMPIA, WASH. 1008 MB						OMAHA, NEBR. 970 MB						PEORIA, ILL. 997 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	58	8.8	94	196	3.7	31	403	13.0	76	173	3.7	31	200	11.9	75	151	3.3
1000	31	123	9.8	90	196	4.1	31	142					31	174				
950	31	548	9.4	78	203	11.5	31	579	16.3	61	201	6.2	31	610	17.1	50	220	9.7
900	31	998	7.4	73	215	14.4	31	1,038	16.6	46	244	10.7	31	1,070	15.3	50	250	10.7
850	31	1,467	4.8	69	213	18.6	31	1,523	14.2	43	261	11.5	31	1,553	12.9	46	256	11.8
800	31	1,960	2.4	63	216	20.0	31	2,032	11.2	41	269	11.1	31	2,059	9.5	48	259	12.8
750	31	2,475	- .4	59	215	21.4	31	2,561	7.6	42	270	10.9	31	2,592	6.2	48	262	13.8
700	31	3,030	- 3.3	59	221	24.3	31	3,132	3.7	45	279	14.9	31	3,154	2.4	50	263	15.2
650	31	3,605	- 6.9	56	223	24.3	31	3,725	- 1.4	44	279	15.5	31	3,745	- 1.4	50	267	16.3
600	31	4,234	-10.7	55	225	27.2	31	4,366	- 4.6	39	276	17.1	31	4,382	- 5.2	42	268	17.1
550	31	4,890	-14.6	51	228	29.5	31	5,037	- 8.8	33	273	18.8	31	5,053	- 9.4	39	275	19.4
500	31	5,615	-19.2	47	231	33.8	31	5,778	-13.9	29	276	21.6	31	5,790	-14.0		278	20.4
450	31	6,384	-24.3	45	232	37.5	31	6,561	-19.4		282	23.7	31	6,575	-19.6		277	19.4
400	31	7,242	-30.1	45	227	41.2	31	7,436	-25.5		284	24.7	31	7,445	-26.0		280	22.0
350	31	8,179	-36.8		226	46.8	31	8,390	-32.9		288	26.0	31	8,398	-33.2		279	23.9
300	31	9,231	-43.6		226	49.5	31	9,457	-40.8		292	30.5	31	9,462	-41.4		280	26.2
250	31	10,436	-50.8		231	49.7	31	10,674	-49.2		289	34.2	31	10,677	-49.8		285	28.4
200	31	11,872	-55.0		238	42.9	30	12,113	-55.5		290	36.1	31	12,112	-55.9		293	32.2
175	31	12,724	-55.4		239	38.5	29	12,959	-56.3		289	33.8	31	12,958	-57.5		294	31.3
150	30	13,705	-56.5		240	33.6	29	13,930	-59.6		291	29.7	31	13,928	-59.0		294	30.1
125	30	14,860	-57.0		236	30.1	29	15,062	-62.8		287	23.5	31	15,063	-62.0		298	25.6
100	30	16,273	-56.9		236	24.3	29	16,432	-63.7		292	19.0	31	16,439	-62.5		301	19.8
80	29	17,685	-56.5		233	19.0	29	17,803	-62.6		297	10.7	31	17,815	-62.4		306	14.2
70	29	18,537	-56.4		230	16.5	29	18,629	-62.2		302	8.5	31	18,643	-61.5		315	11.1
50	29	19,511	-56.1		235	14.2	29	19,580	-61.7		310	5.1	31	19,598	-60.7		328	7.0
40	29	20,669	-56.3		241	10.1	29	20,711	-60.4		320	4.7	31	20,736	-59.3		333	5.4
30	29	22,085	-56.5		258	6.4	29	22,107	-58.7		336	4.3	31	22,140	-57.4		330	3.5
20	29	23,915	-55.5		283	3.7	29	23,923	-56.2		306	4.7	31	23,969	-54.9		301	5.6
15	25	25,074	-54.8		267	3.9	29	25,085	-54.2		299	8.7	31	25,139	-53.2		284	6.4
10	21	26,515	-53.4		298	6.4	29	26,523	-51.7		296	11.5	31	26,582	-51.4		282	8.7
7	9	28,383	-51.5				24	28,413	-49.2		280	19.2	31	28,462	-48.5		278	16.1
5							13	31,071	-46.2				31	31,154	-44.6		272	25.3
3													27	33,561	-41.1		268	34.4
2													24	35,846	-38.1		268	41.8
1																		
.5																		

Standard pressure surface (mb)	‡ PONAPE, CAROLINE IS. 1005 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed
SURFACE	31	39	27.8	83	237	3.7
1000	31	83	27.3	83	244	4.7
950	31	528	23.7	83	254	10.7
900	31	1,008	20.9	81	262	11.8
850	31	1,503	18.6	79	265	11.1
800	31	2,023	16.1	76	269	8.0
750	31	2,564	13.4	73	262	6.0
700	31	3,150	10.3	71	247	3.5
650	31	3,758	6.8	72	222	3.7
600	31	4,419	3.0	75	210	3.3
550	31	5,110	- .7	73	166	3.9
500	31	5,880	- 4.8	69	152	4.7
450	31	6,695	- 9.5	63	144	4.1
400	31	7,606	-15.0	53	116	5.6
350	31	8,603	-21.5	46	104	7.0
300	31	9,721	-29.7	39	89	6.2
250	31	10,995	-39.8		74	8.2
200	31	12,479	-52.6		76	11.7
175	31	13,327	-60.0		62	16.1
150	31	14,272	-67.8		72	18.1
125	31	15,348	-75.4		68	20.8
100	31	16,622	-79.5		74	26.4
80	31	17,903	-72.9		89	25.3
70	31	18,695	-68.0		86	21.8
50	31	19,637	-62.0		108	7.2
40	31	20,774	-58.0		256	10.3
30	28	22,192	-54.6		268	18.5
20	27	24,048	-51.4		270	24.1
15	24	25,245	-49.8		265	25.1
10	21	26,713	-46.5		264	23.5
7	19	28,632	-43.9		262	22.3
5	10	31,362	-40.1			
3						
2						
1						
.5						

Standard pressure surface (mb)	PORTLAND, ME. 1015 MB						RAPID CITY, S. DAK. 906 MB						ST. CLOUD, MINN. 979 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	20	5.8	84	306	4.9	31	966	9.8	62	308	2.9	31	316	8.8	87	116	2.3
1000	31	145	11.5	63	295	5.8	31	135					31	137				
950	31	574	10.8	56	305	9.7	31	564					31	568	13.8	71	204	4.9
900	31	1,023	8.8	54	320	14.0	31	1,022	11.8	56	306	3.7	31	1,021	12.6	58	255	8.5
850	31	1,495	6.8	53	319	16.3	31	1,503	13.4	42	291	9.1	31	1,500	10.5	51	253	8.7
800	31	1,991	4.6	46	314	18.1	31	2,011	10.7	41	293	8.5	31	2,002	7.8	47	254	11.3
750	31	2,512	2.5	41	310	19.0	31	2,543	7.3	42	274	8.7	31	2,528	4.9	43	258	11.1
700	31	3,070	- .5	44	306	19.6	31	3,109	3.5	45	274	10.9	31	3,092	1.7	40	266	12.8
650	31	3,655	- 3.8	43	304	21.0	31	3,698	- .7	46	279	14.4	31	3,681	- 1.9	40	271	15.2
600	31	4,288	- 7.5	40	298	20.6	31	4,340	- 5.0	47	274	18.3	31	4,317	- 6.1	40	279	17.7
550	31	4,955	-11.5	36	294	22.3	31	5,011	- 9.5	42	275	21.6	31	4,987	-10.4	40	275	20.0
500	31	5,685	-16.4	35	290	21.6	31	5,748	-14.2	36	273	24.7	31	5,721	-15.2	39	271	22.0
450	31	6,462	-22.2		287	23.3	31	6,533	-19.8	35	277	25.4	31	6,497	-20.9	39	271	22.9
400	31	7,326	-28.5		288	26.2	31	7,401	-26.3	35	275	27.8	31	7,369	-27.1		277	25.8
350	31	8,269	-35.4		289	28.7	31	8,352	-33.7		272	28.4	31	8,317	-34.3		282	27.6
300	31	9,325	-42.8		287	28.6	31	9,415	-42.2		275	32.2	31	9,378	-42.2		285	28.4
250	31	10,534	-50.6		275	30.1	31	10,626	-50.1		278	35.2	31	10,588	-50.8		286	32.1
200	31	11,972	-55.1		270	30.1	31	12,062	-56.2		276	36.9	31	12,021	-56.3		286	36.5
175	31	12,823	-55.6		275	32.6	31	12,907	-58.1		275	37.1	31	12,868	-56.5		286	38.5
150	31	13,802	-57.2		269	29.5	31	13,873	-60.1		273	36.1	31	13,842	-58.6		285	34.8
125	31	14,951	-58.8		271	25.4	31	15,005	-62.2		273	29.5	31	14,981	-61.1		287	30.3
100	31	16,348	-59.3		273	19.6	31	16,377	-63.8		270	23.3	31	16,363	-61.7		289	27.8
80	30	17,744	-58.6		275	15.7	31	17,751	-62.2		266	13.4	31	17,749	-60.8		298	17.9
70	30	18,587	-57.7		271	11.3	31	18,581	-61.9		261	8.9	31	18,580	-60.8		296	15.3
60	30	19,558	-57.1		272	9.5	31	19,530	-61.5		261	7.4	31	19,538	-60.7		300	11.3
50	30	20,713	-56.4		276	8.0	31	20,662	-60.9		284	5.6	31	20,675	-59.8		304	8.5
40	29	22,126	-55.5		273	5.4	31	22,054	-59.6		296	3.7	31	22,075	-58.6		307	7.0
30	27	23,971	-53.6		272	4.1	31	23,861	-57.6		304	4.5	30	23,894	-56.9		303	7.4
25	24	25,174	-52.5		291	3.5	30	25,014	-56.2		301	8.7	29	25,053	-55.8		305	8.7
20	17	26,599	-50.7		271	7.4	29	26,444	-54.0		286	9.1	26	26,485	-54.1		294	10.3
15	6	28,492	-47.6				23	28,311	-51.2		281	13.2	25	28,339	-51.4		278	14.2
10							11	31,012	-48.7				16	30,973	-48.8			

Standard pressure surface (mb)	ST. PAUL IS., ALASKA 1001 MB						SALEM, OREG. 1010 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	31	10	2.3	83	331	8.0	31	61	9.1	91	180	4.5
1000	31	21			323	12.4	31	140	10.3	85	185	5.1
950	31	430	- .5	78	328	10.3	31	566	10.5	75	204	7.0
900	31	864	- 3.1	76	317	11.5	31	1,018	8.7	67	213	11.5
850	31	1,315	- 5.6	76	320	12.4	31	1,488	5.9	65	221	15.9
800	31	1,789	- 8.2	68	320	14.4	31	1,983	3.7	60	222	19.4
750	31	2,289	-11.1	58	318	15.9	31	2,502	1.0	58	222	22.1
700	31	2,815	-13.9	51	318	17.7	31	3,057	- 2.0	55	219	22.5
650	31	3,374	-17.4	50	316	16.9	31	3,638	- 5.3	55	221	25.8
600	31	3,969	-21.4	44	314	17.9	31	4,268	- 9.1	52	227	30.3
550	31	4,603	-25.7	38	309	17.7	31	4,931	-13.2	50	231	33.6
500	31	5,291	-30.1		306	19.4	31	5,657	-17.5	49	237	39.8
450	31	6,032	-34.8		303	18.8	31	6,433	-22.3	50	238	41.2
400	31	6,847	-40.4		299	19.6	31	7,295	-28.4	49	237	43.5
350	31	7,746	-46.1		297	26.0	31	8,239	-35.1	46	237	48.6
300	31	8,760	-50.3		286	27.2	31	9,297	-42.4		235	49.0
250	31	9,947	-50.4		291	28.6	31	10,506	-50.6		236	51.9
200	31	11,405	-49.4		284	26.0	31	11,939	-55.9		238	51.5
175	31	12,281	-49.1		280	29.7	31	12,786	-56.7		238	46.6
150	31	13,291	-49.5		278	32.1	31	13,760	-57.9		244	44.5
125	31	14,483	-50.0		274	31.9	31	14,907	-59.1		244	37.7
100	31	15,932	-49.7		275	32.6	31	16,307	-58.7		240	30.5
80	30	17,389	-50.4		276	29.1	31	17,708	-58.1		236	22.5
70	30	18,268	-50.6		273	29.9	31	18,549	-57.7		238	18.1
60	30	19,263	-51.3		272	28.0	31	19,522	-58.1		240	15.9
50	30	20,448	-51.7		273	29.1	31	20,671	-57.6		240	9.7
40	29	21,896	-51.9		278	25.8	31	22,080	-57.6		258	6.4
30	26	23,762	-51.0		275	26.2	29	23,901	-56.3		286	5.4
25	24	24,955	-50.7		277	28.2	25	25,071	-55.3		284	4.7
20	19	26,415	-50.6		279	28.9	21	26,503	-53.8		270	5.4
15	11	28,227	-52.4				16	28,371	-52.0		269	7.8
10												

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SALT LAKE CITY, UTAH — 874 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,288	9.6	70	145	7.0
1000	31	157				
950	31	589				
900	31	1,046				
850	31	1,524	13.9	49	156	9.9
800	31	2,035	11.9	42	177	8.7
750	31	2,574	8.2	46	214	8.5
700	31	3,138	3.9	51	238	10.9
650	31	3,733	- .3	52	238	13.4
600	31	4,373	- 4.4	47	238	15.0
550	31	5,049	- 8.7	44	248	16.7
500	31	5,786	-13.8	44	250	20.6
450	31	6,578	-19.2	44	249	23.1
400	31	7,447	-25.0	36	256	24.9
350	31	8,402	-32.3	34	257	23.9
300	31	9,471	-40.6		257	25.1
250	31	10,690	-48.9		257	27.0
200	31	12,131	-55.9		260	33.2
175	31	12,974	-58.6		261	33.6
150	31	13,937	-60.8		256	29.1
125	31	15,063	-63.7		255	23.5
100	31	16,425	-65.1		258	16.7
80	31	17,788	-63.4		244	10.5
70	31	18,614	-62.5		236	8.4
60	30	19,561	-60.7		237	5.8
50	27	20,696	-60.0		221	2.3
40	23	22,084	-58.7		248	2.1
30	23	23,901	-56.5		277	6.2
25	23	25,061	-55.4		275	8.4
20	18	26,496	-53.3		270	13.0
15	15	28,356	-50.9		267	18.3
10	11	31,010	-48.3			
7						
5						

SAN ANTONIO, TEXAS — 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	17.9	80	350	2.3
1000	31	164				
950	31	603	19.3	73	185	7.8
900	31	1,069	17.0	65	175	9.3
850	31	1,555	14.3	58	165	8.4
800	31	2,065	11.5	46	160	7.6
750	31	2,600	8.7	42	140	4.9
700	31	3,169	5.5	39	125	3.3
650	31	3,773	2.3	32	116	3.5
600	31	4,415	- 1.4		147	3.1
550	31	5,096	- 5.7		192	1.4
500	31	5,845	-10.3		254	2.5
450	31	6,646	-15.9		281	4.9
400	31	7,528	-22.5		279	7.0
350	31	8,494	-30.0		270	9.1
300	31	9,573	-38.3		268	11.5
250	31	10,804	-46.9		277	19.4
200	31	12,258	-54.3		276	29.1
175	31	13,105	-58.7		274	28.7
150	31	14,062	-63.5		275	25.6
125	31	15,169	-68.1		280	17.7
100	31	16,496	-71.1		284	11.1
80	31	17,820	-69.5		327	3.7
70	31	18,628	-67.2		45	4.1
60	31	19,557	-64.3		72	6.0
50	31	20,680	-61.2		86	6.8
40	31	22,075	-58.2		73	6.6
30	31	23,900	-54.6		57	4.9
25	31	25,074	-52.0		39	4.5
20	28	26,524	-48.8		12	2.9
15	21	28,427	-46.0		296	8.2
10						
7						
5						

SAN DIEGO, CALIF. — 1000 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	15.7	92	9	1.6
1000	31	128			2	1.9
950	31	565	16.5	71	339	2.3
900	31	1,026	16.1	56	249	.8
850	31	1,512	14.7	46	216	3.3
800	31	2,022	12.3	41	203	6.0
750	31	2,555	9.5	34	204	7.4
700	31	3,130	6.5	29	208	5.6
650	31	3,728	3.1	26	214	7.4
600	31	4,378	- .9	25	218	8.4
550	31	5,057	- 5.1		232	10.9
500	31	5,810	-10.1		237	13.6
450	31	6,603	-15.8		242	16.1
400	31	7,492	-22.4		244	18.6
350	31	8,458	-29.7		248	23.1
300	31	9,540	-37.6		255	28.4
250	31	10,776	-46.1		259	33.0
200	31	12,232	-54.6		258	37.9
175	31	13,079	-58.4		259	35.5
150	31	14,040	-62.1		254	29.7
125	31	15,157	-66.1		250	23.9
100	31	16,501	-68.1		257	15.5
80	31	17,844	-65.9		256	6.0
70	31	18,657	-64.0		250	4.5
60	31	19,606	-61.9		211	1.7
50	31	20,739	-59.8		133	.4
40	31	22,140	-57.5		75	2.1
30	30	23,970	-54.1		10	2.5
25	28	25,142	-52.4		5	2.5
20	24	26,588	-50.1		279	3.7
15	21	28,481	-46.6		270	10.7
10	7	31,261	-42.5			
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SAN JUAN, P. R. — 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	25.5	85	135	2.9
1000	31	113	25.5	83	115	5.6
950	31	564	23.0	81	122	8.2
900	31	1,035	20.6	73	122	9.3
850	31	1,529	17.9	70	108	8.0
800	31	2,046	15.0	65	120	5.2
750	31	2,587	12.1	61	117	4.1
700	31	3,166	8.9	58	118	3.9
650	31	3,771	5.1	53	140	[illegible]
600	31	4,426	1.6	51	121	3.7
550	31	5,116	- 2.3	43	125	3.5
500	31	5,874	- 6.5	37	127	1.6
450	31	6,683	-11.2	32	32	1.2
400	31	7,585	-17.1	30	297	4.9
350	31	8,573	-24.0		290	8.0
300	31	9,680	-32.4		305	10.3
250	30	10,937	-42.3		300	21.6
200	29	12,408	-54.4		300	28.4
175	29	13,251	-60.7		303	29.1
150	29	14,195	-67.5		314	19.8
125	29	15,274	-74.1		314	11.8
100	29	16,566	-74.8		326	3.9
80	29	17,876	-71.1		75	4.1
70	28	18,676	-68.5		76	9.3
60	28	19,601	-65.0		84	12.2
50	28	20,725	-60.6		80	11.7
40	28	22,129	-55.8		85	9.7
30	28	23,985	-50.1		102	4.7
25	28	25,180	-48.0		99	2.3
20	28	26,660	-45.2		320	1.0
15	26	28,592	-42.2		171	1.7
10	25	31,360	-37.8		352	2.7
7	22	33,820	-35.3		58	6.2
5	15	36,192	-30.7			

SANTA MONICA, CALIF. — 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	16.9	82	43	2.9
1000	31	128	17.4	76	67	1.7
950	31	569	16.9	66	105	2.1
900	31	1,028	16.2	55	127	2.9
850	31	1,512	14.1	50	168	2.9
800	31	2,022	11.5	42	195	[illegible]
750	31	2,559	9.0	34	210	4.9
700	31	3,128	5.9	35	204	5.4
650	31	3,725	2.4	30	211	5.8
600	31	4,372	- 1.8	30	216	6.8
550	31	[illegible]	- 6.3		237	10.1
500	31	5,799	-11.0		240	12.6
450	31	6,591	-16.9		249	14.2
400	31	7,473	-23.2		248	15.9
350	31	8,438	-30.5		256	20.0
300	31	9,515	-38.9		258	22.5
250	31	10,744	-47.2		256	32.6
200	31	12,195	-55.4		256	35.4
175	31	13,041	-58.6		255	34.8
150	31	14,002	-62.1		253	30.9
125	30	15,116	-65.7		254	25.1
100	30	16,462	-68.1		252	19.4
80	29	17,804	-66.2		254	8.2
70	29	18,622	-64.3		256	5.6
60	29	19,565	-62.7		257	3.1
50	29	20,695	-60.6		259	1.7
40	28	22,095	-58.0		282	1.6
30	28	23,918	-55.5		358	2.1
25	28	25,096	-53.5		283	2.1
20	28	26,530	-51.2		273	5.4
15	22	28,415	-48.1		267	11.3
10	14	31,119	-45.7			
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SAULT STE. MARIE, MICH. — 992 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	7.6	93	70	1.7
1000	31	154				
950	31	582	10.8	74	258	8.7
900	31	1,032	9.8	61	275	11.5
850	31	1,506	7.7	53	275	14.4
800	31	2,005	5.5	49	272	17.7
750	31	2,528	2.7	45	278	18.8
700	31	3,086	- .6	44	280	20.4
650	31	3,670	- 4.2	44	279	23.5
600	30	4,297	- 8.2	41	282	25.3
550	30	4,965	-12.1	35	285	26.4
500	30	5,691	-16.9		286	28.9
450	30	6,468	-22.4		286	29.7
400	30	7,328	-28.7		286	32.2
350	30	8,271	-35.7		288	34.8
300	30	9,325	-43.3		291	37.1
250	30	10,531	-50.9		290	39.6
200	30	11,959	-56.7		294	40.0
175	30	12,806	-56.2		291	37.7
150	30	13,784	-57.1		290	36.9
125	30	14,933	-58.8		293	30.9
100	30	16,329	-59.6		295	24.5
80	30	17,727	-58.7		296	19.0
70	30	18,569	-58.3		299	15.7
60	30	19,537	-57.9		300	13.0
50	30	20,688	-57.7		302	11.1
40	30	22,097	-57.1		301	9.1
30	30	23,924	-55.6		294	9.5
25	30	25,090	-54.2		288	9.5
20	30	26,527	-52.6		276	10.9
15	30	28,394	-50.7		276	14.0
10	30	31,058	-46.8		267	21.8
7	29	33,446	-44.3		262	35.4
5	27	35,708	-40.6			

SHEMYA, ALASKA — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	5.4	82	282	10.3
1000	31	116			276	11.8
950	31	531	2.1	76	282	15.2
900	31	967	- 1.0	76	289	15.7
850	31	1,422	- 2.9	63	292	17.3
800	31	1,901	- 4.9	54	282	18.1
750	31	2,405	- 7.0	43	285	20.6
700	31	2,942	- 9.7	39	286	22.7
650	31	3,508	-12.8	41	284	26.0
600	31	4,118	-16.5	42	280	28.2
550	31	4,763	-20.7	40	280	32.6
500	31	5,466	-25.2	41	280	36.9
450	31	6,221	-30.1		277	38.9
400	31	7,053	-35.6		275	45.3
350	30	7,961	-41.2		281	54.8
300	30	8,995	-46.5		277	63.1
250	30	10,194	-50.4		276	73.0
200	30	11,642	-51.7		275	71.7
175	30	12,507	-52.1		274	68.0
150	30	13,504	-52.6		274	60.2
125	30	14,680	-53.1		274	55.8
100	30	16,116	-53.4		272	48.2
80	29	17,555	-53.5		272	36.9
70	29	18,421	-53.2		273	37.3
60	29	19,406	-53.3		272	32.2
50	29	20,580	-53.3		272	30.3
40	29	22,018	-52.9		274	27.6
30	29	23,874	-52.5		280	21.6
25	27	25,068	-51.0		276	18.5
20	26	26,524	-50.4		280	16.1
15	17	28,380	-49.2		271	20.2
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* SHREVEPORT, LA. — 1011 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	15.7	79	192	2.3
1000	31	175	19.4	65	207	4.3
950	31	623	20.7	45	233	7.4
900	31	1,085	17.5	44	215	4.9
850	31	1,571	14.2	45	173	3.3
800	31	2,079	11.1	44	125	2.1
750	31	2,618	7.7	39	56	1.9
700	31	3,181	4.5	36	52	4.1
650	31	3,779	.9	35	38	4.5
600	31	4,418	- 2.8	30	14	4.5
550	31	5,100	- 6.8	25	337	5.8
500	31	5,841	-11.5	26	333	6.8
450	31	6,637	-17.2	29	304	8.0
400	31	7,514	-23.5	31	296	11.5
350	31	8,477	-30.8	31	296	14.6
300	31	9,552	-39.2	30	292	17.9
250	31	10,777	-48.2		298	19.6
200	31	12,219	-55.7		289	26.4
175	31	13,063	-58.6		288	27.4
150	31	14,023	-62.1		290	25.3
125	31	15,139	-66.4		290	20.4
100	30	16,477	-69.4		294	13.6
80	30	17,812	-67.4		317	6.4
70	30	18,633	-65.3		17	3.9
60	30	19,563	-63.1		59	3.9
50	29	20,690	-60.8		62	3.9
40	29	22,086	-58.1		54	4.3
30	29	23,913	-54.7		6	3.5
25	29	25,085	-52.4		337	3.9
20	28	26,530	-49.4		288	6.8
15	26	28,433	-46.1		286	12.2
10	24	31,160	-41.5		277	19.8
7	21	33,603	-36.8		272	28.7
5	10	35,916	-32.7		266	42.2

SPOKANE, WASH. — 933 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	6.8	78	151	2.7
1000	31	143				
950	31	566				
900	31	1,017	9.8	64	189	6.6
850	31	1,490	7.8	57	216	10.3
800	31	1,988	4.8	53	226	12.8
750	31	2,504	1.5	51	232	16.5
700	31	3,064	- 1.8	49	234	19.8
650	31	3,640	- 5.3	48	236	22.7
600	31	4,274	- 9.2	47	238	28.0
550	31	4,933	-13.3	44	237	31.3
500	31	5,661	-17.9	43	239	35.4
450	31	6,431	-23.1	41	238	41.6
400	31	7,295	-28.7	41	240	48.6
350	31	8,238	-35.2		240	52.8
300	31	9,294	-43.0		242	56.1
250	31	10,500	-51.1		240	55.6
200	31	11,931	-56.3		243	55.0
175	31	12,777	-56.7		245	46.8
150	31	13,752	-57.5		244	43.9
125	31	14,901	-58.2		243	39.4
100	31	16,306	-58.1		243	30.5
80	31	17,713	-57.6		243	23.3
70	31	18,554	-57.7		246	18.5
60	31	19,529	-57.1		250	13.6
50	30	20,679	-57.6		252	11.3
40	29	22,087	-56.9		275	8.2
30	28	23,912	-56.1		280	6.6
25	27	25,073	-55.2		300	7.6
20	26	26,502	-53.7		316	6.4
15	12	28,373	-52.2		304	12.2
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SWAN ISLAND, W. I. — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	26.7	80	25	8.0
1000	31	101	26.4	79	25	10.1
950	31	550	23.3	80	29	12.4
900	31	1,025	20.2	79	37	10.3
850	31	1,517	17.5	75	36	9.3
800	31	2,034	14.6	73	38	6.6
750	31	2,575	11.9	67	49	5.2
700	31	3,154	9.1	61	42	4.1
650	31	3,759	5.8	58	57	3.7
600	31	4,417	2.0	51	71	2.5
550	31	5,106	- 1.6	42	48	4.5
500	31	5,867	- 5.8	41	25	4.1
450	31	6,680	-10.8	34	15	4.9
400	31	7,581	-16.7	31	354	5.4
350	31	8,571	-23.5		330	7.8
300	31	9,680	-31.8		300	8.2
250	31	10,941	-42.2		279	10.5
200	31	12,409	-54.9		264	14.6
175	31	13,249	-61.8		256	15.5
150	31	14,186	-69.1		256	14.6
125	30	15,258	-75.5		276	8.0
100	30	16,535	-77.6		351	4.5
80	30	17,834	-72.2		88	5.4
70	30	18,634	-69.4		89	9.9
60	30	19,557	-65.6		82	12.2
50	30	20,676	-61.7		90	12.4
40	30	22,078	-56.3		99	11.8
30	28	23,930	-51.4		171	1.2
25	26	25,123	-48.9		253	3.7
20	25	26,594	-46.3		287	8.4
15	12	28,518	-43.2			
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TAMPA, FLA. — 1017 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	17.9	90	29	7.4
1000	31	154	20.3	77	36	12.0
950	31	592	19.3	64	47	14.2
900	31	1,062	16.1	66	47	10.7
850	31	1,546	13.3	61	38	7.4
800	31	2,055	10.8	52	31	7.6
750	31	2,591	8.6	39	26	7.2
700	31	3,159	5.9	33	8	8.0
650	31	3,760	3.1	26	344	8.9
600	31	4,408	- .5	21	334	9.3
550	31	5,089	- 4.7	23	319	11.5
500	31	5,842	- 9.6	22	310	13.0
450	31	6,640	-15.3	23	304	16.9
400	31	7,528	-21.8	23	296	20.0
350	31	8,497	-28.8	21	289	26.0
300	31	9,581	-37.0	24	286	34.4
250	31	10,818	-45.8		282	40.4
200	31	12,275	-53.8		274	43.9
175	31	13,124	-58.1		274	42.5
150	31	14,082	-63.2		275	38.3
125	31	15,189	-67.7		279	28.6
100	31	16,522	-69.9		288	20.0
80	31	17,858	-67.0		328	8.7
70	31	18,670	-65.4		50	3.1
60	31	19,609	-63.3		90	3.9
50	31	20,736	-60.4		74	4.5
40	31	22,135	-57.7		74	6.4
30	30	23,971	-53.2		80	7.0
25	29	25,155	-50.1		89	4.5
20	27	26,620	-46.6		286	1.2
15	19	28,541	-43.3		283	11.5
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* TATOOSH IS., WASH. — 1010 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	31	11.5	87	127	7.4
1000	30	114	11.3	81	126	8.4
950	30	540	9.2	74	188	12.6
900	30	988	6.1	79	201	15.2
850	30	1,454	3.1	81	210	16.3
800	30	1,943	.3	77	211	21.2
750	30	2,458	- 2.3	68	214	23.5
700	30	3,005	- 5.2	61	217	25.1
650	30	3,581	- 8.6	62	220	28.0
600	30	4,200	-12.6	53	220	29.9
550	30	4,854	-16.9	50	223	29.9
500	30	5,569	-21.7	50	221	36.5
450	30	6,331	-27.0	49	226	41.2
400	30	7,178	-32.6	44	228	49.3
350	30	8,107	-38.6	43	229	55.9
300	30	9,151	-45.6		231	58.1
250	30	10,348	-51.7		234	57.9
200	30	11,785	-54.3		240	52.8
175	29	12,640	-54.7		243	48.2
150	29	13,625	-55.2		239	43.3
125	27	14,791	-56.0		243	37.5
100	26	16,207	-55.9		241	29.1
80	26	17,626	-56.1		236	26.0
70	26	18,478	-56.2		234	21.6
60	26	19,454	-56.0		238	21.2
50	26	20,612	-56.3		241	17.5
40	25	22,024	-56.9		239	13.8
30	23	23,849	-56.1		256	10.1
25	22	25,010	-55.8		258	11.3
20	21	26,430	-55.3		277	8.7
15	18	28,273	-53.1		281	8.9
10	15	30,911	-50.3		276	14.8
7	11	33,285	-48.2		276	18.5
5	5	35,465	-45.7			

TOPEKA, KANS. — 986 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	13.7	78	170	3.7
1000	31	150				
950	31	590	18.8	50	211	12.8
900	31	1,052	18.0	47	231	18.1
850	31	1,539	15.4	46	242	16.7
800	31	2,050	12.1	45	250	13.4
750	31	2,585	8.3	43	254	12.6
700	31	3,154	4.3	41	260	12.8
650	31	3,750	.4	35	269	12.2
600	31	4,391	- 3.8	34	261	15.9
550	31	5,065	- 8.2	32	279	14.2
500	31	5,807	-12.8		281	18.1
450	31	6,596	-18.4		284	20.4
400	31	7,473	-24.8		284	24.1
350	31	8,430	-32.1		285	26.6
300	31	9,500	-40.5		287	28.9
250	31	10,719	-49.1		287	33.2
200	31	12,158	-55.8		292	34.8
175	30	13,009	-57.7		292	30.7
150	30	13,976	-60.1		294	28.7
125	30	15,103	-63.8		293	21.8
100	30	16,462	-65.6		295	17.1
80	30	17,824	-64.0		301	9.1
70	30	18,646	-63.1		317	5.2
60	30	19,595	-62.0		314	3.1
50	30	20,727	-60.5		322	2.9
40	30	22,124	-58.1		342	3.7
30	30	23,947	-55.7		307	5.1
25	30	25,114	-53.4		292	6.4
20	29	26,555	-50.6		298	9.7
15	22	28,465	-47.6		283	16.7
10	9	31,177	-45.6			
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‡ TRUK, CAROLINE IS. — 1009 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	2	28.1	81	258	6.2
1000	31	85	27.5	81	257	7.2
950	31	533	24.0	83	263	12.6
900	31	1,012	21.3	81	275	14.4
850	31	1,508	18.8	78	278	14.2
800	31	2,028	16.0	74	275	11.7
750	31	2,575	13.3	72	274	11.3
700	31	3,154	10.4	69	279	9.5
650	31	3,768	6.9	69	275	8.0
600	31	4,423	3.2	70	262	6.6
550	31	5,118	- .7	68	256	3.7
500	31	5,882	- 4.7	64	266	1.6
450	30	6,698	- 9.5	58	174	.8
400	30	7,604	-14.9	54	141	2.1
350	30	8,606	-21.4	46	114	4.7
300	30	9,725	-29.5	39	116	7.6
250	29	10,999	-39.7		94	11.8
200	29	12,484	-52.4		89	15.9
175	29	13,334	-59.7		84	19.6
150	29	14,279	-67.7		85	24.5
125	29	15,356	-74.9		85	24.7
100	29	16,637	-78.4		84	20.4
80	29	17,920	-73.4		94	22.0
70	29	18,710	-67.9		97	17.7
60	29	19,649	-63.0		117	6.6
50	29	20,782	-58.9		275	6.0
40	26	22,198	-54.7		277	15.9
30	25	24,055	-51.3		275	21.0
25	24	25,245	-49.5		274	20.6
20	21	26,715	-47.3		270	21.8
15	18	28,634	-44.4		270	19.6
10	10	31,340	-41.2			
7						
5						

TUCSON, ARIZ. — 925 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	789	16.5	50	151	6.2
1000	31	120				
950	31	565				
900	31	1,027	20.9	40	138	6.0
850	31	1,520	18.7	38	157	3.3
800	31	2,037	15.1	41	171	5.1
750	31	2,577	10.9	44	186	7.8
700	31	3,151	6.5	46	194	9.5
650	31	3,751	2.6	38	199	9.3
600	31	4,399	- .7		211	8.5
550	31	5,081	- 4.4		227	8.4
500	31	5,833	- 9.5		238	9.1
450	31	6,634	-15.2		251	10.3
400	31	7,520	-21.8		258	14.2
350	31	8,488	-29.4		262	18.8
300	31	9,570	-37.6		270	22.0
250	31	10,804	-46.6		273	26.8
200	31	12,255	-55.1		275	32.4
175	31	13,100	-59.0		271	28.6
150	31	14,058	-63.0		268	25.3
125	31	15,167	-67.6		263	19.8
100	31	16,499	-70.1		262	14.2
80	30	17,834	-67.6		257	3.5
70	30	18,653	-64.5		2	1.0
60	30	19,590	-62.5		54	2.1
50	30	20,721	-60.2		65	2.7
40	30	22,121	-57.8		67	3.5
30	29	23,950	-54.0		42	5.1
25	29	25,127	-51.5		31	2.5
20	29	26,584	-48.9		304	3.5
15	29	28,485	-46.2		281	9.1
10	25	31,209	-40.0		272	20.6
7	19	33,661	-36.1		265	31.1
5	9	36,001	-32.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

OCTOBER 1963

Standard pressure surface (mb)	* WAKE IS., PACIFIC AREA 1011 MB						WALLOPS IS., VA., NASA 1019 MB						WASHINGTON, D. C. 1011 MB						WINNEMUCCA, NEV. 870 MB						WINSLOW, ARIZ. 855 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	5	27.2	79	84	7.6	15	3	12.8		2	6.6	31	84	6.2	88	356	1.7	31	1,310	6.6	65	114	1.4	31	1,492	9.7	66	153	2.7
1,000	31	100	26.4	80	87	9.3	15	163	14.9		24	4.7	31	179	12.8	71	335	2.7	31	150					31	162				
950	31	549	22.7	86	95	13.8	15	595	13.5		13	9.5	31	616	14.0	50	342	9.1	31	579					31	598				
900	31	1,022	19.7	82	97	13.8	15	1,051	11.5		26	9.1	31	1,066	11.9	43	347	10.7	31	1,033					31	1,056				
850	31	1,514	17.1	75	104	12.4	15	1,527	9.7		21	7.8	31	1,542	9.6	41	346	11.3	31	1,508	12.0	48	140	1.6	31	1,538	10.9	59	152	3.3
800	31	2,031	14.8	65	104	10.1	15	2,029	7.4		9	8.5	31	2,043	7.0	40	347	10.9	31	2,014	10.4	43	216	6.0	31	2,049	13.9	41	209	6.2
750	31	2,574	12.7	54	105	8.5	15	2,552	4.6		360	9.5	31	2,570	4.2	38	345	11.5	31	2,545	6.8	44	230	10.7	31	2,587	10.2	44	212	9.5
700	31	3,154	9.8	47	102	8.4	15	3,117	1.6		353	9.5	31	3,129	1.4	33	337	12.0	31	3,112	3.0	45	230	14.2	31	3,159	6.2	44	216	11.7
650	31	3,764	6.6	39	106	7.0	15	3,707	- 1.8		343	9.9	31	3,722	- 2.0		330	14.0	31	3,708	- .6	42	228	17.7	31	3,758	2.1	43	212	12.0
600	31	4,420	2.9	39	93	6.2	15	4,343	- 5.7		335	10.3	31	4,354	- 5.6		322	13.8	31	4,345	- 4.8	41	230	19.2	31	4,404	- 2.0	40	222	10.1
550	31	5,115	- 1.4	45	84	6.2	15	5,023	- 9.7		331	9.5	31	5,028	- 9.7		320	15.2	31	5,016	- 9.1	40	229	21.8	31	5,085	- 5.7	33	229	9.9
500	31	5,875	- 5.6	41	77	4.5	15	5,751	-14.3		321	9.7	31	5,761	-14.2		316	16.5	31	5,755	-13.8	37	239	24.9	31	5,831	-10.6		239	11.3
450	30	6,690	-10.6	35	64	4.5	15	6,536	-20.1		326	9.9	31	6,547	-19.9		313	18.6	31	6,542	-19.3	35	240	25.6	31	6,628	-16.5		243	13.4
400	30	7,591	-16.7	32	37	5.1	15	7,406	-26.7		328	8.7	31	7,414	-26.5		314	20.2	31	7,413	-25.4	34	239	27.2	31	7,508	-23.0		251	17.3
350	30	8,581	-23.5	32	333	4.1	15	8,356	-33.9		330	8.4	30	8,360	-34.0		305	15.2	31	8,367	-32.8		240	28.2	31	8,471	-30.3		263	18.8
300	30	9,688	-32.0	34	306	6.4	15	9,416	-42.1		319	11.5	30	9,421	-42.0		303	17.1	31	9,433	-41.1		246	30.1	31	9,549	-38.4		267	24.5
250	30	10,950	-41.6		300	10.7	15	10,629	-49.9		306	12.4	30	10,633	-50.2		293	20.4	31	10,648	-49.7		247	32.1	31	10,779	-47.2		271	28.9
200	30	12,425	-53.5		304	11.5	15	12,068	-54.7		290	22.9	30	12,066	-56.3		289	23.9	31	12,083	-56.5		249	37.1	31	12,224	-55.8		271	33.4
175	30	13,271	-60.1		315	12.2	15	12,919	-56.5		280	19.2	30	12,912	-57.3		285	23.9	31	12,926	-58.3		248	37.9	31	13,069	-58.7		268	31.9
150	30	14,216	-67.2		343	10.3	15	13,892	-58.4		286	19.6	30	13,884	-58.4		280	24.9	31	13,891	-60.1		244	36.3	31	14,029	-62.0		267	29.5
125	29	15,298	-73.4		16	14.0	15	15,031	-61.1		293	17.5	30	15,021	-61.4		283	22.1	31	15,022	-62.6		246	30.9	31	15,144	-66.3		258	24.1
100	27	16,588	-77.1		55	15.5	15	16,411	-62.5		296	12.6	30	16,398	-62.8		282	18.6	31	16,393	-63.1		243	22.9	31	16,486	-68.7		263	15.3
80	24	17,874	-73.6		74	18.1	15	17,790	-62.0		311	6.8	30	17,775	-61.8		291	10.9	30	17,764	-62.7		240	14.8	31	17,827	-66.9		262	7.0
70	24	18,860	-70.1		79	18.5	15	18,621	-61.4		336	2.7	30	18,614	-61.0		290	8.4	30	18,597	-61.1		246	10.3	31	18,650	-64.8		287	1.4
60	23	19,586	-66.1		82	19.2	15	19,576	-60.1		329	2.5	30	19,562	-60.2		286	7.0	30	19,549	-60.2		243	7.0	31	19,585	-62.4		341	1.2
50	23	20,700	-62.6		86	17.9	14	20,711	-59.3		332	2.7	30	20,702	-58.9		295	3.9	28	20,690	-59.4		273	4.9	31	20,715	-60.4		23	1.6
40	23	22,089	-58.3		82	13.6	14	22,113	-57.7		10	2.3	29	22,105	-57.3		305	4.1	28	22,091	-57.8		287	3.7	31	22,114	-58.3		339	2.5
30	23	23,918	-54.1		69	10.5	13	23,948	-54.9		336	4.7	28	23,942	-54.5		311	4.5	26	23,916	-56.2		268	4.5	31	23,936	-55.6		338	2.7
25	23	25,097	-50.2		78	8.2	13	25,117	-53.6		295	6.2	26	25,106	-53.1		299	5.6	26	25,078	-54.8		273	7.4	29	25,108	-53.5		314	3.5
20	22	26,565	-46.9		81	3.7	12	26,551	-52.0		291	11.7	25	26,543	-51.4		296	6.8	25	26,510	-52.9		270	11.7	27	26,551	-51.5		282	6.2
15	22	28,482	-44.0		157	3.1	12	28,429	-48.4		281	19.2	16	28,364	-50.0				18	28,373	-50.2		263	17.3	22	28,439	-48.1		267	12.0
10	18	31,228	-40.4		318	1.9	9	31,154	-44.2				6	31,023	-45.8										12	31,111	-45.4			
7	17	33,680	-36.5		74	10.1	5	33,693	-39.4																					
5	14	36,044	-31.5		155	3.7																								

Standard pressure surface (mb)	YAKUTAT, ALASKA 995 MB						‡ YAP, CAROLINE IS. 1007 MB						YUCCA FLAT, NEV. 883 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	12	4.9	90	104	4.7	31	17	27.9	85	263	5.8	31	1,196	8.3	70	313	1.4
1000	31	- 26			114	4.9	31	78	27.3	84	261	8.0	31	149				
950	31	390	5.5	74	121	11.3	31	521	24.0	83	277	14.2	31	580				
900	31	833	2.6	72	134	13.2	31	1,004	21.0	80	277	15.0	31	1,036				
850	31	1,293	- .5	75	144	15.0	31	1,499	18.2	77	272	14.4	31	1,519	14.9	47	211	.8
800	31	1,776	- 3.3	76	147	16.9	31	2,018	15.8	69	273	13.2	31	2,030	12.3	43	170	4.3
750	31	2,278	- 6.6	73	153	20.4	31	2,562	13.3	64	270	12.4	31	2,562	9.0	40	185	9.7
700	31	2,820	-10.0	73	160	18.6	31	3,144	10.3	62	272	10.7	30	3,135	5.3	42	195	10.9
650	31	3,384	-13.7	72	168	18.1	31	3,754	6.9	59	270	11.3	30	3,729	1.3	42	208	12.4
600	31	3,993	-17.8	69	168	16.7	31	4,412	3.2	56	275	9.9	30	4,375	- 2.8	38	220	12.8
550	31	4,633	-22.3	65	172	18.1	31	5,105	- .8	54	267	7.6	30	5,050	- 7.4	37	232	13.2
500	31	5,333	-27.2	60	177	18.8	31	5,870	- 4.9	50	267	6.0	30	5,795	-12.5	31	233	13.8
450	31	6,074	-32.7	55	184	17.9	31	6,688	- 9.5	44	272	3.9	30	6,587	-17.5		240	15.5
400	31	6,905	-39.0		190	19.0	31	7,595	-15.2	36	268	2.1	30	7,465	-23.7		248	17.7
350	31	7,808	-45.5		199	18.5	31	8,591	-21.9	35	144	1.4	30	8,426	-31.1		248	21.4
300	31	8,821	-51.6		199	16.7	30	9,706	-30.3		90	4.7	30	9,500	-39.3		247	26.2
250	31	9,995	-53.8		211	15.9	30	10,976	-40.4		82	10.3	30	10,725	-48.0		255	29.1
200	31	11,436	-51.4		224	18.3	30	12,456	-53.0		87	17.1	29	12,167	-56.0		253	34.6
175	31	12,304	-51.0		233	18.1	30	13,304	-60.3		87	20.4	29	13,010	-59.0		252	34.2
150	31	13,307	-50.9		239	18.6	30	14,247	-67.9		89	26.4	29	13,970	-61.6		247	32.4
125	28	14,480	-50.5		237	22.1	30	15,322	-75.2		87	26.8	29	15,090	-65.0		251	29.1
100	27	15,938	-50.5		242	24.1	30	16,597	-80.2		82	27.4	28	16,441	-67.1		248	19.8
80	27	17,391	-51.0		245	21.8	28	17,872	-73.8		86	24.3	28	17,794	-65.4		249	11.1
70	27	18,257	-51.5		247	21.2	28	18,660	-69.5		90	19.0	28	18,614	-63.4		256	7.2
60	27	19,257	-52.0		249	20.2	28	19,593	-63.7		90	7.2	28	19,561	-61.7		257	4.1
50	27	20,437	-52.2		254	21.8	28	20,725	-58.8		270	6.0	27	20,695	-59.9		266	3.5
40	27	21,880	-52.5		254	22.3	28	22,137	-55.4		267	12.6	27	22,093	-58.3		277	2.7
30	27	23,735	-53.2		259	23.3	28	23,988	-51.5		264	16.3	27	23,914	-55.5		292	3.9
25	27	24,909	-53.2		261	22.5	25	25,182	-49.4		264	15.7	26	25,083	-53.8		280	5.6
20	24	26,370	-53.1		265	26.8	24	26,651	-46.6		256	15.5	21	26,525	-51.9		274	9.3
15	20	28,235	-52.4		280	28.4	17	28,563	-44.2		238	15.7	18	28,398	-49.2		265	18.1
10	14	30,829	-52.4				12	31,297	-39.5				10	31,066	-47.3			
7	5	33,120	-50.9															

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average station pressure for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be observed for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure surface for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 10 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

‡ Observations for these stations are scheduled at 0000 G.C.T.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. OCTOBER 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Oct.									
1	0.81	0.91	1.04	1.20	1.33	1.35	1.30	1.26	1.26
2	.79	.88	1.02	1.16	1.32	1.14	.99	.92	.77
3	.78	.87	1.00	1.15	1.28	1.10	.88	.73	.63
4	.83	.93	1.04	1.21	1.37	1.17	1.00	.89	.78
5	.90	1.03	1.13	1.27	1.41	1.29	1.13	1.01	.89
6	.87	.99	1.10	1.25	1.36	1.23	1.03	.91	.81
7	.82	.93	1.05	1.18	1.33	1.18	.98	.85	.75
8	.80	.92	1.03	1.18	1.34	1.18	1.03	.92	.81
12	.66	.79	.89	----	----	----	----	----	----
13	.78	.95	1.06	1.22	----	----	----	----	----
14	1.01	1.12	1.21	1.34	1.40	1.29	1.13	1.05	.91
15					Inoperative				
16				----	1.20	.87	----	----	----
17	.71	.84	.95	1.13	1.24	----	----	----	----
20	.86	.99	1.08	----	1.32	----	----	----	----
21	.80	.92	1.03	1.18	----	1.15	.99	.84	.72
22	.81	.94	1.03	1.18	----	1.21	1.04	.91	.79
23	----	----	----	----	----	----	----	.95	----
24	----	----	----	----	----	----	1.05	.97	.86
25	.89	1.01	1.11	1.24	1.30	1.23	1.11	.99	.85
26	.91	1.03	1.15	1.26	1.34	1.28	----	----	.90
27	----	----	----	----	1.35	----	----	----	----
28	.76	.85	1.05	1.20	1.25	1.17	----	----	----
29	----	----	----	----	1.22	1.12	.93	.78	.71
Averages	0.81	0.93	1.04	1.20	1.32	1.19	1.04	0.93	0.83

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Oct.									
1	0.94	1.05	1.16	1.30	1.37	1.28	1.11	0.95	0.82
2	----	----	----	1.04	1.23	1.06	.84	.76	.57
4	.83	.91	----	----	1.36	1.25	1.10	.99	.89
5	.94	1.03	1.11	1.25	1.34	1.20	1.01	.84	.66
6	.94	1.03	1.13	1.28	1.36	1.20	.99	.88	.78
7	----	----	----	1.03	1.18	1.05	----	----	----
10	.75	1.01	1.13	1.25	1.32	1.17	.96	.82	.72
11	.65	.77	.88	----	----	----	----	----	----
12	.95	1.04	1.13	1.29	1.36	1.30	1.16	.99	.89
13	.95	1.04	1.15	1.30	1.34	1.25	1.12	.98	.88
14	.93	.99	1.08	1.21	1.27	1.16	.91	.76	.64
15	.59	.68	.83	1.01	1.13	1.01	.81	.67	.56
16	.79	.90	1.01	1.18	1.24	1.12	.96	.79	.70
17	.36	.46	.58	.81	.95	.82	.63	.50	.41
18	----	----	----	----	----	.82	.65	.50	.42
19	.33	.44	.55	.76	----	----	----	----	----
23	----	----	----	.76	.84	.77	.56	.43	.36
25	.55	.67	.81	.90	----	----	----	----	----
26	----	----	----	.98	1.01	.89	.69	.57	.43
31	.96	1.05	1.16	1.29	1.30	1.23	.94	.77	.62
Averages	0.76	0.87	0.98	1.10	1.23	1.09	0.90	0.76	0.65

OMAHA, NEBR.

	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Oct.									
1	HS0.89	HS0.97	HS1.11	HS1.24	HS1.33	HS1.11	----	----	----
2	HM .67	HM .78	HM .86	HM1.06	----	----	----	----	----
3	HS .89	HS .98	HS1.13	HS1.21	HS1.32	HS1.17	----	HS0.88	HS0.77
4	----	----	----	----	HM1.23	HS1.09	HS0.91	HM .77	HM .64
5	----	HS .86	HS .99	HS1.15	HS1.24	----	----	----	----
6	----	HM .86	HM1.00	HM1.22	HM1.32	HS1.13	HS .94	HM .84	HM .74
7	----	HM .71	HM .84	HM .99	----	----	----	----	----
8	----	HS .90	HS1.01	HS1.13	HS1.23	----	----	----	----
9	HM .63	M .78	HS .92	HS1.13	HS1.25	HS1.11	M .92	M .84	M .73
11	----	HI .74	----	----	HM1.15	----	----	----	----
12	----	HS .67	HS .83	HM .86	HM1.12	HM .88	HM .69	‡	HM .38
13	----	----	HM .73	HM .92	HM1.01	HM .87	HM .71	‡	HM .46
15	----	----	HS .82	HM .95	HM1.00	----	----	----	----
16	----	----	----	----	HM1.01	----	----	----	----
18	HI .44	HI .57	HI .69	HI1.17	HI1.06	----	----	----	----
22	----	HI .82	HM1.00	HM1.15	HM1.28	HS1.17	HS1.00	HM .86	----
23	HM .69	M .80	HM .94	HM1.10	HM1.13	----	----	----	----
25	HM .84	HM .97	HS1.10	----	----	HS1.21	HS1.02	HM .85	HM .70
28	HS .92	HS1.01	HS1.14	HS1.31	HS1.33	HS1.30	HS1.13	HS1.01	HS .86
29	----	HM .63	----	----	----	----	----	----	----
Averages	0.75	0.84	0.94	1.16	1.19	1.10	0.92	0.86	0.66

* Values corresponding to true solar noon
‡ Pole shadow
S Slight haze - indeterminable
M Moderate haze - indeterminable
H Haze
HS Slight haze
HI Intense haze
HM Moderate haze

MADISON, WIS.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Oct.									
1	----	----	----	1.14	1.25	1.09	0.88	0.75	0.63
5	M 0.58	M 0.69	M 0.84	M 1.04	M 1.14	M .96	M .74	M .61	M .51
9	----	----	----	----	M 1.11	M .98	M .88	M .62	M .54
10	H .52	H .58	----	----	----	----	----	----	----
11	----	----	----	----	M 1.05	M 1.01	M .96	----	----
13	----	----	----	----	M 1.27	M 1.16	----	----	----
14	M .64	M .77	M .83	M 1.02	M 1.21	----	----	----	----
Averages	0.58	0.68	0.84	1.07	1.17	1.04	0.87	0.66	0.56

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Oct.									
1	0.72	0.85	0.97	1.12	----	1.05	0.88	0.71	0.61
2	.69	.79	.90	1.08	----	----	1.01	.89	.76
3	.73	1.08	----	1.28	----	----	----	1.01	.91
4	.91	1.00	1.11	----	----	----	----	.94	.80
5	----	.81	.97	1.15	----	----	1.03	.89	.78
6	.75	.84	.97	----	----	1.12	.92	.76	.66
7	.85	.96	1.04	----	----	1.16	1.01	.84	.75
8	.89	.94	1.07	----	----	1.05	.89	.79	.71
10-11				Pyrheliometer Inoperative					
12	----	----	----	----	----	----	1.05	.96	.86
13	----	----	----	----	----	1.32	1.17	1.06	.97
14	----	----	----	----	----	----	1.12	.99	.87
15	.73	.83	----	1.08	----	----	----	.69	.55
17	.89	.99	----	----	----	----	----	----	----
20	.88	.99	1.11	1.27	----	1.24	1.10	.99	.90
21	.78	----	1.02	1.16	----	1.07	.90	.77	----
22	----	----	1.01	1.21	----	----	----	----	----
23	.88	----	1.10	----	----	----	----	----	----
24	----	----	----	----	----	----	----	.90	.79
25	.83	.94	1.06	----	----	----	----	.91	.82
26	.81	.90	1.03	1.21	----	----	.98	.81	.71
27	.81	----	1.05	1.21	----	----	----	----	----
Averages	0.81	0.92	1.03	1.18	----	1.14	1.00	0.88	0.78

MAUNA LOA OBS., HAWAII

	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Oct.									
1	1.09	1.18	1.25	1.37	----	1.39	1.27	1.17	1.08
2	1.12	1.20	1.31	1.44	----	----	----	----	----
3	----	----	1.27	1.40	----	----	----	----	----
5	----	----	----	1.34	----	----	----	1.08	1.01
6	----	----	----	----	1.52	1.36	1.22	----	----
7	.97	1.07	1.20	1.34	1.50	1.35	1.21	1.10	1.01
8	.99	1.09	1.21	1.35	1.49	----	----	----	----
9	1.02	1.12	1.25	1.38	1.52	1.34	1.20	1.08	.99
10	1.04	1.14	1.26	1.40	----	----	----	----	----
11	1.08	1.17	1.28	1.40	1.54	----	----	----	----
12	1.08	1.17	1.27	1.40	1.55	1.42	1.30	1.19	1.10
13	1.11	1.19	1.30	1.43	----	----	----	----	----
14	1.19	1.26	1.36	1.47	1.60	----	1.32	1.24	1.17
15	1.23	1.31	1.40	1.50	----	----	----	----	----
17	----	----	----	----	1.56	----	----	----	----
18	1.17	1.26	1.35	1.47	HS1.60	----	----	----	----
22	1.11	1.20	1.30	1.40	HS1.54	HS1.40	HS1.28	HS1.19	HS1.10
23	----	----	----	----	HS1.61	HS1.46	HS1.35	HS1.25	HS1.19
24	1.20	1.29	1.40	1.52	1.64	----	----	----	----
25	1.16	1.23	1.34	1.44	----	----	----	----	----
26	1.18	1.26	1.34	1.46	----	----	----	----	----
27	1.18	1.25	1.35	1.43	----	----	----	----	----
30	HS1.12	HS1.20	HS1.32	HS1.44	HS1.54	----	----	----	----
31	----	----	----	HS1.44	HS1.52	----	----	----	----
Averages	1.11	1.20	1.30	1.42	1.55	1.39	1.27	1.16	1.08

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
Oct.									
25	S 0.62	S 0.68	M 0.85	M 1.13	----	----	----	----	----
		All Other Days Cloudy							

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63 of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

OCTOBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	563	544	551	514	559	536	519	516	523	452	362	463	511	---	492	458	456	386	223	294	454	454	382	442	444	438	428	425	403	181	56	434
AMES IOWA	423	422	440	400	411	410	388	384	341	294	334	372	356	334	347	149	184	217	230	217	181	318	322	266	339	278	289	339	296	257	129	312
APALACHICOLA FLORIDA	---	---	522	509	499	513	536	532	494	394	528	492	454	464	452	501	488	484	456	455	452	448	396	177	264	431	404	364	486	473	449	452
ARGONNE NAT. LAB.	458	413	411	435	409	400	395	339	378	364	269	401	410	405	334	287	258	168	126	233	252	312	311	278	197	301	207	282	305	205	45	309
ASTORIA OREGON	443	344	---	174	290	275	309	168	138	117	132	21	45	74	263	251	79	252	---	44	80	100	123	101	199	173	57	206	153	190	185	172
ATLANTA GEORGIA	513	462	479	492	518	531	507	500	466	485	463	452	423	461	485	482	478	446	420	430	414	406	154	184	327	393	338	377	435	417	395	430
BARROW ALASKA	64	82	35	46	45	35	42	---	43	76	69	66	32	46	27	23	21	19	28	42	22	31	39	12	8	7	9	14	62	46	18	37
BETHEL ALASKA	193	241	77	108	43	67	137	123	64	179	219	---	---	148	116	178	133	83	81	62	81	118	107	167	95	162	187	69	92	82	62	120
BISMARCK N.DAK.	384	396	370	375	321	265	364	383	320	312	366	323	285	157	283	291	296	309	234	36	105	300	295	307	275	305	261	276	121	191	277	283
BLUE HILL MASS.	472	408	372	400	447	437	379	229	389	423	378	437	425	404	373	391	344	324	301	203	300	268	310	298	318	305	296	53	26	101	332	327
BOISE IDAHO	442	401	401	224	167	236	377	348	---	386	300	113	345	317	374	377	372	267	277	270	167	143	276	121	150	351	321	217	129	117	277	275
BOSTON MASSACHUSETTS	442	421	375	415	445	435	388	255	382	358	360	424	402	384	345	365	326	299	279	193	277	198	301	217	284	292	300	45	35	90	307	311
BROWNSVILLE TEXAS	522	502	213	343	491	354	386	466	481	502	506	452	340	378	435	439	408	452	351	404	129	361	243	312	389	268	155	309	244	436	439	378
BURLINGTON VERMONT	460	421	196	232	418	386	316	318	415	342	148	411	378	357	---	321	316	297	306	284	209	310	262	244	292	249	171	286	102	56	227	291
CANTON ISLAND P.I.	571	539	673	665	656	665	625	616	648	664	656	582	559	590	676*	605	---	647	663	680	576	665	474	674	374	643	688	660	611	463	515	611*
CAPE HATTERAS N.C.	472	469	470	471	479	470	459	461	369	443	460	399	472	476	471	465	434	349	375	240	181	314	354	248	175	126	78	183	58	412	392	362
CARIBOU MAINE	420	384	237	103	353	86	190	267	393	222	129	37	350	190	316	224	342	225	268	256	263	322	184	---	229	225	133	237	23	75	228	230
CHARLESTON S.C.	394	368	448	437	474	466	423	450	367	460	455	392	373	424	439	424	419	398	397	387	402	197	175	85	38	---	343	260	365	371	---	367
CLEVELAND OHIO	379	360	173	365	373	338	327	308	312	330	251	342	333	319	310	253	267	287	195	264	225	247	239	---	212	240	91	172	169	203	32	264
COLUMBIA MISSOURI	484	455	480	462	433	435	414	410	359	349	376	377	391	381	369	268	307	204	353	335	366	312	265	265	280	306	128	374	319	301	80	343
CORVALLIS OREGON	374	424	345	130	242	385	352	329	214	227	216	141	173	167	305	304	73	387	270	64	111	70	182	92	---	---	---	---	232	235	142	229
DAVIS CALIFORNIA	488	477	463	439	171	456	446	336	437	418	403	466	453	367	120	434	269	379	343	252	389	398	416	287	380	403	400	383	157	322	383	372
DODGE CITY KANSAS	481	472	469	471	473	471	447	446	431	417	427	411	421	390	296	352	265	392	249	167	384	385	357	342	---	379	93	403	300	339	245	373
E. LANSING MICHIGAN	459	353	244	434	444	400	390	230	416	403	330	316	421	417	389	268	339	214	73	241	121	322	325	235	257	318	214	273	281	293	96	305
EL CENTRO CALIF. NPF	444	442	427	437	455	432	445	432	384	343	439	443	439	434	420	339	---	---	221	350	374	381	371	375	377	344	295	293	324	231	254	377
EL PASO TEXAS	592	607	591	592	578	579	568	554	548	546	412*	528	463	506	482	418	512	203	354	506	500	475*	482	500	488	491	481	451	389	312	351	486*
ELY NEVADA	481	470	489	352	489	465	483	333	462	465	357	124	467	456*	---	434	327	348	393	344	405	407	249*	411	402	373	409	229	349	237	---	387*
EPPLEY,NEWPORT R.I.	454	385	242	417	435	427	384	280	373	399	370	409	401	386	356	367	320	314	313	176	289	320	246	279	272	250	268	115	---	168	302	324
FAIRBANKS ALASKA	39	186	37	57	122	58	96	50	22	83	99	99	106	122	---	63	62	---	83	117	47	39	---	35	58	91	113	86	---	74	50	78
FLAMING GORGE UTAH	416	454	375	---	---	---	---	421	271	439	428	---	---	---	425	417	414	347	156	187	394	383	173	395	376	318	377	251	---	185	214	340
FORT WORTH TEXAS	528	507	491	475	467	468	478	465	461	469	488	454	440	376	367*	406	428	405	323	278	388	370	167	233	373	364	370	380	404	391	345	405*
FRESNO CALIFORNIA	454	446	442	341	436	421	431	193	448	450	331	445	434	434	260	69	246	373	369	227	371	367	302	379	350	345	292	273	327	356	346	353
GAINESVILLE FLORIDA	514	500	510	522	439	381	455	480	575	445	481	535	450	436	210	233	237	354	207	475	474	473	158	206	314	474	400	465	440	491	440	412
GLASGOW MONTANA	361	392	317	327	269	118	371	357	211	329	344	302	267	323	331	328	319	301	171	224	236	131	93	294	---	298	290	140	125	159	272	267
GRAND JUNCTION COLO.	525	508	500	459	315	496	486	488	371	421	442	370	460	451	441	450	416	364	224	119	400	408	206	389	403	400	402	303	257	338	220	388
GREAT FALLS MONTANA	325	370	268	221	119	193	353	293	56	316	315	244	299	307	304	302	301	241	114	282	176	197	104	260	281	286	254	231	157	203	226	245
GREENSBORO N.C.	518	512	476	526	516	514	498	472	487	490	457	347	465	468	455	469	439	406	397	391	414	115	64	271	177	372	353	205	344	413	382	400
INDIANAPOLIS INDIANA	489	460	480	452	477	445	450	442	447	443	347	460	437	418	392	356	---	378	129	232	312	339	295	233	147	270	219	340	363	294	88	354
LAKE CHARLES LA.	534	509	486	368	195	383	440	414	466	465	434	429	414	411	358	468	457	451	436	425	413	366	323	293	391	340	304	378	462	417	413	408
LAKELAND FLORIDA	487	263	467	511	489	467	500*	519	530	451	523	520*	517	408	407	472	388	425	385	521	492	487	284	410	428	472	448	424	484	495	490*	457*
LANDER WYOMING	446	464	455	401	328	446	456	373	331	442	432	320	396	414	416	419	417	417	178	240	399	389	177	405	384	322	391	296	240	96	353	363
LARAMIE WYOMING	329	442	434	386	376	415	357	376	268	386	339	278	134	354	375	367	370	371	200	31	363	348	292	321	313	158	303	311	156	301	145	310
LAS VEGAS NEVADA	522	498	462	311	508	512	506	403	477	487	472	491	481	477	468	225	228	145	163	340	426	423	357	412	413	395	373	243	402	353	410	399
LITTLE ROCK ARKANSAS	462	416	420	423	436	391	374	379	394	375	371	372	353	306	305	217	277	304	332	333	313	301	255	222	294	291	276	272	357	319	273	336
LOS ANGELES CALIF.WB	425	162	225	177*	381	485	481	335	463	468	443	465	461	434	232	425	288	262	319	367	405*	344*	312*	389	386	301	274	326	374	297	365	357*
LOS ANGELES CALIF.CO	424	186	254	162	455	503	461	356	444	479	447	495	460	428	233	388	298	270	215	277	406	354	356	377	400	329	307	284	378	323	370	359
MANHATTAN KANSAS	539	518	514	498	500	506	468	431	413	408	404	385	373	379	324	345	341	356	345	18	331	332	271	213	285	332	98	363	263	326	188	357
MATANUSKA ALASKA	110	198	---	227	115	28	64	120	124	119	190	71	127	100	53	57	66	146	20	93	151	46	117	112	80	64	98	128	65	75	75	101
MAUNA LOA OB.HAWAII	734	454	420	329	721	620	689	533	---	648	633	688	691	681	592	574	622	676	368	491	256	648	668	676	391	461	633	590	581	637	643	578
MEDFORD OREGON	443*	404*	211	150*	116	---	347	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	261	209	200	246	266	71	261	268	304	---
MIAMI FLORIDA	182	409	405	480	390	200	345	514	399	572	361	541	470	488	498	215	440	402	521	498	546	509	461	478	366	285	421	276	411	443	476	419
MIDLAND TEXAS	545	533	517	510	511	482	480	471	470	477	433	475	440	375	381	405	317	408	193	329	335	297	315	380	367	398	403	297	285	397	222	402
NASHVILLE TENNESSEE	407	408	440	486	439	452	462	401	471	412	381	343	398	389	381	421	411	398	387	357	333	350	289	248	251	324	315	251	380	325	297	374
NORTH OMAHA NEBRASKA	489	462	475	463	459	462	448	434	448	284	413	406	395	369	386	316	280	376	348	123	273	379	352	---	366	355	357	386	313	317	149	369
OAK RIDGE TENNESSEE	417	409	396	443	413	395	389	359	411	410	351	254	388	354	350	357	361	356	348	336	315	301	327	327	314	283	289	157	345	329	292	348

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

OCTOBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
OKLAHOMA CITY OKLA.	506	482	468	459	443	448	453	438	443	403	404	399	415	362	358	296	380	354	283	191	233	357	---	328	370	370	331	368	351	356	229	376
PAGE ARIZONA	458	451	449	450	413	434	428	403	367	388	417	336	420	417	414	372	266	164	113	267	373	362	223	361	367	362	353	270	333	327	335	358
PHOENIX ARIZONA	495	481	521	496	432	485	491	491	---	408	359	485	492	485	474	350	469	383	427	454	446	434	428	431	442	427	405	348	387	256	380	435
PORTLAND MAINE	461	409	335	431	425	405	366	362	419	389	349	318	394	363	406	332	332	306	296	214	213	151	282	280	282	282	279	38	33	65	266	306
RAPID CITY S.DAK.	364	404	395	384	332	372	323	384	302	301	350	318	309	217	328	308	327	338	241	35	300	310	297	279	307	149	290	319	263	68	300	297
RIVERSIDE CALIFORNIA	438	334	311	450	513	535	528	441	495	487	520	530	523	515	210	69	351	347	156	276	462	423	440	437	464	404	375	347	408	398	444	408
SAINT CLOUD MINN.	396	421	421	387	388	364	360	383	375	138	387	376	329	279	284	304	54	82	196	36	20	246	290	180	308	175	311	266	277	263	230	275
SALT LAKE CITY UTAH	488	432	468	426	363	488	479	434	345	458	457	404	193	447	450	435	418	415	104	306	401	346	52	362	345	341	388	247	271	73	331	360
SAN ANTONIO TEXAS	561	563	558	544	494	520	410	482	514	536	521	501	468	401	448	474	386	344	185	325	296	282	307	234	355	375	313	410	451	371	418	421
SANTA MARIA CALIF.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SAULT STE MARIE MICH	429	364	352	423	400	299	168	224	342	259	326	395	324	300	299	283	259	261	169	186	284	105	246	198	48	162	273	264	269	81	128	262
SEATTLE TACOMA WASH.	392	288	144	233	110	356	304	265	146	198	165	177	98	126	242	258	54	216	214	40	106	111	126	123	191	202	122	164	157	97	210	182
SHREVEPORT LOUISIANA	504	476	468	453	450	337	430	433	419	429	423	428	407	389	324	254	404	315	385	405	391	322	271	345	281	296	312	329	411	381	355	381
SPOKANE WASHINGTON	415	370	283	59	139	264	310	294	268	343	266	337	254	259	235	316	304	321	309	136	101	25	232	126	274	241	174	53	268	174	191	237
STATE COLLEGE PENN.	457	445	238	482	466	449	366	288	443	410	381	432	432	424	401	355	257	309	327	322	313	63	291	325	341	269	241	309	254	295	89	338
STERLING VIRGINA	474	476	377	506	485	468	432	260	463	450	422	444	446	440	418	384	353	352	356	344	346	54	282	---	334	207	277	132	256	372	258	362
STILLWATER OKLAHOMA	521	505	492	487	476*	469	487	472	474	447	442	431	432	414	371	187	395	416	341	116	305	392	346	263	381	392	373	410	328	373	158	390*
SWAN ISLAND W.I.	346	533	412	583	491	567	500	480	545	150	404	500	536	575	562	574	567	370	536	552	557	552	544	323	483	435	353	339	111	---	278	459
TAMPA FLORIDA	470	337	459	504	464	487	463	517	540	469	486	513	491	449	420	411	437	449	387	494	---	470	326	---	---	431	454	422	472	482	418	454
TUCSON ARIZONA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont., during the month OCTOBER 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	192	191	158	160	74	107	174	152	64	141	141	124	33	124	116	121	111	112	103	79	88	76	-44	68	-38	33	23	82	86	-66	65	92

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

These data are of an experimental nature and are published as received from the Huntley Exp. Station. The instrument with which they were measured has not been checked by the Weather Bureau.

TOTAL OZONE DATA

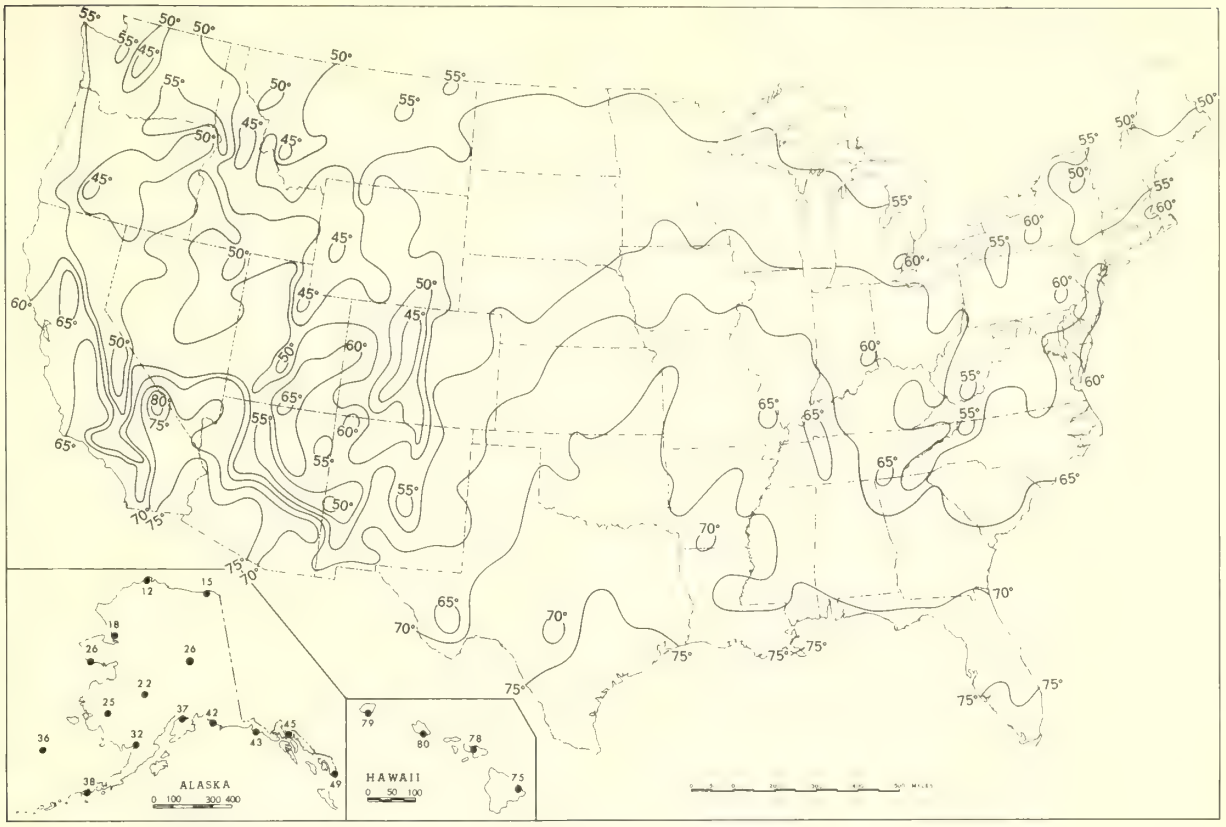
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $\lambda S \Omega \Omega \Omega$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

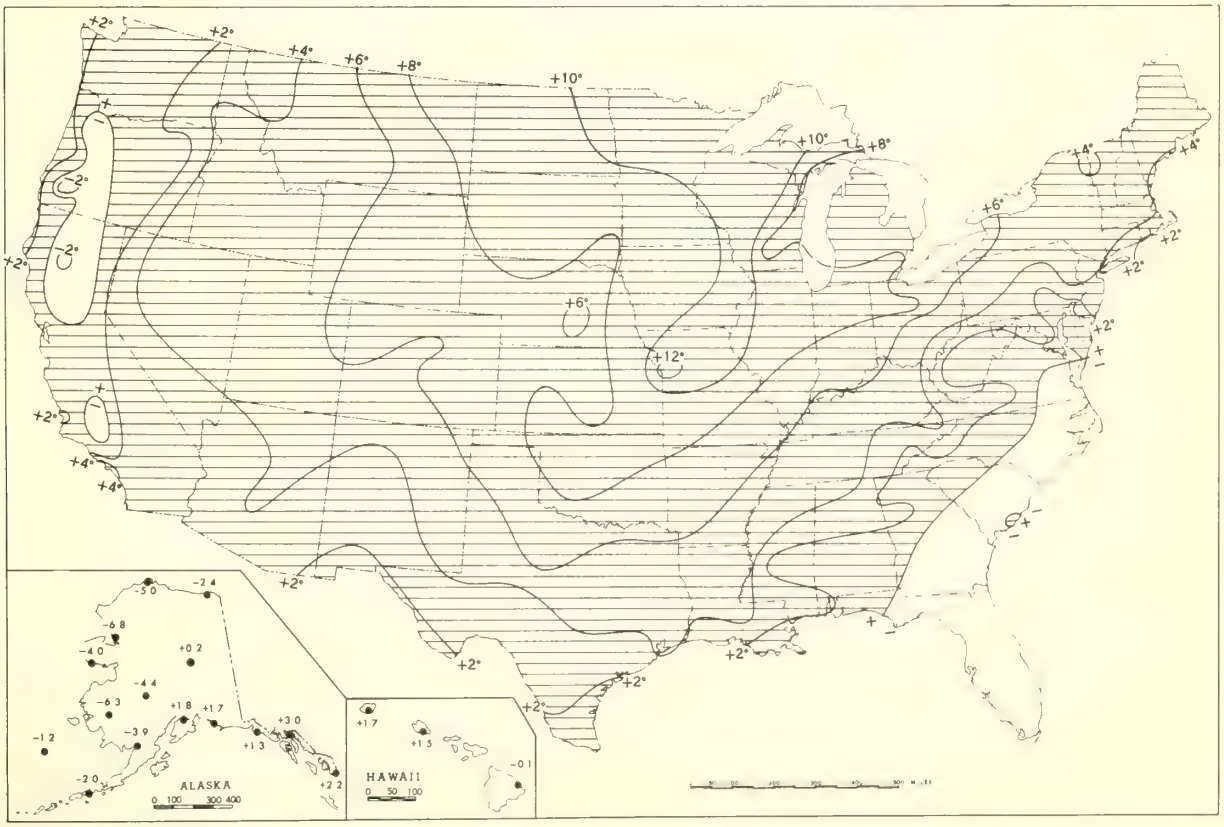
Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Bismarck, N. Dak.	00276	00244	00253	00258	05254	00253	00294	00285	00267	00276	00270	00265	05271	00286	00288	00283	00273	00277	05287	05298	00293	00260	00274	00287	00260	00285	00281	00297	35282	00308	00281	276
Caribou, Maine	00321	00302	00320	05360	00308	05323	00306	00346	00343	04333	05313	-----	00351	06335	00310	00297	00314	00300	00308	00326	00301	00300	36296	00274	00279	00259	00250	00252	-----	-----	00322	309
Green Bay, Wis.	00311	00330	00301	04307	00297	00288	05289	00310	00298	00315	00311	00310	00302	00292	00299	05306	03310	04327	06319	-----	05321	00280	00298	00287	00269	00252	00255	00313	00288	05306	04332	301
Mauna Loa, Hawaii	00268	00273	00267	-----	00253	00282	00289	00281	00274	00271	00267	00268	00263	00264	00264	-----	00256	00253	-----	-----	-----	00249	00253	00258	00255	00251	00249	00249	00252	00263	00262	263
Midland, Texas	00252	00255	00271	00260	00253	00259	00256	00252	00249	00254	04252	00253	00255	05251	06256	00260	05252	05254	05260	05262	00262	05254	03271	03272	00279	00267	00253	00259	00239	00242	-----	257
Nashville, Tenn.	00284	00283	00288	-----	-----	00288	00285	00292	00327	00305	00299	00304	00310	00291	00295	00291	00296	00306	00298	00278	00280	00276	00272	00271	06283	00270	00252	00253	00269	00263	00262	285
Sterling, Va.	00290	00292	00291	00285	00285	00280	00280	05295	00302	00296	00310	00299	00305	00299	00315	00304	00303	00290	00296	00309	00290	-----	00268	00266	00261	00272	05264	05286	03322	00276	03273	290

The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded $\Omega \Omega \Omega$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e g , 350 milli-atmo-cm ozone implies an ozone layer 0.350 centimeter thick. The code λS designates the type of measurement made

Chart I. A. Average Temperature (°F.) at Surface, October 1963.



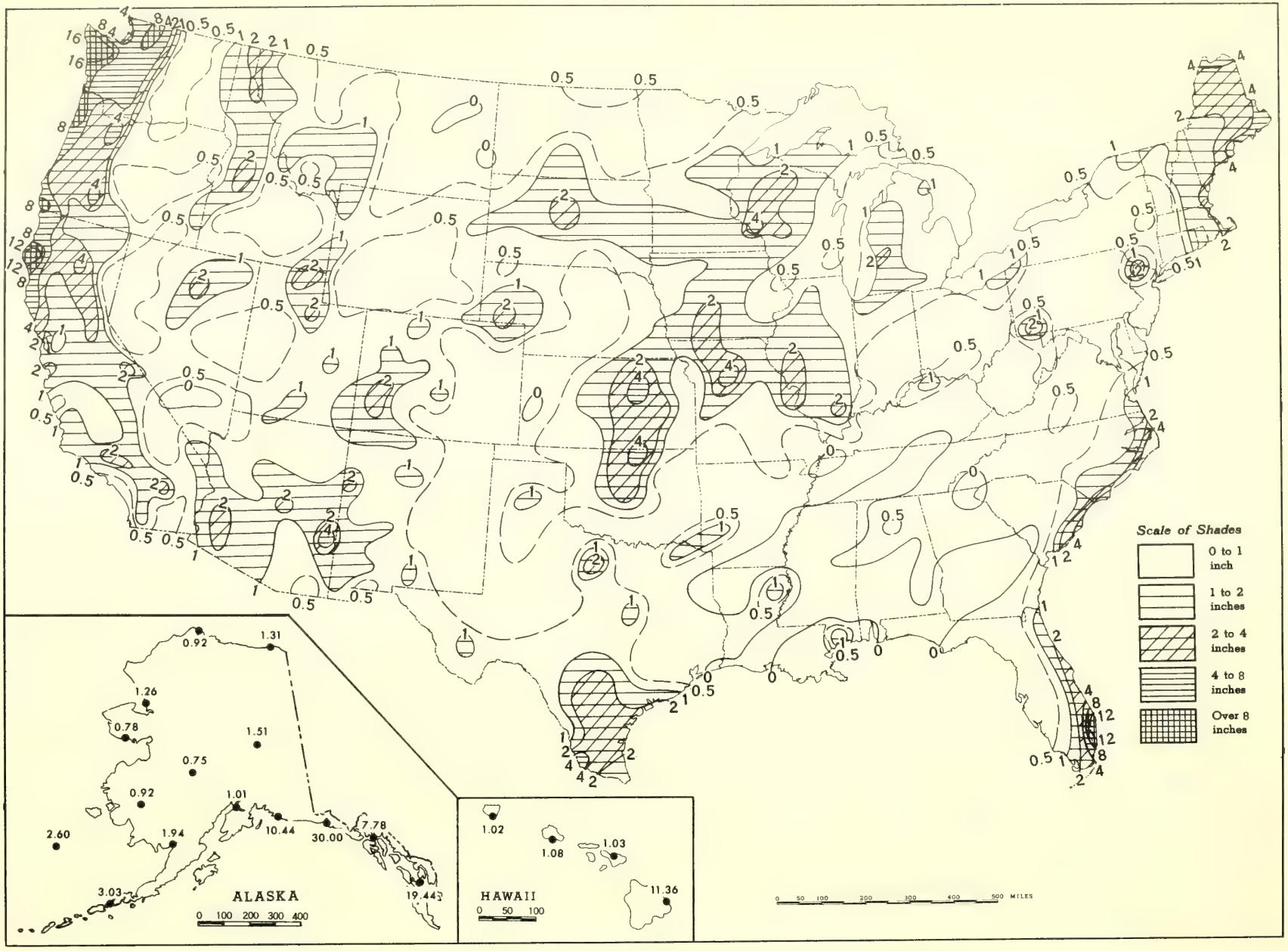
B. Departure of Average Temperature from Normal (°F.), October 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

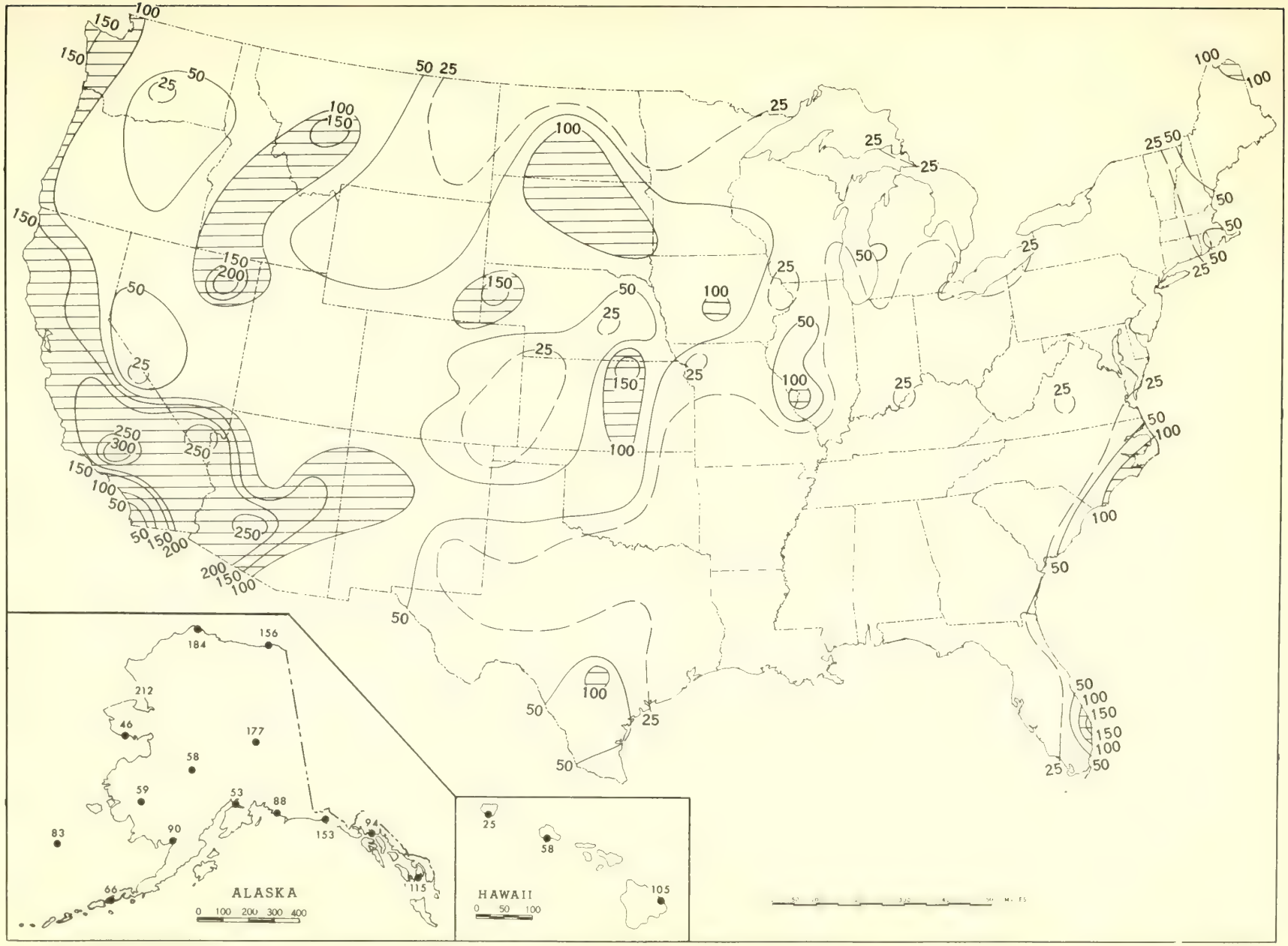
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), October 1963.



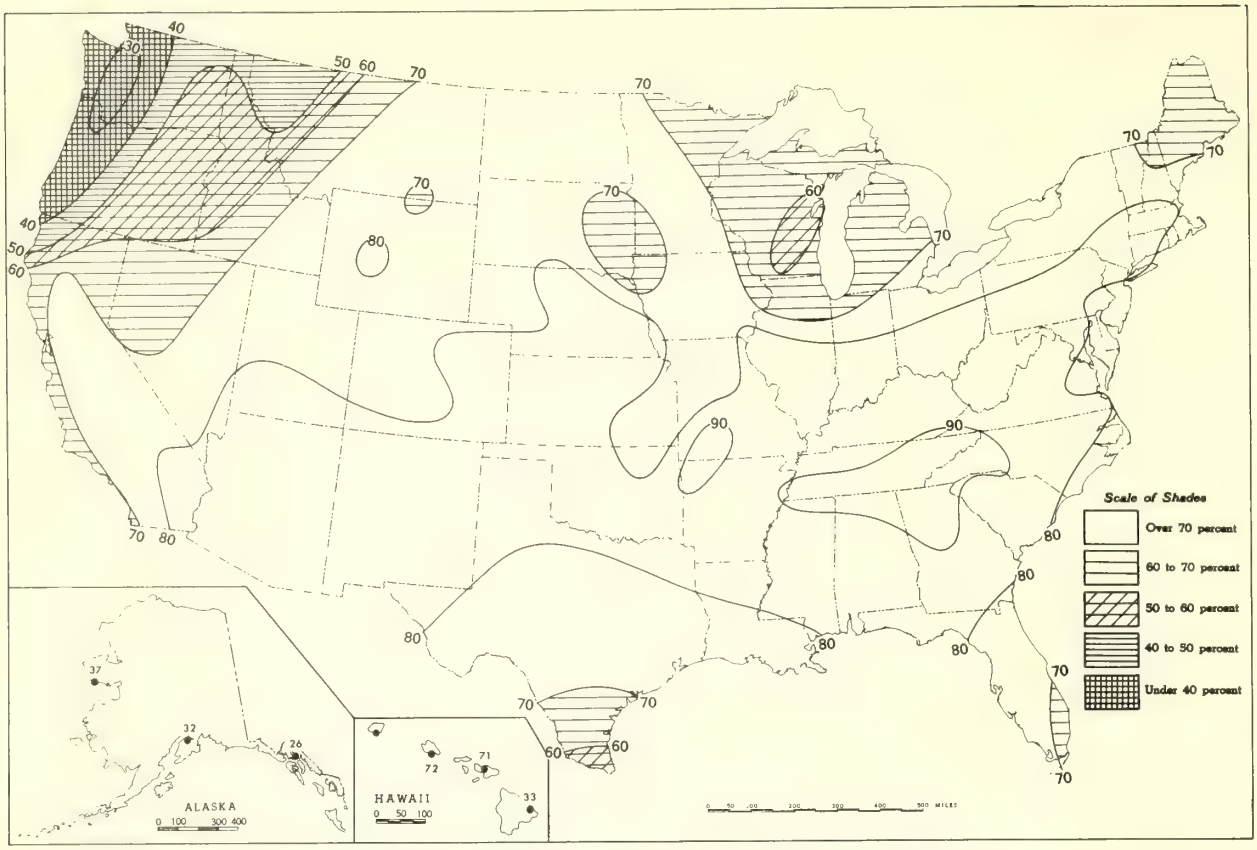
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, October 1963.

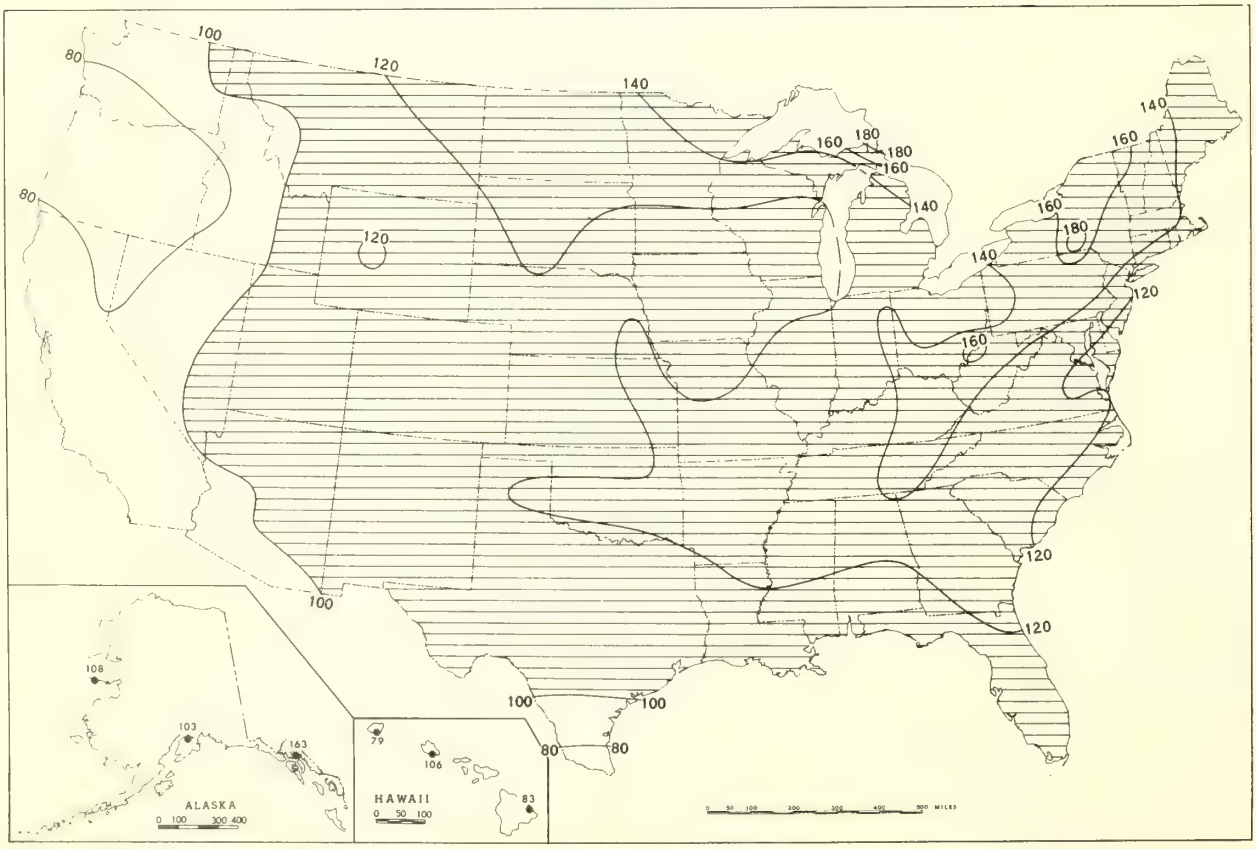


Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart VI. A. Percentage of Possible Sunshine, October 1963.

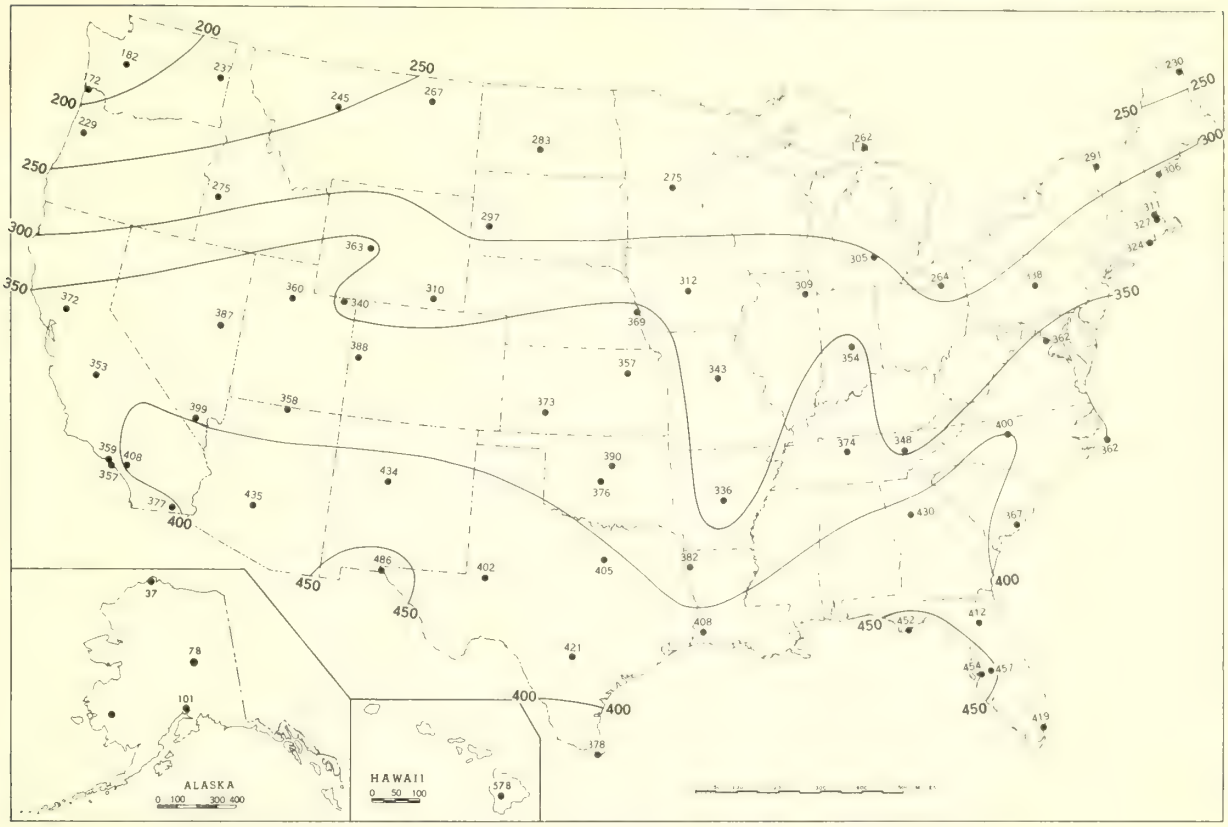


B. Percentage of Mean Monthly Sunshine, October 1963.

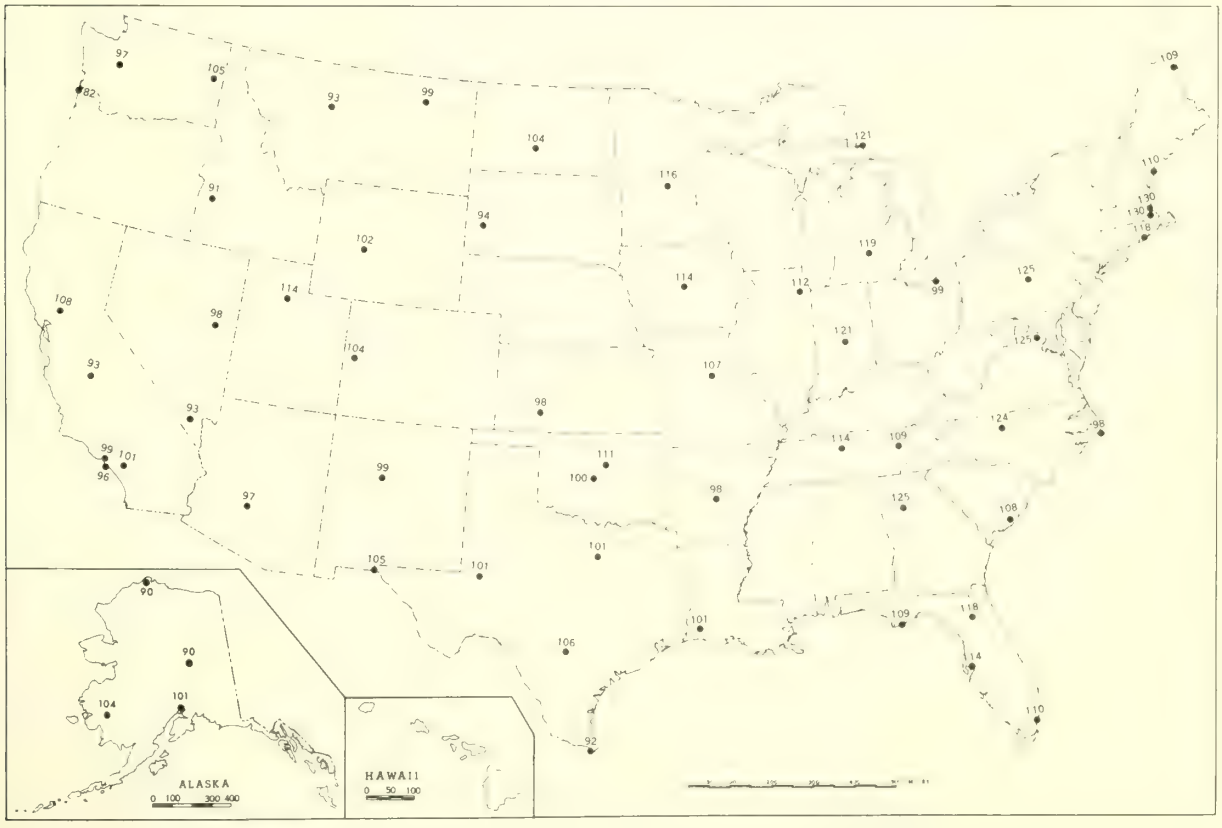


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, October 1963.

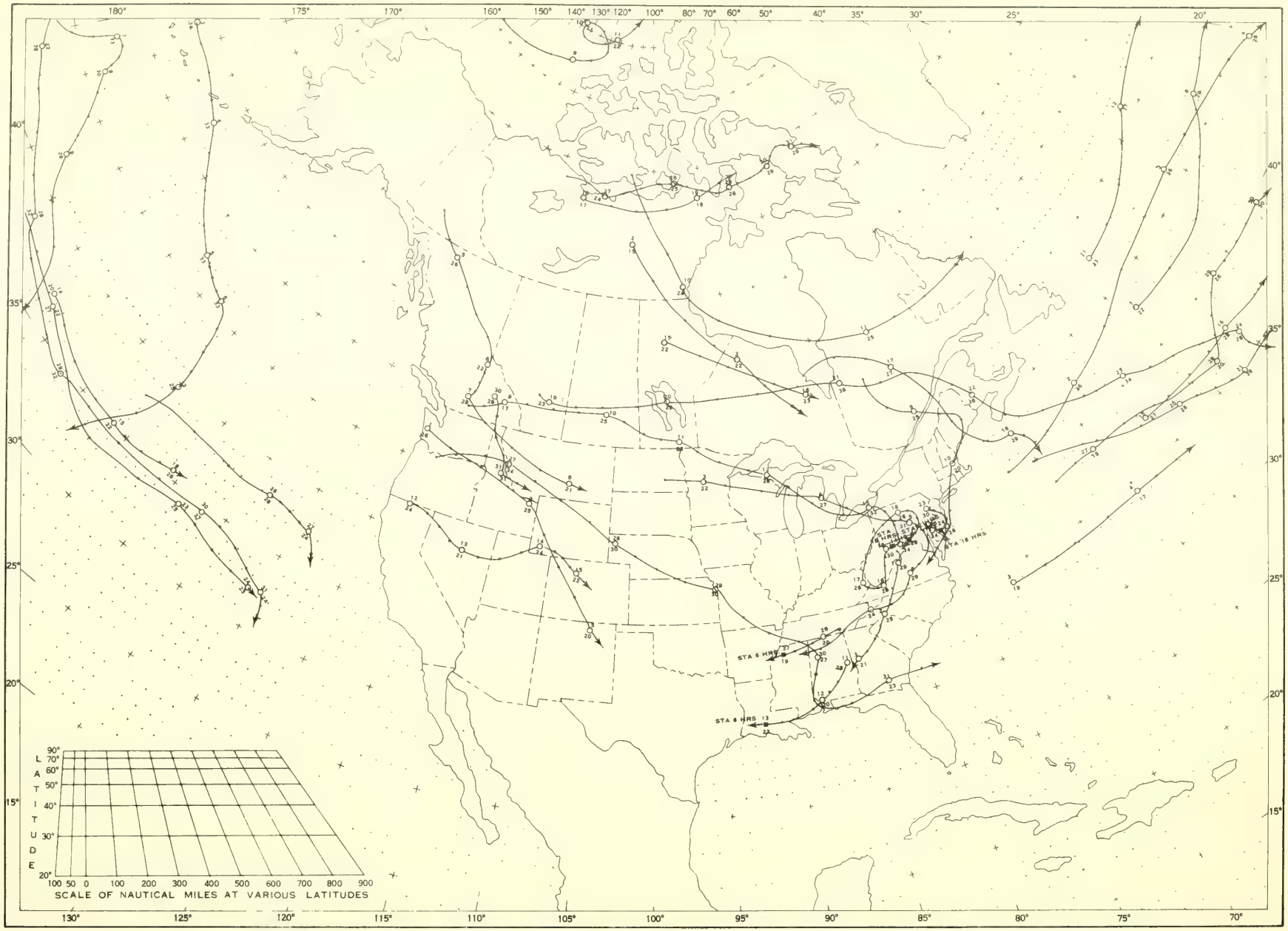


B. Percentage of Mean Daily Solar Radiation, October 1963.



A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

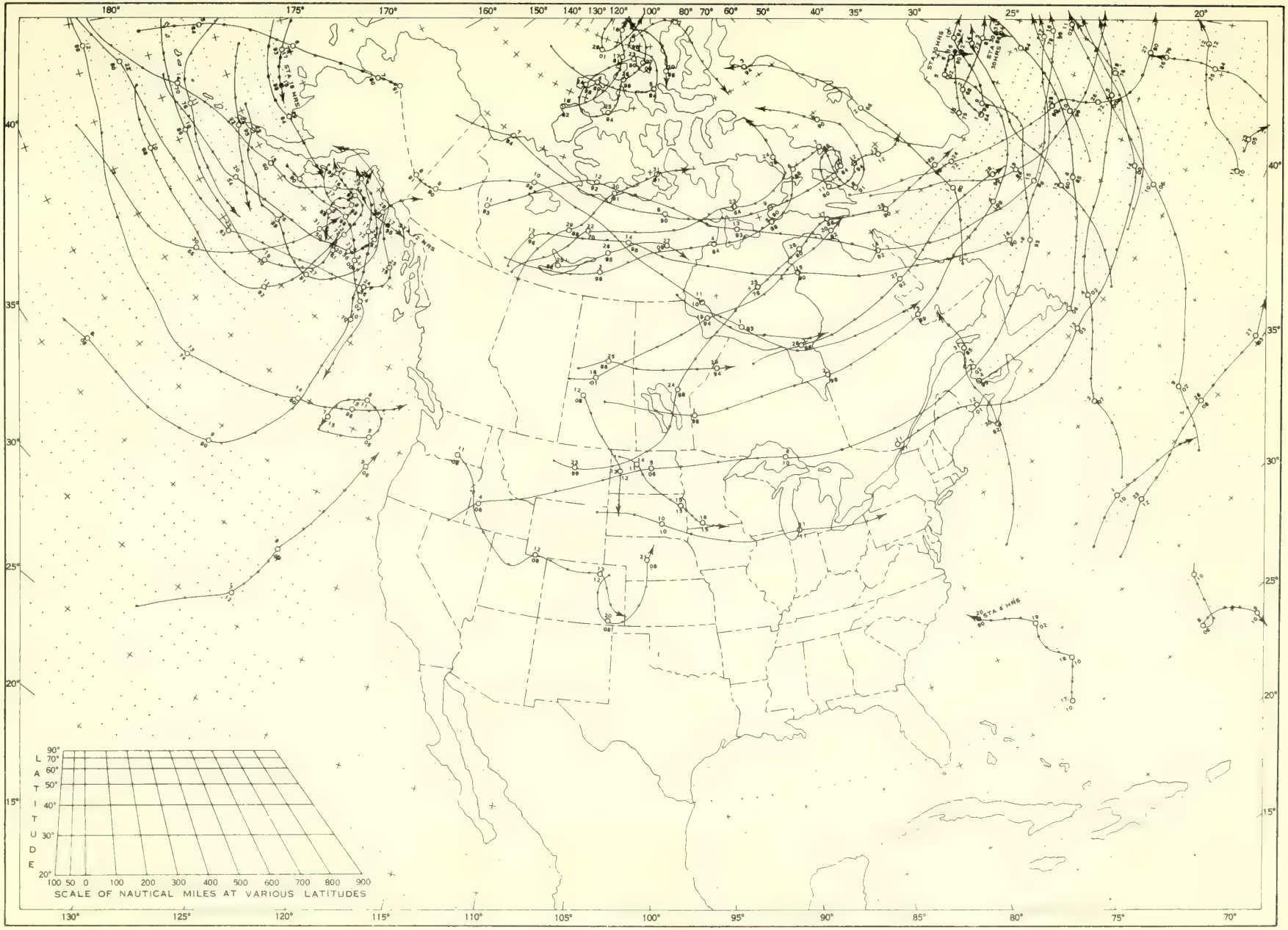
Chart VIII. Tracks of Centers of Anticyclones at Sea Level, October 1963.



Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

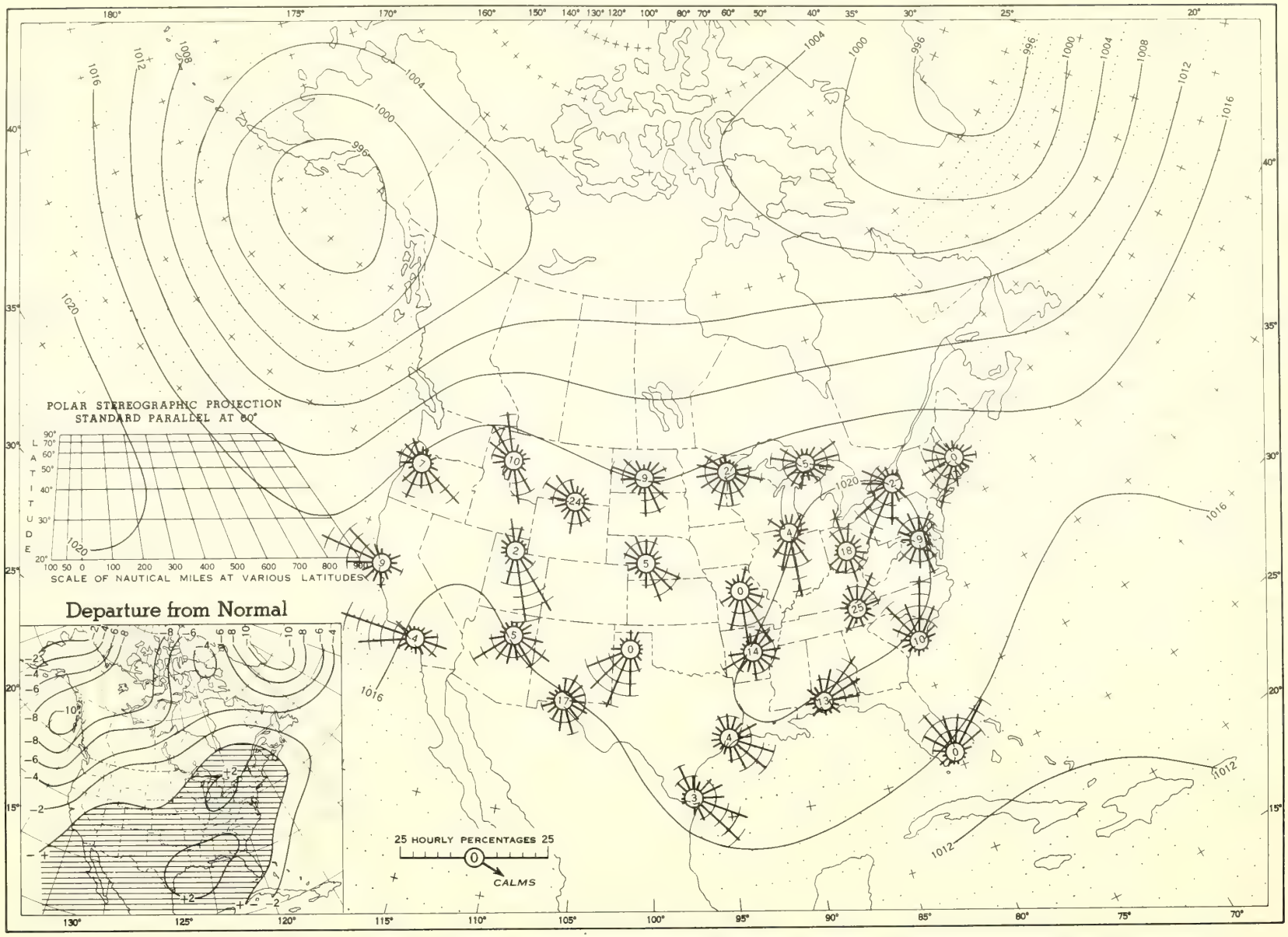
Chart IX. Tracks of Centers of Cyclones at Sea Level, October 1963.

Chart IX. Tracks of Centers of Cyclones at Sea Level, October 1963.



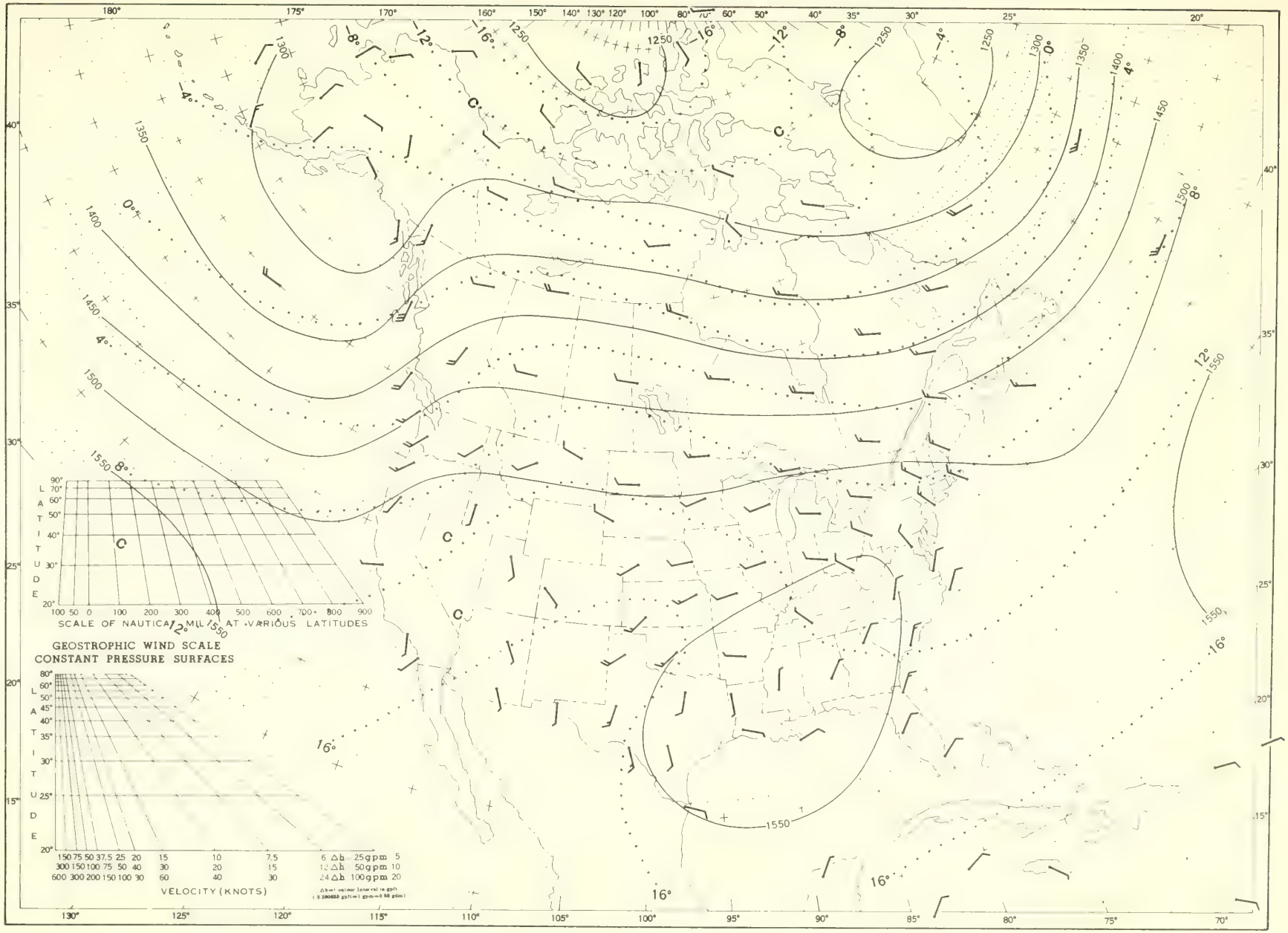
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, October 1963. Inset: Departure of Average Pressure (mb.) from Normal, October 1963.



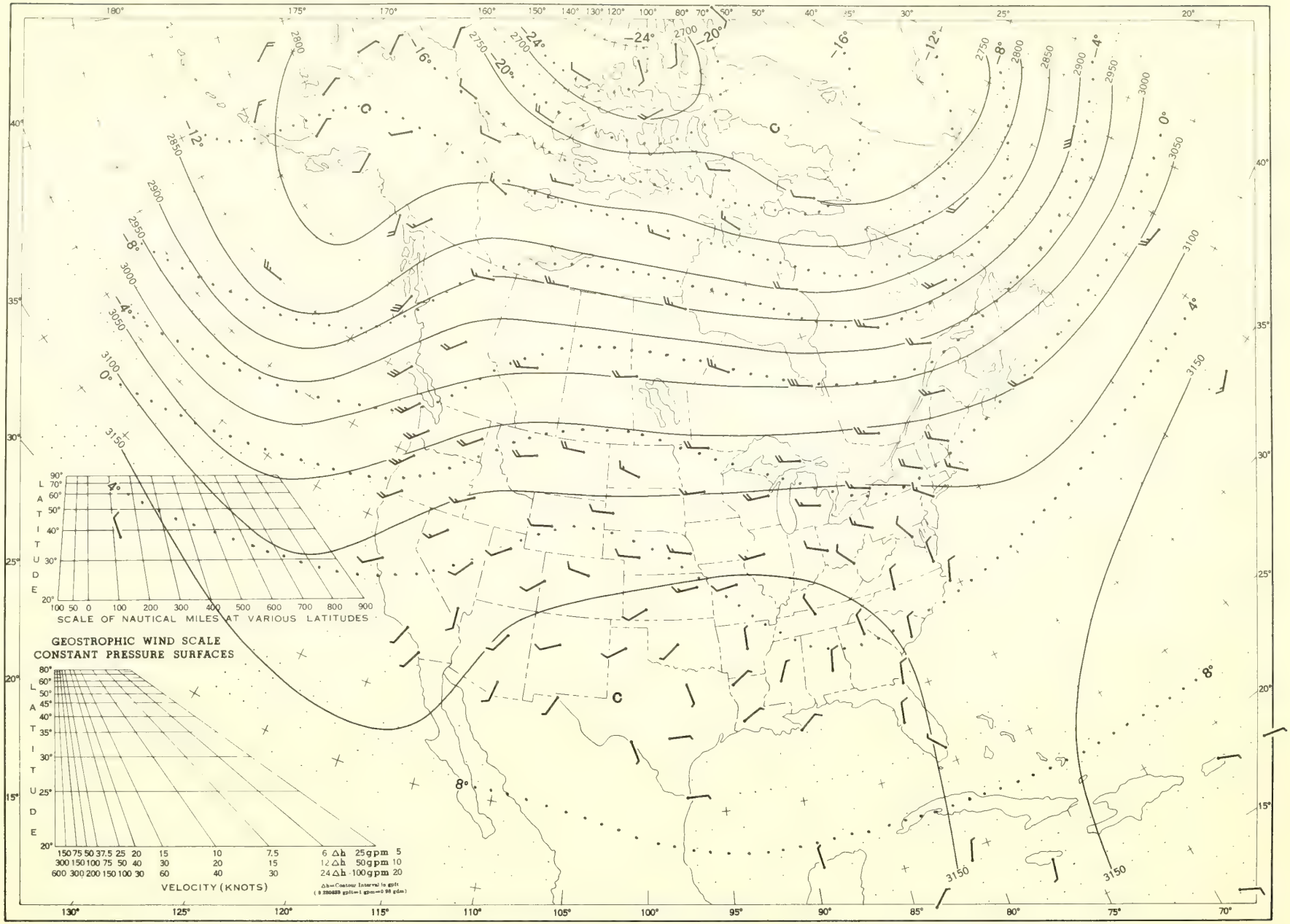
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.



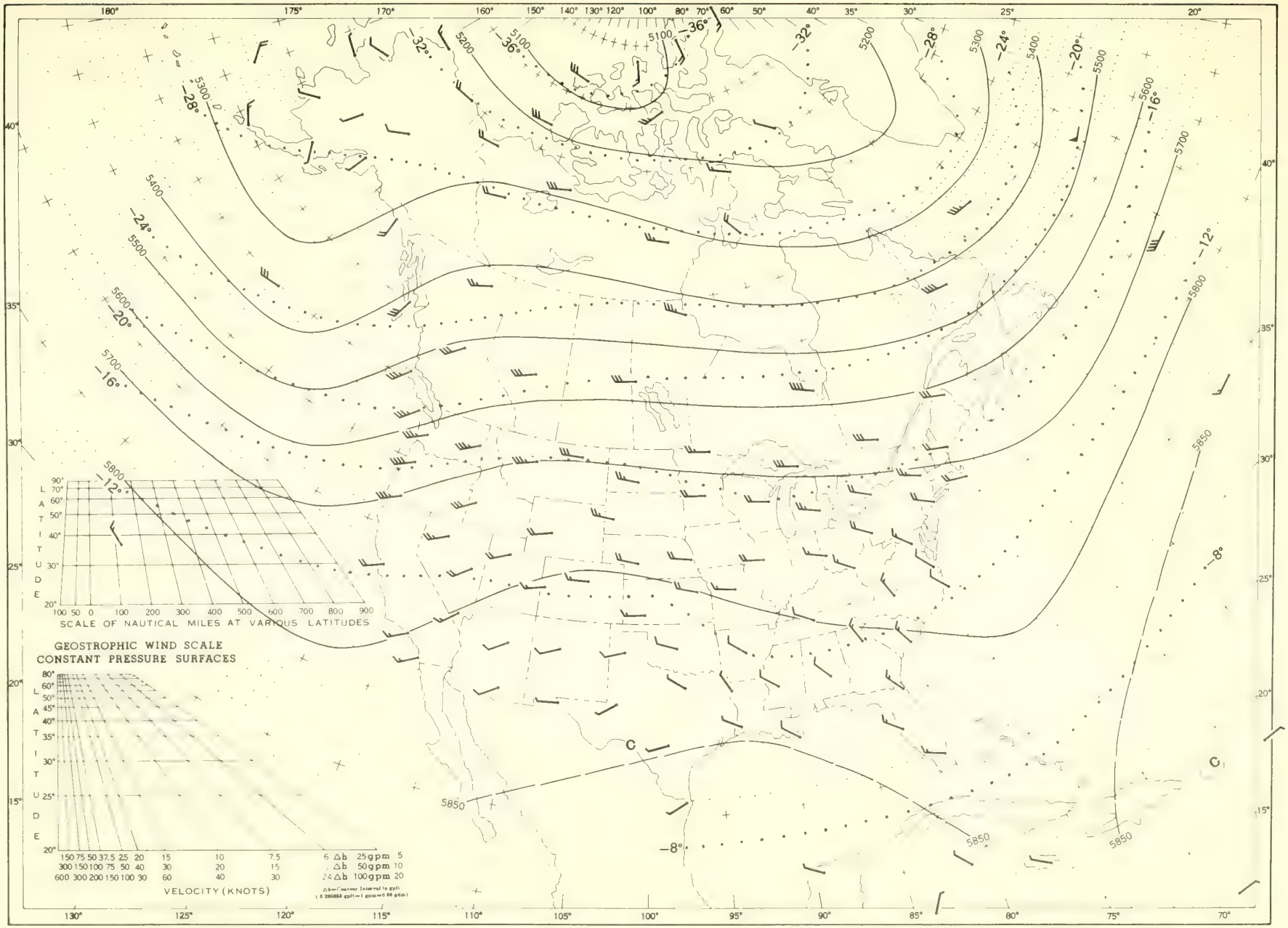
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.



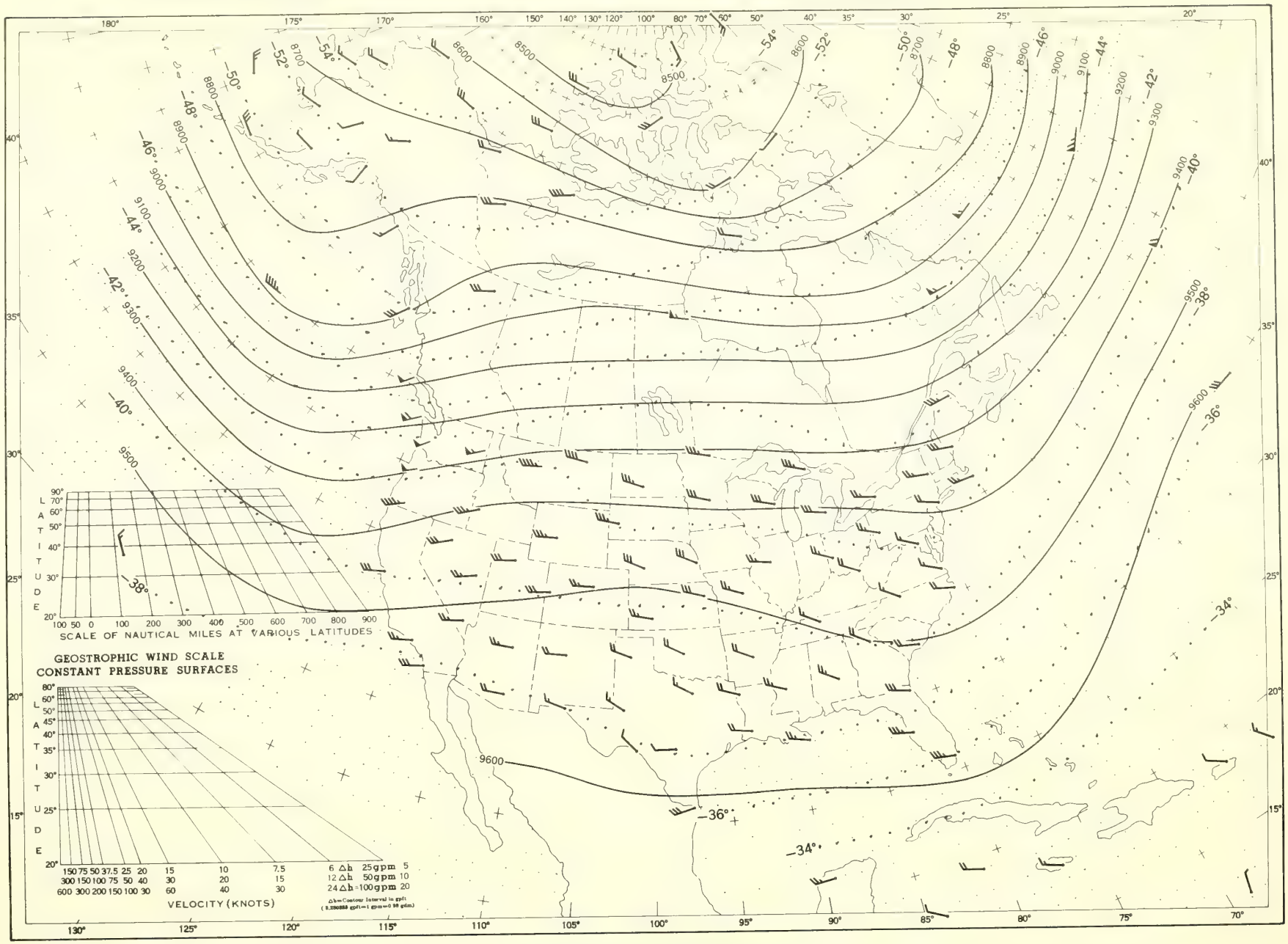
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.



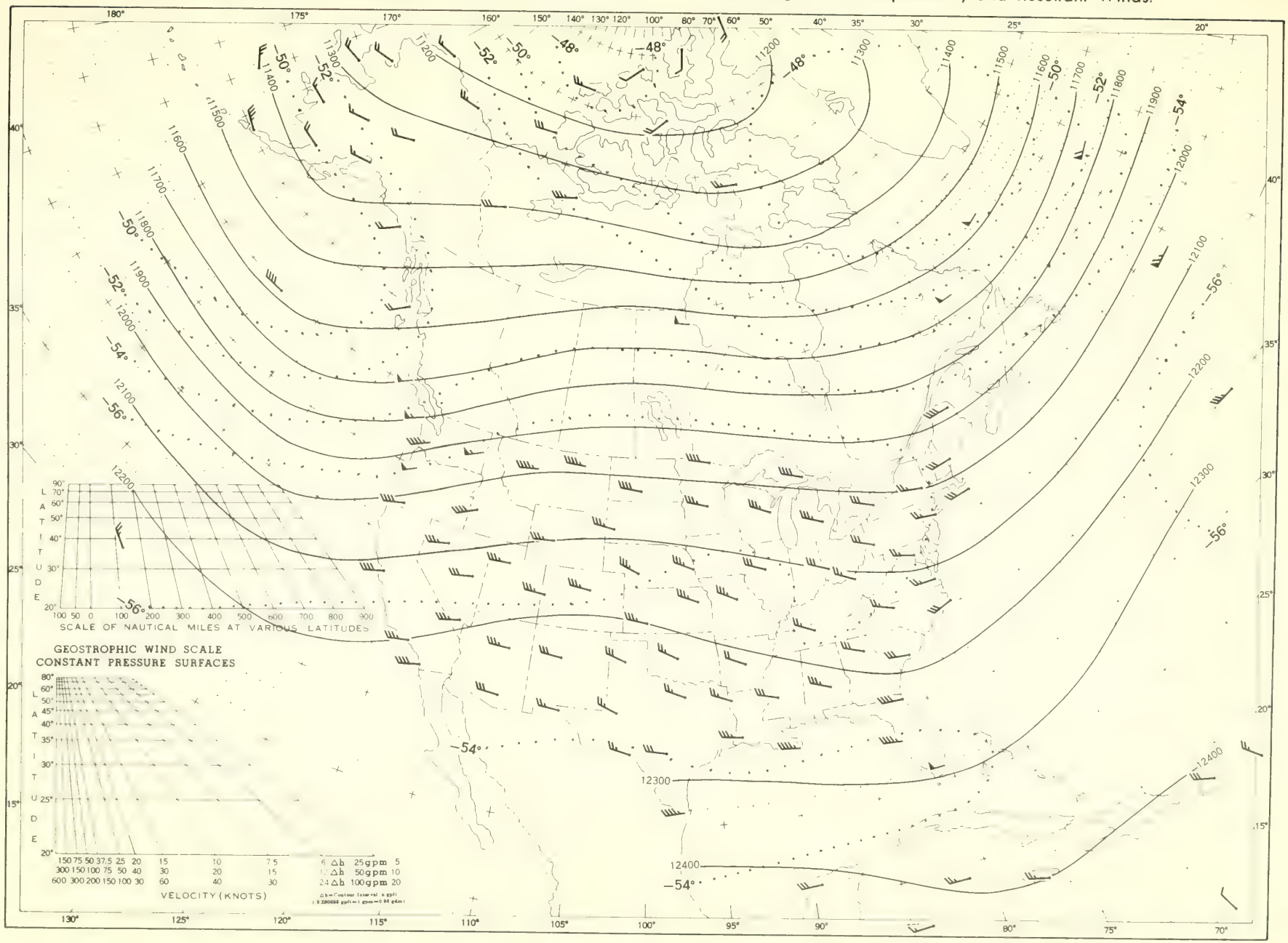
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.



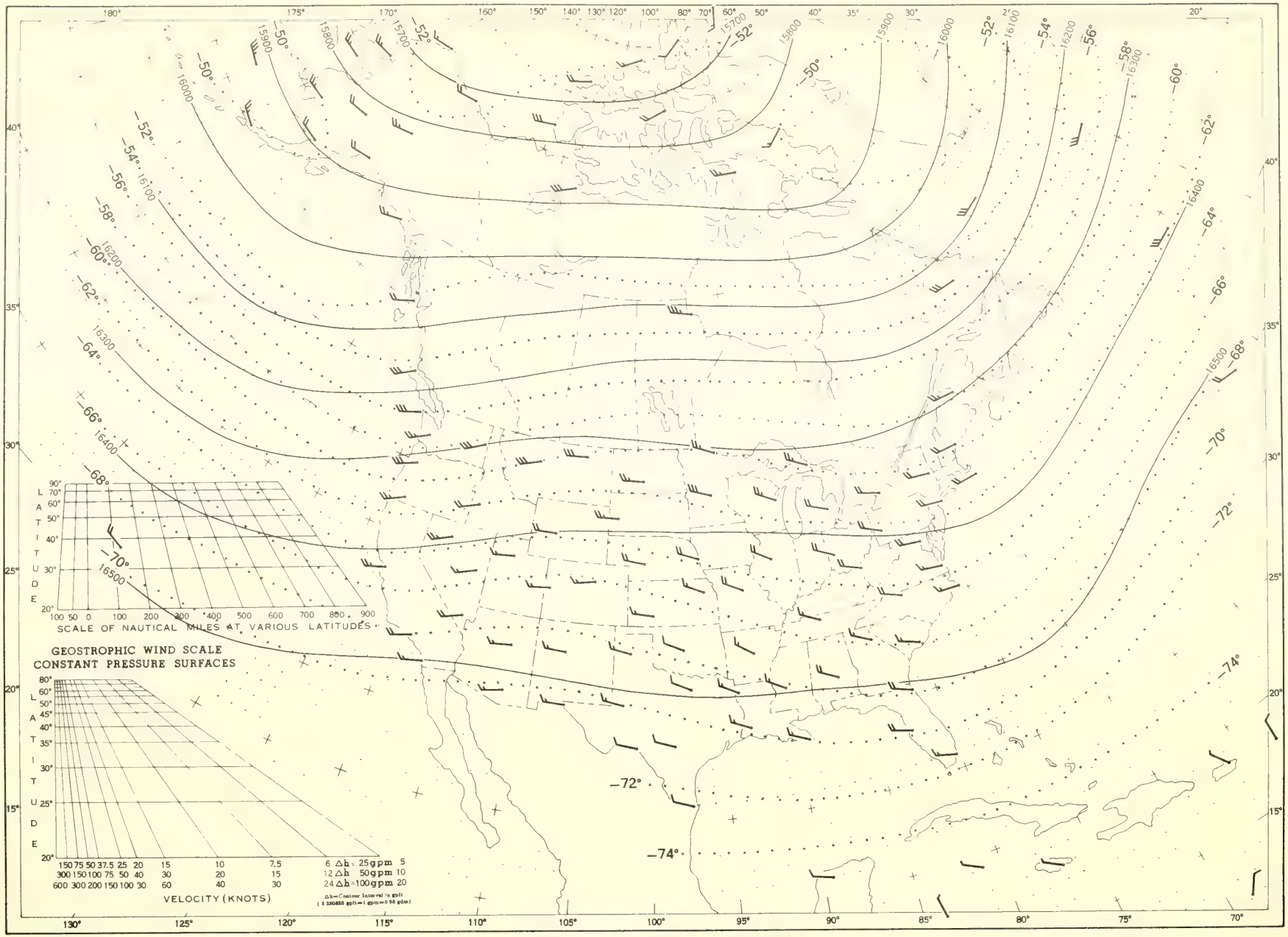
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.



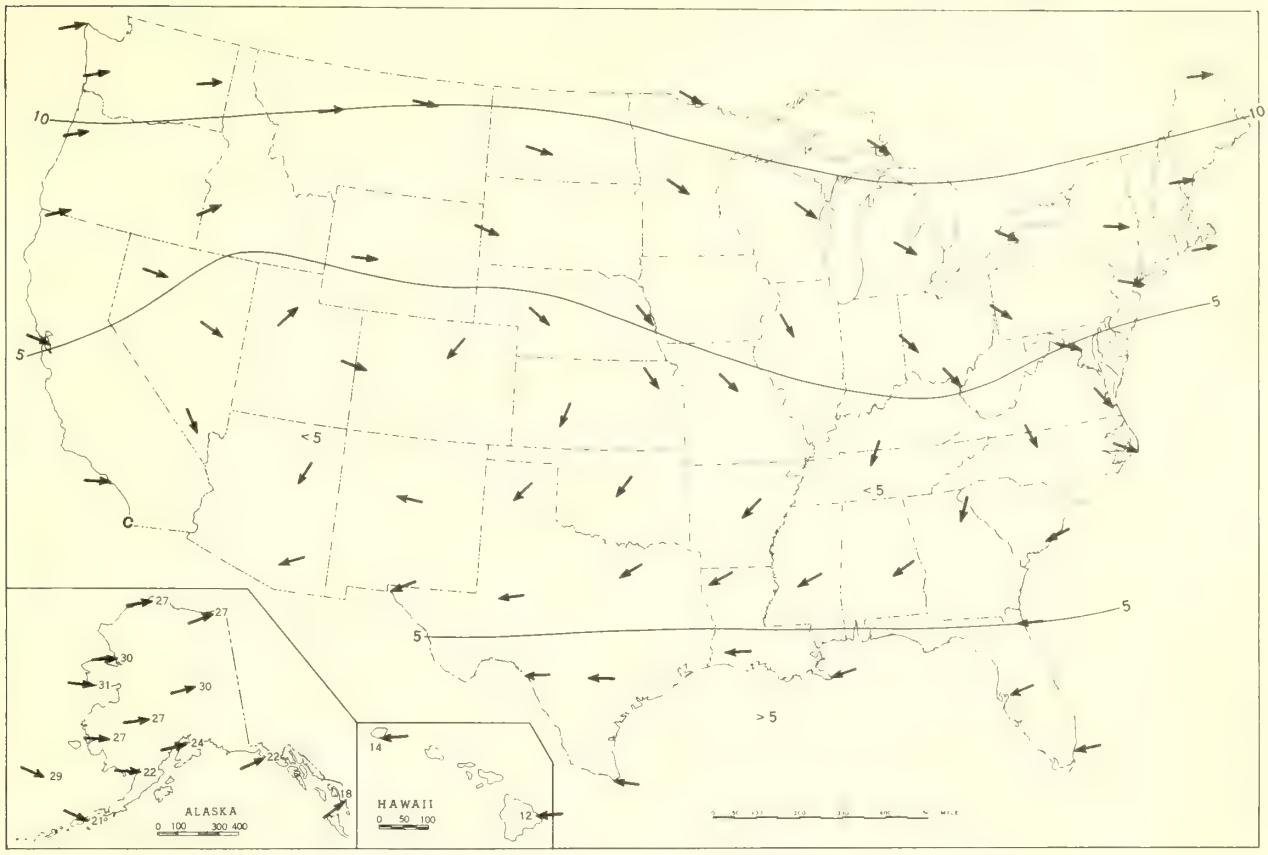
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, October 1963. Average Height and Temperature, and Resultant Winds.

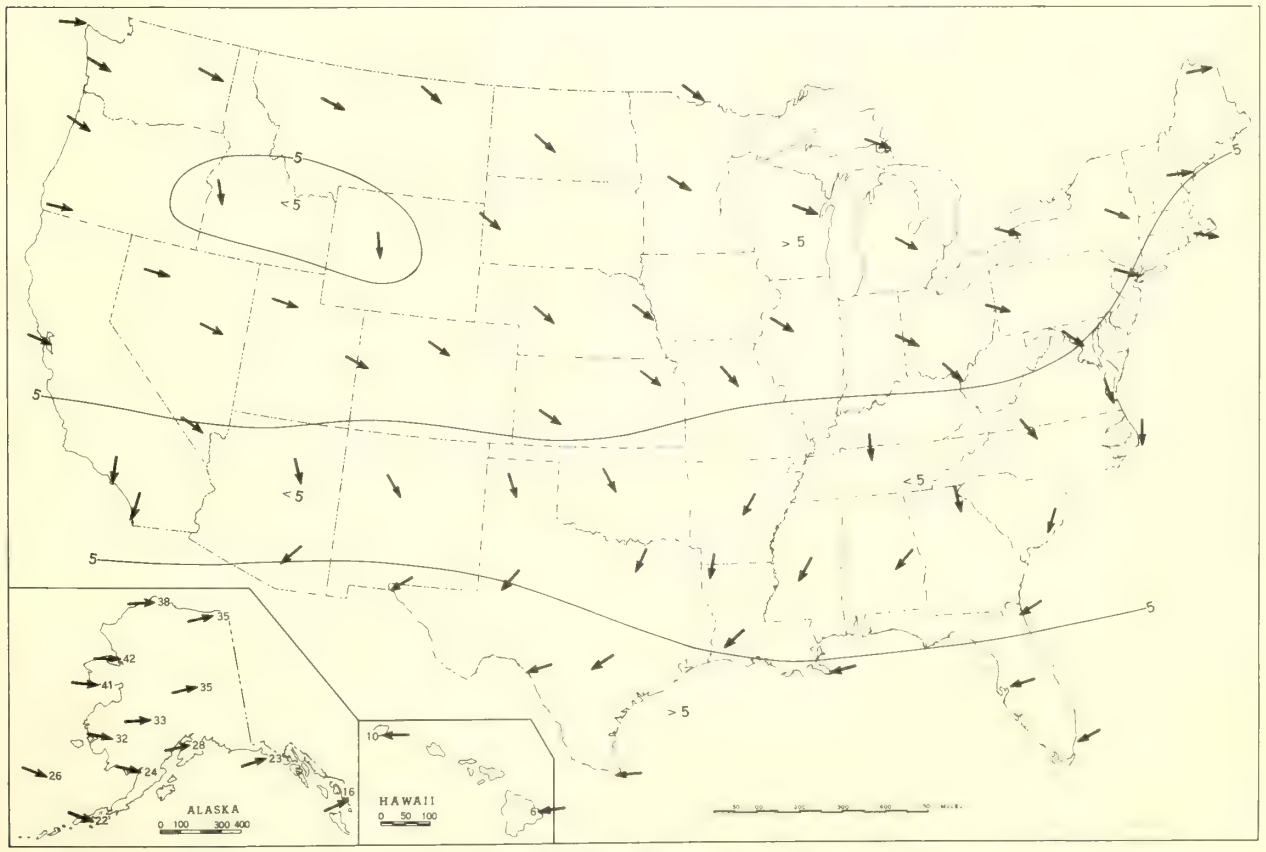


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, October 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, October 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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Volume 14 No. 11

ASHEVILLE: 1964

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 11 NOVEMBER 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

Warm, dry weather continued in November over most of the Nation from the Rocky Mountains eastward to the Ohio River in the north and to the Appalachians in the south. At Denver, Colo., measurable rain fell on only 1 day in October and on only 1 day in November. At Sheridan, Wyo., it was the warmest autumn season since 1908. It was unusually warm and dry across the Great Plains. Bismarck, N. Dak., received only a light sprinkle during the month. Minneapolis, Minn., received only a few flakes of snow, this being the second time on record that so little snow fell at Minneapolis in November. On November 5, the temperature at Des Moines, Iowa, climbed to 95° setting a new record for so late in the season. November 1963 was the second warmest November of record at Lincoln, Nebr., and the second driest of record at Topeka, Kans. It was warm and dry across the southern Great Plains, in the Ohio River Valley, and the Great Lakes region. At numerous stations near the Great Lakes, November 1963 was the warmest November in more than 30 years. Temperatures over most of the Country from the Rocky Mountains to the Appalachians and Ohio River Valley averaged more than 2° above normal. Temperatures over much of the northern Great Plains averaged more than 4° above normal and some areas -- Minnesota and Lower Michigan -- averaged more than 6° above normal. Rainfall over most of the Rocky Mountains and the western Great Plains from North Dakota to the Texas Panhandle averaged less than 0.50 inch.

In contrast to the dry interior of the Country, most of the region west of the Rocky Mountains was cloudier and rainier than usual. Tatoosh Island and Olympia, Wash., and Astoria, Oreg., received rain on each of the first 28 days of the month. The weather was wet and warm at Walla Walla, Wash., and Pendleton, Oreg., recorded "mild and wet" as describing the weather. Medford, and Sexton Summit, Oreg., received far more than normal rainfall. At Boise, Idaho, it was the rainiest November since 1908. Heavy rains caused sharp rises in the rivers and streams in the Eureka, Calif., area, and at Mt. Shasta, Calif., the ski bowl started its winter sports program on November 15 with 34 inches of snow on the ground. The depth increased to 48 inches by the end of the month. In southern California, Fresno recorded the most cloudy days and least sunshine of any November and Burbank reported that November was the cloudiest November of record and rainier than usual. Tucson, Ariz., reported considerable cloudiness and Milford, Utah, recorded more rain than in any November since 1919.

Warm, windy, and wet describes the November weather along the Gulf of Mexico and over the States bordering the Atlantic Ocean. Port Arthur, Tex., received 9.90 inches of rain. It was the fourth wettest November of record at that station. Daytona Beach, Fla., set a new November record, receiving 7.98 inches of rain during the month. At the Charleston, S. C., Weather Bureau Office, it was the rainiest November since 1902. Rainfall at Raleigh, N. C., was more than twice the normal and at Greensboro, N. C., precipitation exceeded the normal by 70 percent. November rains ended the autumn drought in the Augusta, Ga., vicinity. Warm, windy, and wet applies to the November weather over New York and New England. The rains in New York ended the forest fire hazard. Public lands that had been closed to hunters in October were reopened to the public. Milton, Mass., received less sunshine in November than in any month of record.

Several storms from the Pacific Ocean moved across the Far Northwest producing rain over the coastal portions of Washington, Oregon, and northern California on almost every day to the 28th. Snow fell frequently at the higher elevations and the snow line in the Cascade and Sierra Nevada Mountains lowered steadily during November.

High pressure prevailed over the Rocky Mountains and the western Great Plains at the beginning of the month. A cold front stretched from Lake Erie to San Antonio, Texas. As the front moved to the Atlantic Ocean, it brought rain to the eastern third of the Nation. The storm became especially vigorous in the Northeast and produced snow in the higher elevations of New York and New England.

Another storm developed later in the first week of November, and produced some inclement weather over the Ohio and lower Mississippi River Valleys. It deepened over the Middle Atlantic States and dumped over 2-1/2 inches of rain at Washington, D. C., and parts of Virginia on November 6.

On November 9, a storm centered south of the Texas and Louisiana coast deepened. It produced generous rains on the Texas and Louisiana coasts and lesser amounts eastward along the Gulf.

Near the end of the second week, cold air pushed southward across the middle of the Nation. Snow flurries occurred as far south as northern Alabama and Georgia. The temperature at Tallahassee, Fla., dropped to 23° on the 15th.

Extremely cold arctic air moved across the Canadian Border on the 19th, dropping the temperatures over portions of the northern edge of Montana to below zero. By the 21st, the first major early winter storm was in progress. Light precipitation fell over almost the entire Nation on the 21st with heavier amounts over the central Prairies on the 22d and along the middle Atlantic coast on the 23d.

A low pressure area centered south of Lake Charles, La., moved to near Atlanta, Ga., on the 28th. It produced rain from eastern Texas to the Carolinas. The storm deepened, moved northeastward, and brought substantial precipitation to the Middle and North Atlantic States. Snow fell in the Appalachians as far south as Tennessee.

At the end of the month arctic air was pouring southward across Minnesota and a new low pressure center was developing in the Dakotas.

CONDENSED CLIMATOLOGICAL SUMMARY

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	4 Stations	82	22+	Valley Head	12	15	Guntersville TVA	6.78	Waterloo	1.41
Arizona	Yuma WBAP	92	12	Maverick	0	22	Santa Rita Exp Range	3.89	2 Stations	.00
Arkansas	Okay	86	6	2 Stations	13	14	Antoine	9.57	Ratcliff	1.07
California	Indio US Date Garden	93	13	White Mountain 1	-5	24+	Brancomb 2NW	22.21	Independence	.03
Colorado	John Martin Dam	80	15	Hermit 7ESE	-14	30	Wolf Creek Pass 4W	2.48	3 Stations	.00
Connecticut	Bulls Bridge Dam	76	18	Coventry	15	26	Ansonia	10.07	Salisbury	5.01
Delaware	Lewes 1SW	73	18	Selbyville	23	26	Wilmington Porter Resvr	7.59	Newark University Farm	4.62
Florida	2 Stations	88	27+	Fountain 3SSE	21	15	Hart Lake	9.96	Pompano Beach	1.01
Georgia	Bainbridge	83	22	Elberton 2N	14	15	Helen 1SE	6.95	Ashburn 1S	1.43
Idaho	2 Stations	68	15+	Hill City	-11	30	Sandpoint Exp Station	6.56	May Ranger Station	.49
Illinois	3 Stations	76	17+	Rochell 1W	15	30	Mount Vernon	4.96	Hennepin Power Plant	.80
Indiana	2 Stations	74	22+	Osgood	12	3	La Porte	3.15	North Vernon 2SW	.42
Iowa	do	75	16	Milford 4NW	6	23	Dubuque WBAP	4.66	2 Stations	.00
Kansas	Independence	88	16	Syracuse 2W	9	23	Girard	2.73	13 Stations	.00
Kentucky	2 Stations	79	22	Cecilia	11	3	Cumberland	5.99	Carrollton Lock 1	.63
Louisiana	Catfish Point	92	6	Ashland 2S	20	14	Houma 1SW	13.26	Tallulah Delta Lab	2.59
Maine	Sanford 2NNW	66	18	Squa Pan Dam	8	29+	Gilead	13.88	Clayton Lake 2	D2.85
Maryland	Boyds 2NW	77	18	Bittinger 2NW	15	25	Laurel 3W	8.80	Savage River Dam	3.44
Massachusetts	4 Stations	74	19+	8 Stations	18	26+	Newburyport	10.17	Nantucket WBAP	3.49
Michigan	Grand Haven Fire Dept	69	7	Crystal Falls 6NE	4	24	Elberta	D5.07	Dearborn	.94
Minnesota	Madison Sewage Plant	68	16	Baudette 22S	-15	24	Caledonia	2.40	2 Stations	T
Mississippi	Pascagoula City	88	1	2 Stations	17	15+	Ashland	5.89	Pascagoula City	1.72
Missouri	Portageville	86	1	Annapolis 4WSW	10	30	Reynolds	8.40	Hamilton	.32
Montana	Hysham 19SSE	76	26	Browning	-22	21	Troy 18N	5.78	5 Stations	.00
Nebraska	2 Stations	80	16	Nenzel 20S	2	13	Falls City	1.81	3 Stations	.00
Nevada	Sunrise Manor Las Vegas	82	14	Charleston	-7	29	Glenbrook	4.84	Indian Springs	.17
New Hampshire	Windham	72	18	3 Stations	11	30+	Conway 1N	12.90	Whitefield	4.38
New Jersey	Flemington 1NE	76	19	Layton 2	19	26	Glassboro	8.88	Canton	5.12
New Mexico	Bitter Lake WL Refuge	86	16	Red River	-4	18	Gray Ranch	1.67	8 Stations	.00
New York	2 Stations	74	19+	Old Forge	11	30	Slide Mountain	D14.17	Rockdale	3.26
North Carolina	Plymouth 5E	87	23	2 Stations	12	16+	Lake Toxaway 2SW	11.42	Marshall 2NE	2.38
North Dakota	2 Stations	75	15	Powers Lake 1N	-18	22	Wahpeton	.83	2 Stations	.00
Ohio	Paulding	75	17	2 Stations	15	26+	Chardon	5.41	Buckeye Lake	.45
Oklahoma	Nowata	89	9	Fort Supply Dam	14	29	Oklahoma City East	3.89	Regnier	T
Oregon	Pilot Rock 1SE	72	2	Lake	2	29	Valsetz	22.25	Adel 1S	.40
Pennsylvania	3 Stations	76	18	Coudersport 3NW	13	25	McConnellsburg	8.87	Burgettstown 2W	2.15
Puerto Rico	2 Stations	96	16+	Lameshur Bay	54	24	Rio Blanco Upper	22.69	Coamo Dam	.79
Rhode Island	Providence WBAP	71	18	Kingston	19	26	Greenville	8.16	Block Island WBAP	5.77
South Carolina	Bamberg	82	19	Chester 2WSW	15	15	Caesars Head	8.16	Loris	2.74
South Dakota	Mission 14SSE	78	15	Andover 7N	-7	23	Gregory	.93	2 Stations	.00
Tennessee	2 Stations	80	1	Mountain City 2	15	16	Athens 2SE	7.24	Portland Sewage Plant	2.02
Texas	Goliad	96	6	2 Stations	16	29	Evadale	13.34	4 Stations	.00
Utah	Saint George PH	78	12	Silver Lake Brighton	-4	22	Silver Lake Brighton	3.74	Mexican Hat	.00
Vermont	Enosburg Falls	69	18	2 Stations	12	30+	Wardsboro	8.47	Rutland	3.54
Virginia	Danville-Bridge St	81	28	St Paul	10	30	Big Meadows	13.70	Byllesby	3.11
Washington	2 Stations	69	2+	Chesaw 4NNW	-6	20	Quinault River RS	27.40	Kennewick	.82
West Virginia	Benson	79	18	Arbovale 2	12	25	Pickens 1	9.33	Parkersburg WB City	1.42
Wisconsin	West Bend	68	7	Gordon 2ESE	3	24	Monroe 1W	3.21	2 Stations	.55
Wyoming	Lagrange	73	2	Bondurant 3NW	-15	30	Alpine 2S	3.50	13 Stations	.00

+ And also on an earlier date or dates

NOTE: Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of snowfall.

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																	
BIRMINGHAM	610	994.2	1019.8	65	42	53.5	1.7	78	22+	27	15	0	7	41	65	4.00	0.47	1.99	8	2	0.0	0	7.4	ESE	38	W	30	8	9	13	6.0	52
HUNTSVILLE	605	997.6	1019.8	63	41	51.9	1.1	78	19	25	15	0	8	40	67	4.44	0.79	2.05	10	2	T	T	9.6	SE	46*	N	29	7	6	17	6.5	
MOBILE	211	1016.1	1018.4	70	48	59.2	1.3	81	6	33	15+	0	0	47	69	4.48	1.13	2.51	6	3	0.0	0	10.8	SE	35*	SSE	22	9	7	14	5.9	
MONTGOMERY	195	1011.0	1019.3	68	43	55.3	1.1	81	22	25	15	0	5	44	70	3.22	0.20	2.51	8	2	0.0	0	6.6	NNW	34	W	1	11	6	13	5.4	56
ALASKA												B																				
ANCHORAGE	90	998.9	1004.2	20	5	12.1	-10.1	36	1	-14	24	0	30	2	77	0.12	- 0.91	0.12	2	0	2.6	3	4.0	N	21*	NNW	15	13	7	10	4.5	62
ANNETTE	110	999.6	1003.7	42	33	37.6	- 2.8	51	11	10	21	0	11	30	76	10.50	- 4.15	2.03	25	0	9.3	3	14.4	SE	40*	S	29+	1	3	26	8.8	
BARROW	22	1018.9	1019.6	1	-11	- 5.3	- 4.6	24	12	-29	30	0	30	- 14	66	0.13	- 0.10	0.04	5	0	2.2	13	11.8	ENE	31*	WNW	14+	V 2	V 1	V15	8.3	
BARTER ISLAND	39	1016.9	1019.0	- 2	-14	- 7.7	- 7.9	22	13	-39	26	0	30	- 15	67	0.50	0.10	0.13	10	0	5.6	15	12.7	W	49*	W	15	X 4	X 5	X14	7.8	
BETHEL	125	1010.1	1011.5	8	- 2	2.8	-14.4	24	14+	-21	27	0	30	- 6	69	0.10	- 0.96	0.10	2	0	1.9	2	12.8	NNE	29*	NNE	24	12	7	11	5.0	
COLD BAY	94	1000.9	1005.0	33	24	28.4	- 6.0	43	18	1	29+	0	26	24	81	1.46	- 2.33	0.40	16	0	4.6	3	13.6	NNW	35*	NNE	23+	0	5	25	8.8	
CORDOVA	40	998.1	999.9	34	17	25.2	- 5.9	47	1	- 4	24	0	27	18	78	2.00	- 6.02	0.50	11	0	16.6	12	5.5	E	30*	ESE	30	9	5	16	6.2	
FAIRBANKS	436	996.6	1015.1	- 3	-18	-10.5	-14.4	19	1	-42	25	0	30	- 18	71	0.18	- 0.42	0.07	7	0	4.6	5	2.4	N	17*	W	14	13	7	10	4.7	
JUNEAU	17	1003.2		33	24	28.3	- 6.0	47	11	1	23	0	20			3.91	- 2.15	1.35	17	0	20.1	17	11.9	ESE	32*	SSE	25+	5	4	21	7.7	31
KING SALMON	43	1004.6	1006.0	16	1	8.5	-13.5	38	6	-20	26	0	30	1	72	T	- 1.46	T	0	0	T	T	12.0	N	29*	N	9+	16	7	7	4.3	
KOTZEBUE	10	1016.3	1016.9	1	-10	- 4.6	-12.0	27	12	-27	27+	0	30	- 10	73	0.15	- 0.21	0.11	3	0	4.3	8	8.8	ENE	36*	ESE	11	11	3	16	5.9	
MC GRATH	334	1000.0	1013.7	0	-16	- 7.9	-13.2	18	1	-34	29+	0	30	- 19	60	0.02	- 1.06	0.01	2	0	0.8	6	4.2	N	22	NNW	9	16	4	10	4.2	
NOME	13	1014.2	1014.9	13	- 3	4.8	-11.7	30	12	-19	28+	0	30	- 4	66	0.11	- 1.05	0.11	1	0	1.3	1	8.6	N	30*	N	7	17	3	10	4.4	59
ST. PAUL ISLAND	22	1007.5	1008.5	33	26	29.7	- 3.2	41	13	15	24	0	21	26	84	1.24	- 1.26	0.37	16	0	6.1	3	20.8	NNE	54*	ENE	5	0	1	29	9.6	
SHEMYA	122	1003.4	1007.1	40	35	37.6	1.8	47	10	30	30+	0	4	32	80	3.11	0.39	0.82	20	0	0.7	T	21.7	N	68*	SSW	17	0	5	25	9.0	
YAKUTAT	28	1000.4	1000.8	35	24	29.5	- 4.3	51	11	2	20	0	21	20	74	12.11	- 3.92	2.75	20	0	40.1	21	8.9	E	29*	WSW	25	8	2	20	7.1	
ARIZONA																																	
FLAGSTAFF	6993	790.8	1018.8	51	25	37.9	1.3	65	10+	10	23	0	27	27	69	1.40	0.40	0.60	7	1	10.9	8	7.1	NNE	25*	NNE	25	12	6	12	5.2	
PHOENIX	1117	975.9	1015.3	73	50	61.9	2.8	87	12+	42	28+	0	0	40	48	0.73	0.24	0.35	5	3	0.0	0	6.2	E	23*	WSW	7	16	7	7	3.9	87
PRESCOTT	5014	847.8	1017.9	61	34	47.2	1.5	72	12+	22	17	0	14	33	65	1.11	0.61	0.49	5	2	T	0	6.8	SW	26	S	20	14	7	9	4.6	74
TUCSON	2584	926.5	1015.0	72	47	59.3	1.7	85	13+	39	28+	0	0	37	50	1.26	0.64	0.64	3	0	0.0	0	9.2	SE	52	W	7	14	8	8	4.1	85
WINSLOW	4880	853.4	1019.9	60	31	45.5	3.7	75	15+	19	30+	0	15	31	63	0.36	0.00	0.26	3	0	T	0	6.8	SW	30*	W	16	13	7	10	4.5	
YUMA	199	1010.3	1015.5	79	52	65.4	1.0	92	12	42	19	2	0	40	47	0.19	0.07	0.15	3	1	T	0	6.2	N	33	N	25	15	10	5	3.6	83
ARKANSAS																																	
FORT SMITH	449	1001.9	1019.2	67	38	52.3	2.3	82	10	19	14	0	9	39	64	1.10	- 2.08	0.42	8	0	0.0	0	7.8	ENE	27	W	22	17	5	8	3.7	70
LITTLE ROCK	257	1006.1	1019.5	66	41	53.3	3.8	80	10+	25	15	0	6	41	67	4.50	0.38	2.51	10	6	0.0	0	7.8	NNW	33	S	23	15	5	10	4.3	61
TEXARKANA	361	1005.4	1019.0	69	46	57.7	4.0	83	6	28	14	0	2	43	65	4.22	- 0.11	2.08	8	2	0.0	0	8.5	NW								81
CALIFORNIA																																	
BAKERSFIELD	494	1001.1	1018.9	64	45	54.7	- 1.2	79	1	35	22	0	0	46	76	0.94	0.45	0.48	5	0	0.0	0	5.2	ESE	23*	NNW	15	6	10	14	6.7	
BISHOP	4108	875.5		64	28	45.9	0.1	75	11+	17	22	0	24			0.15	- 0.38	0.06	4	0	0.0	0						9	11	10	5.4	
BLUE CANYON	5280	839.5		49	36	42.5	- 2.7	67	28	24	21	0	14			16.56	9.81	3.56	14	0	31.4	14						6	2	22	7.6	
BURBANK	699	990.9	1017.0	71	47	59.0	- 1.4	88	10	38	22+	0	0	41	57	1.83	0.78	1.32	4	1	0.0	0	6.3	SSE	28*	NW	7	13	4	13	5.1	
EUREKA U	43	1015.2		59	47	52.5	1.3	67	1	39	21	0	0			6.91	2.30	1.48	20	1	0.0	0	7.5	SE#	33	SE	22	0	8	22	8.3	42
FRESNO	326	1006.7	1018.7	61	43	52.1	- 1.1	76	1	34	22	0	0	46	83	2.54	1.59	0.74	10	1	0.0	0	5.2	ESE	27	NW	15	2	7	21	8.1	38
LONG BEACH	34	1015.8	1017.4	71	49	60.1	- 0.3	85	1	40	22	0	0	48	70	2.82	1.79	1.59	4	1	0.0	0	5.1	WNW	29*	NW	21+	12	5	13	5.3	
LOS ANGELES	97	1013.2	1017.0	71	53	61.8	2.5	84	1	45	18	0	0	49	67	2.76	1.67	1.31	5	0	0.0	0	7.6	ENE	28*	NNW	21+	12	5	13	5.3	
LOS ANGELES U	312			71	54	62.3	- 0.4	84	10	47	22	0	0			2.15	1.07	1.21	4	1	0.0	0	6.8	NE#	34	NW	21	14	6	10	4.6	73
MT SHASTA R	3544	893.1		49	32	40.4	- 1.4	66	11	23	16	0	19			7.21	3.24	1.78	11	0	17.6	6						3	5	22	7.8	
OAKLAND	3	1017.9	1018.4	59	49	54.0	- 0.7	67	1	44	30+	0	0	48	82	3.19	1.46	1.00	11	0	0.0	0	7.8	SE	40*	SW	5	6	9	15	6.7	
POINT ARGUELLO R	367	1003.8		66	43	54.9	- 0.4	83	10	33	18	0	0			2.21	1.30	1.15	9	0	0.0	0	7.0		25*	NW	20	9	8	13	5.6	
RED BLUFF	341	1005.1	1018.1	59	42	50.8	- 3.7	71	10	33	22	0	0	43	78	4.96	2.67	1.30	12	0	0.0	0	9.4	SSE	38	SW	5	3	8	19	7.8	49
SACRAMENTO	17	1017.5	1018.9	59	44	51.6	- 2.8	72	1	34	22+	0	0	48	90	4.35	2.90	0.93	11	0	0.0	0	4.6	SE	34	S	5	3	6	21	7.9	36
SACRAMENTO U	23			59	46	52.6	- 2.1	72	1	36	22+	0	0			3.92	2.38	0.79	12	0	0.0	0										
SANDBERG R	4517	863.9		53	40	46.7	- 2.3	66	12+	26	21	0	5			2.48	1.56	1.30	6	0	3.1	2	14.6	ENE	62*	NNW	21	10	6	14	5.8	
SAN DIEGO	13	1013.2	1016.6	70	52	61.2	- 0.1	81	29	45	23+	0	0	48	67	1.85	0.95	1.49	6	0	0.0	0	5.6	WNW	28	NE	1	13	11	6	4.4	73
SAN FRANCISCO	8	1017.7	1018.5	62	47	54.4	- 0.4	68	10+	39	22	0	0	48	80	3.29	1.72	0.80	9	0	0.0	0	7.4	SE	54	SSW	5	5	10	15	6.7	
SAN FRANCISCO U	52			62	52	56.7	- 0.7	69	10	45	30	0	0			3.52	1.52	0.97	13	0	0.0	0	6.7	SE#	32	S	5					44
SANTA CATALINA	1568	960.9		65	55	59.9		79	10	48	22+	0	0			2.51		1.68	4	1	0.0	0						13	6	11	5.2	
SANTA MARIA	238	1009.5	1018.3	68	43	55.6	- 0.5	83	10	33	22	0	0	45	73	1.73	0.71	0.96	8	0	0.0	0	7.2	NW	25*	WNW	20	9	10	11	5.5	
STOCKTON	28	1017.5	1019.0	58	44	50.9		71	1	34	22+	0	0	46	87	4.05		1.76	9	1	0.0	0	6.4	SE	27*	SE	23+	1	5	24	8.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
COLORADO																																
ALAMOSA	7536	772.0		51	11	31.0	1.5	63	15+	- 3	30	0	30			0.08	- 0.21	0.04	3	0	1.2	T						18	8	4	3.5	
COLORADO SPRINGS	6173	810.4	1017.6	56	28	42.1	4.6	71	15	20	29+	0	22	21	49	0.46	- 0.06	0.32	2	0	4.2	2	8.7	NNE	29*	N	28	15	6	9	4.5	
DENVER	5283	836.8	1016.7	58	25	41.7	2.5	73	15	15	30	0	29	23	56	0.45	- 0.24	0.45	1	0	3.5	3	7.8	S	29	NW	4	10	12	8	4.9	85
GRAND JUNCTION	4849	861.8	1019.5	56	32	44.0	5.2	69	15	20	29	0	17	26	55	0.36	- 0.22	0.29	2	0	T	0	5.4	SE	29	S	15	12	9	9	4.9	71
PUEBLO	4639	856.6	1017.4	60	27	43.6	3.6	77	15	17	30	0	24	25	55	0.53	0.00	0.24	3	0	T	0	8.3	WSW	38	E	16	18	6	6	3.5	89
CONNECTICUT																																
BRIDGEPORT	7	1013.6	1014.6	55	42	48.7	4.2	62	18	30	26+	0	4	40	75	5.78	1.76	2.26	10	0	T	0	15.1	WSW	56*	WSW	30	4	8	18	7.2	
HARTFORD	169	1007.1	1013.2	55	38	46.5	5.3	73	18	24	26+	0	9	37	74	5.66	1.82	1.86	12	0	T	T	8.0	S	36	W	30	1	8	21	8.0	40
NEW HAVEN	6	1013.2		55	41	47.9	4.5	63	18	25	26	0	5			8.58	4.53	4.68	11	0	T	0	9.2		44	S	30	5	5	20	7.4	44
DELAWARE																																
WILMINGTON	78	1011.9	1015.1	57	39	48.0	2.6	69	18	27	25	0	7	39	72	6.87	3.34	2.96	10	0	T	T	9.5	WNW	32*	ENE	6	7	10	13	6.4	
DIST. OF COLUMBIA																																
WASHINGTON U	72			60	43	51.5		75	18	34	29+	0	0			6.69	3.87	2.42	9		0.0	0										
WASH NATL AP	14	1011.1	1015.7	59	41	49.8	2.1	73	18	30	25	0	2	38	66	6.70	3.86	2.60	9	0	T	T	9.8	S	37	NE	6	8	10	12	5.9	47
FLORIDA																																
APALACHICOLA U	13	1016.3		68	53	60.3	- 1.0	79	1	35	14	0	0			3.83	1.25	0.97	9	2	0.0	0	8.4	E	32	E	9	13	7	10	4.7	60
DAYTONA BEACH	31	1016.6	1018.5	72	54	63.3	- 2.0	79	23+	38	14	0	0	54	75	7.98	5.65	4.62	11	1	0.0	0	8.7	NW	37*	W	29	9	6	15	6.0	
FORT MYERS	13	1016.9		79	58	68.7	- 0.5	85	9	42	15	0	0			3.45	2.25	3.21	6	2	0.0	0	10.1		31*	W	29	12	8	10	5.2	
JACKSONVILLE	24	1016.9	1018.4	71	50	60.5	- 1.2	80	27	31	15	0	1	51	76	2.70	1.01	0.88	8	0	0.0	0	9.4	NW	41	NW	1	10	7	13	5.5	62
KEY WEST	5	1015.6	1016.7	79	69	74.0	- 0.1	85	5	56	15	0	0	64	74	6.14	3.34	4.81	7	3	0.0	0	13.1	ENE	32	NW	29+	7	13	10	5.8	59
LAKELAND U	214			74	57	65.8	- 1.1	84	27	40	14	0	0			5.71	4.12	3.97	10	3	0.0	0	7.8					10	8	12	5.4	59
MIAMI BEACH	9			77	68	72.8	- 1.0	85	6+	49	15	0	0			2.30	- 0.23	1.40	7		0.0	0	14.7					9	11	10	5.7	51
MIAMI	7	1015.7	1017.0	78	64	71.2	- 1.2	84	6	45	15	0	0	63	75	1.43	- 1.40	0.68	6	2	0.0	0	10.2	ENE	25*	WSW	29	5	11	14	6.6	
ORLANDO	106	1013.5	1018.2	75	56	65.4	- 0.5	82	22+	39	14	0	0	55	73	6.39	4.82	3.86	8	0	0.0	0	9.6	ENE	31*	WNW	29	11	6	13	5.6	
PENSACOLA	13			68	48	58.1		80	1	30	15+	0	2			5.34		2.96	11	2	0.0	0	8.5	N	43	NW	29					52
TALLAHASSEE	58	1016.2	1019.1	70	45	57.1	- 2.1	80	1	23	15	0	6	48	76	2.88	0.44	1.04	11	0	0.0	0	9.8	N	37*	WNW	29	12	8	10	5.1	
TAMPA	19	1016.6	1018.3	76	55	65.6	- 1.2	84	22	35	15	0	0	56	74	6.12	4.66	4.22	10	3	0.0	0	12.3	E	40*	WNW	29	13	5	12	5.4	60
WEST PALM BEACH	15	1016.8	1017.9	78	63	70.5	- 2.0	84	24	45	30	0	0	59	70	3.02	0.16	1.27	7	1	0.0	0	10.7	ENE	27*	ENE	18	5	14	11	6.3	
GEORGIA																																
ATHENS	803	989.3	1018.6	65	40	52.4	0.9	77	19	25	15	0	7	41	70	5.44	2.51	2.00	8	1	T	0	7.9	WNW	30*	WNW	29	13	4	13	5.2	
ATLANTA	1005	976.6	1019.2	63	41	51.5	0.4	74	19	25	15	0	7	40	69	3.81	0.85	1.71	9	1	T	0	7.8	WNW	36*	N	29	9	9	12	5.5	67
AUGUSTA	143	1011.5	1018.4	69	40	54.5	0.4	80	19	23	15	0	8	42	69	3.63	1.45	1.50	8	1	0.0	0	7.5	WNW	37*	W	29	13	5	12	5.2	
COLUMBUS	385	1004.7		67	42	54.3	0.2	78	22	26	15	0	8			4.80	2.21	1.80	7	1	0.0	0	8.1		35*	NW	29	11	9	10	5.3	
MACON	356	1005.0	1018.9	68	42	55.3	- 0.1	78	22	26	15	0	5	41	66	2.69	0.24	0.82	8	0	0.0	0	7.9	NW	35	NW	29	12	6	12	5.1	71
ROME	637	996.0		63	36	49.7	0.5	77	19	19	15	0	14			4.35	0.93	2.45	10	1	T	0						11	8	11	5.4	
SAVANNAH	48	1016.0	1018.5	69	45	57.3	0.0	76	21+	27	15	0	4	47	73	2.28	0.23	1.16	9	0	0.0	0	10.5	WNW	33	NW	29	12	8	10	4.8	68
THOMASVILLE U	283			68	49	58.5	- 0.9	80	22	30	15	0	2			2.57	0.49	0.87	10	0	0.0	0										
HAWAII																																
HILO	31	1014.4	1016.4	82	66	73.7	0.5	86	23	62	20	0	0	65	78	8.24	- 5.13	2.08	22	0	0.0	0	9.1	WSW	32	N	10	3	17	10	6.3	43
HONOLULU	7	1016.0	1016.4	84	70	77.1	1.2	89	28	64	30	0	0	63	63	0.20	- 1.96	0.17	5	0	0.0	0	9.3	ENE	26	NE	5	10	12	8	5.2	55
KAHULUI	44	1013.2	1016.3	84	66	74.7		88	17	61	24+	0	0	64	71	0.73		0.63	3	0	0.0	0	11.8	ENE	29*	N	9	13	12	5	4.4	81
LIHUE	115	1011.7	1017.4	83	70	76.4	1.9	86	1	64	28	0	0	66	71	0.58	- 3.95	0.24	8	0	0.0	0	11.0	ENE	31	NE	9	5	13	12	6.4	68
IDAHO																																
BOISE	2838	921.5	1019.0	52	36	43.7	4.6	67	1	23	30	0	10	34	73	2.41	1.21	0.55	13	1	1.0	T	8.5	SE	38	SW	6	2	7	21	7.9	33
IDAHO FALLS 42NW R	4790			42	20	31.2	3.1	62	14	- 2	30	0	29			0.97	0.64	0.24	8		0.0	0	5.1	NNE	33A	SSW	4					
IDAHO FALLS 46W R	4933	849.7		41	21	31.4	1.6	62	14	- 1	30	0	28			0.98	0.57	0.35	5	0	5.2	5	5.0	WSW	22A	SW	8+					
LEWISTON	1413	969.9		51	35	42.9	3.1	64	1	19	21	0	6			0.97	- 0.26	0.26	10	0	T	0						1	4	25	8.9	
POCATELLO	4444	864.9	1020.5	47	29	38.3	3.3	64	14	14	30	0	20	32	80	1.49	0.50	0.56	11	0	3.1	2	9.7	SSW	36	SW	4	1	7	22	8.8	41
ILLINOIS																																
CAIRO U	314	1005.6		60	42	51.3	3.4	72	21+	30	30	0	2			1.89	- 1.98	1.02	7	1	T	0	8.7	S#	34	S	22	7	10	13	6.0	57
CHICAGO O HARE	658	990.8	1015.9	52	32	41.9		69	17	18	24	0	18	35	77	2.00		0.87	6	2	T	T	9.4	SSW	25*	WNW	11	8	8	14	6.4	
				54	27	40.4	5.4	70	17	23	24	0	9	35	70	1.21	- 0.99	0.81	8	1	T	0	11.8	WNW	38	S	22	6	11	13	6.4	43

See footnotes at end of table

CLIMATOLOGICAL DATA

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State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation						Wind					No. of days (sunrise to sunset)				
												No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
ILLINOIS	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MOLINE	582	994.4	1016.9	53	33	43.1	4.4	67	16	20	30	0	15	35	75	1.84	- 0.11	1.10	6	3	T	T	9.4	NW	34	NW	28+	8	5	17	6.6	51
PEORIA	652	995.4	1018.2	53	33	43.0	3.3	69	17	22	30+	0	14	34	74	1.94	- 0.20	1.33	8	2	0.4	T	9.3	S	32	SE	22	11	1	18	6.2	51
ROCKFORD	728	987.9	1015.5	53	34	43.2	6.1	65	16	21	24	0	15	35	73	2.34	- 0.03	1.21	4	4	T	0	9.8	NW	25*	NW	28+	8	4	18	6.8	
SPRINGFIELD	588	993.8	1017.5	56	34	45.2	3.9	71	17	21	30	0	15	35	71	1.51	- 0.85	1.11	7	0	T	T	11.6	S	30	S	22	11	6	13	5.4	61
INDIANA																																
EVANSVILLE	381	1002.6	1018.9	59	35	47.1	2.3	73	10	21	3	0	16	35	66	1.53	- 1.63	0.80	6	2	T	T	7.5	NW	26	S	22	8	10	12	6.2	46
FORT WAYNE	791	984.9	1016.5	54	36	45.2	5.8	68	17	23	24	0	12	36	74	1.71	- 0.84	0.63	10	1	1.4	T	10.4	W	38	SW	23	6	6	18	6.9	46
INDIANAPOLIS	793	987.2	1017.6	55	35	45.1	4.2	68	9	22	24+	0	15	36	74	2.18	- 0.91	1.15	8	1	0.3	T	9.9	NW	30*	W	23	7	11	12	6.2	56
SOUTH BEND	768	987.4	1015.7	53	37	45.1	6.0	67	17	25	24	0	10	35	71	2.32	- 0.33	0.93	10	0	7.2	3	11.1	SW	32*	WSW	23+	3	8	19	7.6	
IOWA																																
BURLINGTON	694	991.4	1017.4	54	34	43.9	4.5	73	17	21	30	0	15	34	72	1.46	- 0.42	0.89	8	2	0.1	T	11.7	NW	40	NW	22	10	4	16	6.2	55
DES MOINES	948	985.6	1017.3	53	34	43.2	5.3	67	8	20	30	0	16	32	69	1.36	- 0.40	1.03	3	2	T	T	10.5	NW	36	NW	30	9	7	14	6.1	49
DUBUQUE	1065	990.6		49	32	40.5	5.7	63	16	19	24	0	19			4.66	2.07	3.45	6	1	0.2	T			28*	NW	11	7	4	19	7.0	
SIOUX CITY	1095	974.7	1016.9	54	29	41.4	5.8	65	7	15	23	0	23	29	68	0.27	- 0.89	0.27	1	0	0.0	0	9.3	NW	46	NW	22	10	7	13	5.8	74
WATERLOO	868	983.2	1015.7	51	31	40.8	5.6	65	9	17	30	0	19	32	74	2.04	0.21	1.48	4	1	0.4	T	10.8	NW	37*	NW	22	7	7	16	6.6	
KANSAS																																
CONCORDIA	1470	966.5	1017.2	58	33	45.4		73	7	18	14	0	14	32	63	0.09		0.06	3	2	0.0	0	12.0	SSE	36	NW	28	15	9	6	3.9	77
DODGE CITY	2594	928.1	1017.6	61	32	46.5	3.7	79	16	18	29	0	16	27	55	0.08	- 0.56	0.08	1	3	0.0	0	12.7	SSE	40	N	22	13	14	3	3.8	77
GOODLAND	3645	888.0	1017.2	58	25	41.4	3.4	79	15	17	30+	0	30	24	59	0.29	- 0.20	0.29	2	1	2.7	2	11.8	WSW	36*	NNW	28	17	8	5	3.5	
TOPEKA	877	981.6	1017.9	60	35	47.4	4.8	79	16	16	14	0	13	34	65	0.96	- 0.54	0.62	4	0	T	T	11.1	S	56	SW	16	15	5	10	4.5	66
WICHITA	1321	968.2	1017.8	59	36	47.3	2.9	76	16	21	14	0	12	36	70	1.04	- 0.45	0.80	4	4	0.0	0	10.5	S	43	N	22	16	5	9	4.1	69
KENTUCKY																																
COVINGTON	869	985.3	1017.6	56	34	45.2	1.5	69	17	17	3	0	15	36	74	0.94	- 2.07	0.24	12	1	2.3	T	8.8	SSW	23*	SSW	22+	5	6	19	7.4	
LEXINGTON	979	982.4	1018.7	58	36	46.8	2.1	73	22	24	24+	0	11	35	69	1.81	- 1.48	0.82	11	1	1.0	1	8.8	SSW	21*	SSW	22	8	4	18	6.7	
LOUISVILLE	474	998.8	1018.4	59	38	48.4	4.2	71	22+	23	24	0	9	38	71	1.69	- 1.51	0.80	12	2	T	T	7.6	S	30	S	17	6	6	18	6.7	47
LOUISIANA																																
ALEXANDRIA	92	1014.3	1019.2	70	42	55.9		83	6	25	14	0	10	45	73	3.87		1.55	9	2	0.0	0	5.8	S	25	NW	22	11	8	11	5.4	
BATON ROUGE	64	1015.5	1018.9	71	49	59.8	1.4	84	7+	32	15	0	1	48	70	6.32	2.23	1.90	7	3	0.0	0	8.1	ESE	24	N	1	8	9	13	5.9	
LAKE CHARLES	14	1016.7	1018.7	72	51	61.6	2.0	86	6	35	24	0	0	50	71	4.70	0.48	1.73	8	4	0.0	0	9.9	NNE	29*	NNE	29	10	8	12	5.5	
NEW ORLEANS	3	1016.4	1018.6	70	50	60.3	0.8	81	21	33	15	0	0	53	80	7.85	4.51	3.61	7	3	0.0	0	8.3	ENE	28*	NNE	9	7	10	13	6.3	
NEW ORLEANS AUDUBON	6			72	56	64.0		81	21+	41	2	0	0			10.15		4.03	8	5	0.0	0	4.7	NE#	18	NW	28	10	10	10	5.7	35
SHREVEPORT	252	1010.1	1019.4	70	46	58.0	2.8	84	6	29	14	0	3	45	67	6.72	2.51	4.01	11	5	0.0	0	10.9	SSE	29	S	22	14	5	11	4.6	62
MAINE																																
CARIBOU	624	989.5		41	28	34.5	4.3	61	30	13	28	0	21			7.74	4.70	1.69	19	0	16.8	11						1	3	26	8.9	
PORTLAND	61	1009.1	1013.2	50	34	41.7	3.6	65	18	20	26	0	15	35	80	9.81	5.64	2.75	14	0	T	0	10.5	NNE	48	S	30	3	5	22	8.3	31
MARYLAND																																
BALTIMORE	146	1010.8	1015.5	57	37	47.3	1.8	75	18	25	13	0	10	37	70	6.85	3.72	3.07	10	0	T	0	9.4	WNW	41	W	30	11	9	10	5.8	59
BALTIMORE U	14			58	44	51.3	2.5	74	18	34	25	0	0			6.58	3.48	2.79	9		0.0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	629	988.4		52	38	45.0	3.0	72	18	24	26+	0	8			8.79	4.26	3.37	13	0	0.0	0	16.1	WNW	67	S	30					30
BOSTON	15	1008.3	1013.0	55	42	48.3	3.4	71	18	30	25	0	2	38	72	7.74	3.81	2.38	12	2	0.0	0	14.7	SW	50	S	30	3	6	21	7.9	34
NANTUCKET	43	1013.0	1013.5	54	43	48.8	3.4	64	8	27	26	0	1	42	78	3.49	- 0.56	0.97	16	3	0.0	0	14.8	N	65	SW	30	1	8	21	8.1	30
PITTSFIELD	1170			50	34	42.0	4.7	67	18	18	26	0	14			5.18	1.27	1.23	16		1.3	1										
WORCESTER	986	975.6	1012.8	50	36	42.9	3.7	68	18	22	25	0	12	35	77	8.20	3.94	2.28	14	0	T	0	10.7	W	31*	W	30	6	3	21	7.7	
MICHIGAN																																
ALPENA	689	987.3		49	33	40.8	5.2	61	17	17	30	0	16			1.67	- 0.70	0.52	13	0	0.3	T	7.8	SW	29	NW	23	1	8	21	8.5	39
DETROIT	619	988.1	1015.1	53	39	46.0	5.6	66	17	23	30	0	6	35	69	1.27	- 0.94	0.47	9	0	T	T	12.1	SW	42	SW	23	4	5	21	7.9	35
DETROIT M WAYNE CO	633	988.3	1015.5	51	34	42.5	3.1	65	17	22	30+	0	14	35	76	1.27	- 1.00	0.40	7	1	T	T	9.6	SSW				4	8	18	7.6	
DETROIT WILLOW RUN	711	986.5	1015.2	52	36	44.1	4.1	66	17	22	25	0	11	36	75	1.05	- 1.20	0.39	6	1	T	T	11.5	NW	44*	SW	23	4	7	19	7.7	
FLINT	766	986.8	1015.5	52	35	43.4	5.5	65	17	20	30	0	11	35	75	1.59	- 0.59	0.89	10	2	T	T	11.9	SW	46*	SW	23	2	8	20	8.0	
GRAND RAPIDS	689	988.8	1015.2	52	36	44.2	6.0	65	17	22	30	0	10	36	77	2.50	0.01	1.32	11	1	0.9	T	10.5	NW	43	SW	23	3	8	19	7.5	30

See footnotes at end of table

CLIMATOLOGICAL DATA

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State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90 F. or above	Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
LANSING	852	982.4	1014.9	53	35	43.6	5.7	66	17	23	24	0	14	36	77	1.33	- 0.88	0.58	9	1	T	T	9.2	WNW	47	SW	23	4	6	20	7.6	35
MARQUETTE U	677	985.7		45	34	39.3	5.5	57	22+	15	30	0	11			2.68	- 0.60	0.66	15	1	8.6	4	8.5	W#	32	NW	23	0	7	23	8.8	30
MUSKEGON	627	991.6	1014.8	51	37	43.9	5.3	63	22	25	3	0	8	37	78	3.98	1.04	1.85	14	1	1.7	T	13.7	NW	29*	NNW	29+	2	6	22	8.1	
SAULT STE MARIE	721	989.6	1012.6	46	32	38.8	6.5	57	6	13	30	0	15	34	84	3.53	0.20	1.83	15	1	5.8	3	10.6	NW	48*	WNW	23	1	7	22	8.6	27
MINNESOTA																																
DULUTH	1426	972.2	1014.6	43	28	35.7	8.9	58	5	7	30	0	20	27	72	1.51	- 0.27	1.38	5	3	1.6	2	11.8	WNW	42	NE	21	2	7	21	8.0	36
INTERNATIONAL FALLS	1179	971.6	1013.7	40	23	31.3	7.5	59	5+	- 4	30	0	29	25	80	1.12	- 0.34	0.43	10	0	5.1	2	11.2	NW	31*	NW	23	4	4	22	7.9	
MINNEAPOLIS	822	981.5	1015.7	48	28	38.3	7.8	61	7	12	30	0	23	28	69	0.52	- 0.88	0.46	4	1	T	T	10.0	SSE	31	NW	28	6	7	17	7.1	46
ROCHESTER	1297	967.2	1016.0	48	30	38.8	6.8	60	8	15	30+	0	20	31	74	2.08	0.51	1.81	7	2	0.3	T	13.5	WNW	32*	WNW	23+	6	8	16	6.9	
ST CLOUD	1034	975.8		47	26	36.2	6.7	59	6+	8	30	0	26			0.76	- 0.57	0.65	5	2	0.5	T						5	8	17	7.3	
MISSISSIPPI																																
JACKSON	305			67	45	56.4	0.0	79	18+	25	14	0	5			4.55	0.85	2.54	6	1	0.0	0	8.8	SSE	29	NNW	29	11	9	10	5.0	
MERIDIAN	292	1005.6	1019.7	67	41	54.0	- 0.1	79	22+	21	15+	0	9	44	73	3.46	0.36	1.30	9	1	0.0	0	7.1	S	26*	NNW	30	9	8	13	5.5	
VICKSBURG U	234	1009.4		67	48	57.6	1.4	78	18	32	14	0	1			3.78	- 0.65	2.28	7	2	0.0	0	8.7		32	SW	5	9	11	10	5.1	61
MISSOURI																																
COLUMBIA	778	988.4	1017.3	57	37	46.9	3.6	74	17	25	23+	0	9	34	66	1.76	- 0.51	0.87	6	1	0.0	0	11.4	SSE	37	NW	12	14	2	14	5.3	60
KANSAS CITY	742	982.1	1017.4	60	39	49.8	5.7	76	16+	23	14	0	4	33	57	2.30	0.50	1.79	5	1	0.0	0	8.9	S	28	SW	16	15	6	9	4.3	67
ST JOSEPH	809	982.2		61	34	47.4	6.0	77	16	18	14	0	14			1.04	- 0.64	0.54	4	1	T	0	8.3	WNW	25*	NNW	28	13	8	9	4.6	
ST LOUIS	535	997.3	1018.4	56	36	45.7	1.6	72	17+	24	24	0	13	36	71	2.90	0.33	2.53	7	2	T	0	9.5	WNW	32	NW	22	13	5	12	5.1	63
ST LOUIS RFC	465			57	41	48.9	3.1	73	9	30	23	0	3			2.86	0.17	2.43	7		T	0										
SPRINGFIELD	1265	970.3	1018.5	60	34	47.4	2.4	78	17	23	24+	0	12	35	67	1.62	- 1.14	0.84	7	0	0.0	0	10.4	SSE	34	N	28	17	4	9	4.0	69
MONTANA																																
BILLINGS	3567	890.0	1016.2	49	27	38.0	1.9	64	14	4	21	0	24	19	51	0.05	- 0.58	0.04	2	0	T	T	12.7	WSW	38	NW	27	5	6	19	7.1	54
GLASGOW	2277	938.5		43	20	31.9	3.7	60	4	-12	22	0	26			0.21	- 0.26	0.20	3	0	2.0	2						5	8	17	7.0	
GREAT FALLS	3662	885.8	1015.8	49	29	38.6	3.3	65	14	- 4	21	0	19	16	42	0.21	- 0.54	0.19	3	0	2.1	2	16.4	SW	42	SW	26	2	10	18	7.6	35
HAVRE	2582	924.3		45	19	31.9	1.9	62	26	-11	21	0	26			0.07	- 0.43	0.07	2	0	1.4	1	9.6	SW#	49	W	2	5	7	18	7.3	64
HELENA	3893	872.2	1017.7	46	23	34.8	3.2	63	14	- 3	21	0	27	20	60	0.29	- 0.28	0.12	6	0	2.7	2	8.3	WSW	35	W	27	1	5	24	8.6	35
KALISPELL	2965	910.7		43	25	34.0	5.0	55	26	7	30	0	25			0.71	- 0.72	0.24	11	0	2.5	1	5.6					1	5	24	8.6	
MILES CITY	2626			50	25	37.7	5.1	67	26	7	21	0	24			0.18	- 0.25	0.14	4	0	0.2	T	8.1	SE	30*	WNW	27					
MISSOULA	3190	906.8	1018.5	44	26	34.8	4.3	58	26	8	30	0	26	27	77	0.61	- 0.29	0.25	9	0	3.0	2	6.3	SSE	31	W	27	0	6	24	8.6	29
NEBRASKA																																
GRAND ISLAND	1841	949.8	1017.4	58	27	42.5	4.3	74	5	11	14	0	21	28	63	0.25	- 0.51	0.21	2	1	T	T	10.9	S	30*	N	28+	14	6	10	5.1	
LINCOLN U	1150			58	34	46.2	5.4	71	5	19	14	0	13			0.20	- 1.06	0.16	4	0	0.0	0	10.1	S#	37	N	28	12	9	9	4.8	77
NORFOLK	1544	959.9		54	27	40.1	4.2	69	27+	11	14	0	22			0.20	- 0.71	0.12	3	1	0.0	0						10	9	11	5.3	
NORTH PLATTE	2779	915.7	1017.0	55	22	38.8	3.3	74	15	11	13	0	30	24	63	0.39	- 0.11	0.27	3	1	T	T	9.2	NW	38	NW	28	13	12	5	4.4	86
OMAHA	978	976.3	1017.0	57	32	44.1	5.2	69	7	20	29+	0	17	29	61	0.39	- 0.87	0.24	3	1	0.0	0	9.8	SSE	34	NW	28	14	4	12	5.2	62
OMAHA N OMAHA AP	1323	968.0		55	32	43.3	6.4	66	8+	17	23	0	16			0.31	- 1.00	0.18	4	0	0.0	0						10	9	11	5.3	
SCOTTSBLUFF	3950	879.1	1017.6	55	24	39.9	4.6	71	15	14	30	0	26	22	57	0.11	- 0.35	0.10	2	0	T	T	10.2	NW	30*	NW	29	8	9	13	5.7	
VALENTINE	2587	923.8		54	24	38.7	5.1	78	15	8	23	0	26			0.51	0.02	0.31	4	0	3.1	3	9.7	W#	34	N	28	9	13	8	5.0	81
NEVADA																																
ELKO	5075	846.4	1020.8	47	22	34.7	0.5	63	14	6	22	0	28	28	78	1.94	1.06	0.57	9	1	5.3	3	4.5	NE	23*	S	14	3	8	19	7.8	
ELY	6257	809.6	1019.6	49	20	34.3	0.6	65	12	2	22+	0	28	23	69	0.60	0.01	0.44	4	2	5.0	4	8.8	S	40	SE	6	4	9	17	7.3	68
LAS VEGAS	2162	951.2	1018.0	66	44	55.0	2.0	79	14	33	22	0	0	32	45	0.33	0.02	0.26	4	0	0.0	0	7.5	WSW	29*	SW	15	11	8	11	5.3	82
RENO	4404	863.6	1019.7	54	27	40.2	0.9	67	13	18	22+	0	22	29	70	1.44	0.87	0.54	7	0	3.1	T	5.3	S	42	S	5	5	7	18	7.4	61
WINNEMUCCA	4299	869.3		53	27	40.0	4.2	67	14	14	18	0	24			1.07	0.27	0.36	8	0	0.3	T	6.9	S	34	W	6	3	7	20	7.8	37
NEW HAMPSHIRE																																
CONCORD	339	1002.5	1012.9	51	34	42.3	4.7	68	18	20	26	0	15	36	80	6.78	3.06	1.97	16	0	T	T	6.4	NW	36	SW	30	3	3	24	8.5	27
MT WASHINGTON OBS	6262	798.0		29	17	23.0	2.7	43	30+	- 5	25	0	29			17.57	10.96	4.48	23	1	29.6	8	36.6	W#	113Y	NE	7	1	3	26	9.3	9
NEW JERSEY																																
ATLANTIC CITY	58	1013.2	1015.3	59	42	50.2	3.5	71	18	27	26+	0	4	40	70	6.46	2.80	2.87	9	0	0.0	0	11.8	NW	38*	ENE	7+	10	6	14	6.2	44
ATLANTIC CITY U	10			56	44	49.9	1.6	63	11	29	25	0	2			5.46	1.67	2.78	9		0.0	0	12.9		51*	W	30					
NEWARK	11	1013.2	1014.4	57	43	49.7	4.3	73	18	31	26+	0	3	38	68	5.68	2.31	2.09	11	0	T	0	11.6	SW	37*	ENE	7	8	9	13	6.5	

See footnotes at end of table

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90°F. or above	Temperature: No. of days: Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
NEW JERSEY	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
TRENTON U	56	1006.8		57	43	50.1	4.3	70	18	31	25	0	2			6.01	2.85	2.37	10	0	T	T	9.8	NW#	41	NE	7	3	14	13	6.7	53
NEW MEXICO																																
ALBUQUERQUE	5310	850.0	1018.3	58	33	45.7	1.6	68	16+	24	18	0	12	28	56	0.29	- 0.09	0.19	3	0	T	0	6.7	N	42	W	16	15	9	6	3.8	79
CLAYTON	4969	845.5		61	30	45.6	3.9	80	15	20	28	0	19			T	- 0.33	T	0	1	0.0	0						23	2	5	2.6	
RATON	6379	805.7		59	23	41.2	3.7	73	15	10	29+	0	25			T	- 0.39	T	0	0	T	T						16	10	4	3.6	
ROSWELL	3619	894.4		67	29	47.9	3.0	83	16	12	29	0	18			0.05	- 0.29	0.03	2	1	0.0	0	10.0		35	W	22	16	11	3	3.4	90
SILVER CITY	5373	836.9		63	34	48.3		73	13+	22	26	0	12			0.31		0.13	3	1	T	T						15	7	8	4.0	
NEW YORK																																
ALBANY	277	1009.7	1013.4	51	38	44.4	5.3	63	18	23	25	0	13	37	76	4.15	1.45	1.08	15	0	T	0	8.2	SSE	37	SW	30	1	4	25	8.8	26
BINGHAMTON	1590	953.4	1013.2	47	35	41.0	3.5	61	18	20	30	0	11	36	82	4.15	1.64	1.55	16	0	3.5	2	11.7	WNW	42	W	30	0	5	25	8.9	16
BUFFALO	705	985.2	1013.6	49	38	43.6	5.0	63	23+	23	30	0	5	37	78	5.07	1.47	1.77	20	1	3.1	3	12.3	WNW	38	SW	23	0	5	25	9.0	18
NEW YORK U	132	1002.9		56	45	50.4	3.4	69	18	34	30	0	0			8.24	4.85	3.81	10	0	T	0	10.1	SW#	40	NE	7	10	9	11	5.7	49
NEW YORK LA GUARDIA	19	1012.4	1014.1	56	46	50.8	3.4	69	18	35	25	0	0	39	66	7.32	3.73	3.68	10	0	T	0	12.6	W	48	NE	7	6	10	14	6.8	
ROCHESTER	543	994.1	1013.6	51	38	44.3	4.2	64	23+	20	25	0	7	38	79	4.32	1.81	1.37	16	0	4.4	4	12.6	WSW	34	NW	30+	1	5	24	8.9	19
SCHENECTADY	217			51	39	44.9	6.1	66	18	26	30+	0	9			4.61	1.93	1.32	16	0	T	0						4	11	15	6.7	
SYRACUSE	417	990.5	1012.7	52	38	44.9	4.7	64	23+	20	25	0	7	34	67	5.65	2.75	1.69	19	0	4.0	3	9.1	WSW	34	S	23	1	3	26	8.9	24
NORTH CAROLINA																																
ASHEVILLE U	2203	938.2		57	38	47.8	1.3	71	17	26	30+	0	11			4.42	2.20	2.48	12	0	1.2	T	9.3	NW#	38	NW	29	9	7	14	5.6	56
CAPE HATTERAS R	7	1015.7	1016.3	65	48	56.5	0.3	75	21	33	15+	0	0	47	71	3.70	- 0.39	1.28	6	1	0.0	0	11.7	WNW	52*	NNE	29	12	8	10	5.3	58
CHARLOTTE	735	989.4	1017.8	64	41	52.7	1.8	76	19	28	16+	0	7	38	61	3.46	0.93	1.92	6	0	T	0	6.7	NW	25	NW	7	11	6	13	5.5	65
GREENSBORO	891	986.6	1017.7	61	39	49.6	1.7	71	19+	25	16	0	10	36	64	4.77	2.09	2.05	8	0	T	0	8.3	WNW	32	NW	29	9	8	13	5.9	52
RALEIGH	433	1003.1	1016.9	63	39	51.0	1.0	73	18	26	15	0	10	38	66	7.06	4.29	4.70	7	0	0.0	0	7.8	WNW	25*	NNW	29	10	9	11	5.4	53
WILMINGTON	30	1015.0	1017.7	67	44	55.4	0.0	77	23	30	15	0	4	44	69	4.83	1.74	2.37	6	2	0.0	0	8.5	W	38	SW	29	13	8	9	4.8	72
WINSTON SALEM	967	982.1	1017.7	60	40	50.2	1.3	71	19+	28	16+	0	8	37	64	4.60	1.82	1.83	7	1	T	0	8.1	NW	29*	NNW	29	10	6	14	5.7	
NORTH DAKOTA																																
BISMARCK	1647	954.4	1016.4	47	20	33.2	4.8	65	26	6	23	0	30	19	61	T	- 0.59	T	0	0	T	T	9.5	WNW	38	NW	29	6	11	13	6.4	59
FARGO	900	980.2	1015.5	46	23	34.7	7.1	62	7+	2	23	0	26	22	63	0.12	- 0.72	0.12	1	0	0.4	T	10.9	SSE	33	NW	12	5	5	20	7.4	48
WILLISTON	1899	945.7		45	17	31.4	2.8	60	4	- 9	22	0	30			0.27	- 0.31	0.19	4	0	2.6	2	8.9	SW#	42	NW	27	10	10	10	5.8	59
OHIO																																
AKRON	1209	977.6	1016.3	50	35	42.7	2.9	63	23+	24	30+	0	11	34	74	1.86	- 0.39	0.65	11	0	4.9	3	10.9	WNW	35*	SSW	23	2	5	23	8.4	
CINCINNATI OBS	761			56	39	47.5	2.9	69	22	26	24	0	9			0.80	- 2.15	0.18	12	1	0.4	T	6.6	S#	20	W	29+					39
CINCINNATI U	553	994.4		57	41	49.0		70	22	29	3	0	3			0.70		0.25	9	1	T	0										
CLEVELAND	777	987.3	1015.4	50	37	43.9	4.5	64	23+	25	25	0	8	35	73	1.33	- 1.28	0.24	15	1	0.1	T	11.7	S	36	S	23	1	8	21	8.3	22
COLUMBUS	812	987.1	1017.5	54	35	44.6	2.4	68	22+	23	24	0	14	36	73	0.80	- 1.70	0.20	12	0	1.2	T	9.3	WNW	28	SW	23	3	9	18	7.6	39
COLUMBUS U	724			54	39	46.5	3.2	68	17	28	30+	0	8			0.86	- 1.38	0.27	11	0	0.4	T										
DAYTON	997	984.3	1017.3	56	37	46.1	4.3	69	17	22	24	0	10	36	72	0.69	- 1.98	0.28	10	0	1.1	1	10.6	SSW	35	S	20	7	4	19	7.1	40
MANSFIELD	1296			51	36	43.4	4.0	64	22+	21	25	0	10			1.34	- 1.35	0.37	13	0	1.2	T						3	7	20	7.9	
TOLEDO	676	990.1	1015.8	52	34	43.1	4.5	67	17	21	30+	0	12	36	77	1.78	- 0.26	0.58	12	1	T	0	10.6	WSW	36	SW	23	5	10	15	7.3	34
YOUNGSTOWN	1178	972.6	1015.7	49	36	42.7	2.4	63	17	20	25	0	10	34	74	3.24	0.43	1.37	14	1	8.4	4	11.5	SW	27*	NW	2	1	5	24	8.7	
OKLAHOMA																																
OKLAHOMA CITY	1280	974.2	1018.2	64	41	52.3	4.4	81	7	27	14	0	6	36	60	2.45	0.89	1.69	4	2	0.0	0	12.1	SSE	41	NW	22	14	7	9	4.0	71
TULSA	676	993.7	1018.6	66	39	52.3	3.2	83	16	25	14	0	10	36	58	2.28	0.00	1.65	4	1	0.0	0	11.7	S	34	NW	28+	18	5	7	3.5	74
OREGON																																
ASTORIA	8	1012.7	1013.4	54	42	47.8	1.5	61	11	30	20+	0	5	44	87	13.16	1.96	1.61	27	1	0.0	0	8.6	SE	35*	W	26	2	4	24	8.5	
BURNS U	4151	872.9		47	26	36.5	0.4	64	1	13	29	0	25			1.86	0.70	0.82	12	0	5.1	3						6	5	19	7.3	
EUGENE	361	1002.3		54	40	47.1	1.6	64	25	27	30+	0	4			7.87	2.25	2.51	20	0	0.0	0	7.9		32*	S	6	1	3	26	8.9	
MEACHAM	4050			41	31	35.8	1.4	51	13+	20	20	0	19			5.58	1.43	2.81	18	0	28.6	5						1	5	24	8.6	
MEDFORD	1298	969.5	1017.9	51	35	42.6	- 0.8	59	14+	23	29	0	11	40	91	5.25	2.65	1.52	18	0	0.0	0	4.0	WNW	21*	SE	22+	0	2	28	9.2	
PENDLETON	1482	962.2	1016.5	52	37	44.4	3.6	68	1	23	30	0	7	35	73	2.03	0.63	0.81	13	0	T	T	8.4	SSE	36*	WSW	6	2	6	22	8.2	
PORTLAND	21	1009.5	1015.2	53	39	46.0	0.9	59	11	26	30+	0	5	41	84	5.64	0.31	1.35	25	2	T	T	11.0	ESE	34	S	14	3	2	25	8.5	23
PORTLAND U	30			54	44	48.9	1.7	60	12+	33	20	0	0			7.25	1.21	1.52	24		0.0	0										
ROSEBURG	505	997.5		55	40	47.4	1.3	65	25+	31	20	0	4			6.35	1.89	2.03	21	0	0.0	0	3.7	S#	20	S	6+	0	3	27	9.0	16
SALEM	195	1008.4	1015.8	52	40	46.1	0.9	60	25	25	30+	0	6	41	85	6.52	0.81	1.14	24	2	0.0	0	9.3	S	33*	S	7	4	4	22	8.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
SEXTON SUMMIT R	3836	882.5		45	35	40.3	- 2.5	61	11	24	20	0	12			11.75	7.37	2.96	18	0	4.7	2	14.9	S				3	1	26	8.7	
PACIFIC AREA																																
CANTON ISLAND	11	1008.8		91	79	84.9	1.3	93	17	75	18	27	0			0.57	- 1.04	0.35	5	0	0.0	0	6.3	NE	13*	NE	30+	5	13	12	6.4	
ENIWETOK	16	1009.4		88	78	83.0	0.4	90	2+	75	19+	2	0			4.20	- 2.10	0.79	20	0	0.0	0	14.2									
TAGUAC GUAM R	361			86	73	79.6	0.3	88	7+	67	1	0	0			6.88	- 3.41	1.33	27	3	0.0	0	6.8	E#	23	E	26+					61
JOHNSTON	7	1013.1	1013.2	82	77	79.6	0.0	84	18+	74	4	0	0	73	79	1.68	- 0.38	0.50	14	0	0.0	0	13.1	E	33	E	26	6	16	8	6.0	65
KOROR R	94	1007.7	1010.2	88	76	81.9	0.7	91	15	73	19	7	0	76	87	6.73	- 6.20	1.72	12	5	0.0	0	5.3	E	18	E	21+	0	0	30	9.9	64
KWAJALEIN		1009.7	1009.9	87	77	82.1	0.8	89	18+	73	27+	0	0	76	85	8.81	- 3.32	1.52	21	3	0.0	0	12.6	ENE	35	E	18	1	5	24	8.7	
PONAPE R	123	1004.9	1009.5	88	74	81.0	1.1	89	17+	70	3	0	0	75	84	4.55	-12.30	1.01	21	3	0.0	0	6.3	NNE	16	NE	17	0	9	21	8.4	58
TRUK MOEN ISLAND	5	1009.2	1009.2	87	75	81.0	0.2	88	22+	73	13+	0	0	75	83	7.08	- 5.28	1.64	18	4	0.0	0	4.7	NNE	24	N	9	0	10	20	8.0	63
WAKE	11	1013.6		86	78	81.8	1.4	88	9+	74	25	0	0			3.12	0.04	2.53	8	0	0.0	0	10.1	NE	24*	NE	27	13	14	3	4.5	
YAP R	53	1007.1	1007.8	87	76	81.5	0.0	90	15+	73	5	3	0	76	88	7.47	- 3.68	1.82	16	5	0.0	0	7.2	NE	29	NE	19	0	2	28	9.7	60
PENNSYLVANIA																																
ALLENTOWN	376	1000.4	1014.8	55	38	46.6	4.7	70	18	25	26+	0	8	38	74	6.30	2.97	2.27	10	1	T	0	11.7	WNW	38*	WNW	30	5	11	14	6.7	
ERIE	732	988.2	1014.6	51	39	45.0	3.8	65	22	30	30	0	2	37	73	5.91	2.55	1.43	20	3	6.5	1	17.9	SSW	37*	S	23	1	3	26	9.1	
HARRISBURG	335	1001.5	1015.4	55	36	45.8	1.9	73	18	25	26+	0	11	35	68	5.93	2.98	2.28	11	0	T	T	10.1	WNW	33	NE	7	5	10	15	7.2	47
PHILADELPHIA	5	1010.9	1014.9	57	39	48.0	3.7	70	17	26	25	0	6	39	73	6.67	3.27	2.58	10	0	T	T	10.3	WSW	32	W	30	6	10	14	6.9	55
PITTSBURGH	1137	985.3	1016.1	52	35	43.7	2.9	69	18	21	25	0	14	35	73	2.54	0.30	1.03	13	0	5.8	3	10.5	WNW	30*	WNW	2	0	6	24	8.7	44
PITTSBURGH U	749			54	40	47.3	2.8	69	18	28	25	0	2			2.96	0.62	1.16	14		5.3	0										37
READING U	266	1002.6		57	42	49.3	4.2	75	18	30	26	0	2			6.11	2.71	2.46	9	0	T	T	12.6	W#	43	W	30	5	12	13	7.0	42
SCRANTON	940	979.6	1014.2	52	38	45.1	5.5	67	18+	24	30	0	6	37	73	4.62	1.68	2.23	10	0	1.4	1	8.8	SW	27	SE	23	0	8	22	8.4	37
WILLIAMSPORT	527	990.2	1015.1	53	37	45.1	4.0	69	18	25	4	0	8	35	69	5.08	1.63	2.31	10	0	1.2	T	10.5	W	31*	S	23	0	6	24	8.6	
RHODE ISLAND																																
BLOCK ISLAND	110	1008.5		54	44	48.8	3.1	61	29+	29	26	0	2			5.77	2.06	2.41	12	0	0.1	T						4	10	16	7.3	
PROVIDENCE	55	1007.1	1013.2	55	39	46.9	3.9	71	18	24	26	0	8	38	75	6.53	2.42	3.04	12	1	T	0	11.6	WSW	47*	S	30	5	7	18	7.5	37
SOUTH CAROLINA																																
CHARLESTON	41	1016.2	1018.1	70	44	57.3	1.4	80	22	29	15+	0	4	46	73	4.74	2.65	3.07	10	1	0.0	0	8.0	W	53Y	W	29	14	5	11	4.6	64
CHARLESTON U	9			66	51	58.5	- 0.1	75	19	36	14	0	0			3.92	2.00	2.06	10	0	0.0	0	10.4		41	W	29					
COLUMBIA	217	1005.5	1018.6	67	41	54.3	0.6	79	19	26	15	0	7	41	67	4.20	1.84	2.30	7	0	0.0	0	6.5	WSW	22*	WNW	7	14	4	12	4.8	67
FLORENCE	146	1012.0	1017.8	67	42	54.7	0.1	77	22	28	16	0	3	41	66	3.78	1.47	2.09	7	0	0.0	0	7.9	NNE	25*	NW	7	13	6	11	4.8	
GNVLE SPARTANBURG	957	981.1	1018.4	64	42	52.8	1.1	76	19	27	15	0	6	38	61	4.19	1.35	2.09	9	1	0.0	0	7.6	SW	30	NW	7	11	7	12	5.4	59
SOUTH DAKOTA																																
HURON	1282	968.2	1016.4	51	22	36.4	4.2	69	2	4	23	0	28	24	67	0.84	0.16	0.75	4	1	2.0	2	11.2	SSE	33	NW	28	6	10	14	6.5	65
RAPID CITY	3165	900.7	1016.9	53	27	39.6	4.5	70	15	10	22	0	22	20	51	0.12	- 0.29	0.08	4	0	0.3	T	10.3	NW	38	NW	27	7	9	14	6.4	67
SIOUX FALLS	1420	963.6	1016.3	53	26	39.2	6.6	65	27+	15	23	0	25	27	66	0.36	- 0.64	0.36	2	1	0.0	0	10.2	NNW	29*	NNW	28	7	10	13	6.3	
TENNESSEE																																
BRISTOL	1507	963.2	1018.4	58	36	47.1	1.7	71	22	24	16	0	12	36	69	4.73	2.22	1.75	11	0	6.7	3	4.5	WNW	21*	NNW	7	8	5	17	6.5	
CHATTANOOGA	670	991.8	1019.8	62	40	51.0	2.1	76	19	23	15	0	9	40	72	5.13	1.48	2.66	12	0	T	0	7.8	NNW	41	NW	30	12	4	14	6.0	55
KNOXVILLE	950	983.6	1019.7	57	37	47.3	- 0.9	73	22	25	3	0	12	38	73	5.23	1.99	2.22	12	0	5.9	1	6.6	NE	25	S	22+	9	4	17	6.3	57
MEMPHIS	263	1004.5	1019.4	64	42	53.4	2.8	76	17	27	15+	0	7	42	71	2.72	- 1.66	0.61	8	3	0.0	0	8.3	SE	34	S	22	11	8	11	5.2	62
MEMPHIS U	271			62	46	54.3	2.5	75	17	31	14	0	1			2.58	- 1.59	0.68	8		0.0	0										
NASHVILLE	577	999.0	1019.2	60	38	49.3	0.8	73	22+	24	15	0	11	40	74	2.43	- 0.85	0.72	10	2	T	T	8.6	NW	34	NW	29	8	4	18	6.7	40
OAK RIDGE	905	986.1		59	37	47.8	0.5	74	22	24	15	0	11			4.30	0.53	1.62	12	0	0.1	0	4.1		33Y		23	9	7	14	6.2	
TEXAS																																
ABILENE	1759	955.8	1017.6	70	45	57.4	4.4	89	7	29	29	0	2	41	60	2.67	1.56	1.65	8	2	0.0	0	8.8	SSE	35	NE	8	13	10	7	4.3	73
AMARILLO	3607	888.1	1016.4	64	35	49.5	4.0	79	16	22	29	0	12	30	52	0.33	- 0.33	0.33	2	1	0.0	0	14.1	SW	40	NE	28	22	6	2	2.8	92
AUSTIN	597	996.3	1018.3	72	53	62.6	3.8	89	6	35	24	0	0	47	63	1.57	- 0.55	0.49	8	2	0.0	0	9.4	N	29	S	16+	10	3	17	6.2	50
BROWNSVILLE	16	1013.7	1016.8	80	60	69.7	2.1	94	6	37	30	2	0	58	71	1.23	- 0.09	0.60	5	1	0.0	0	12.9	SSE	40	NW	8	15	8	7	4.3	66
CORPUS CHRISTI	43	1016.3	1017.6	77	59	67.6	3.5	94	6	36	30	2	0	56	71	1.64	- 0.08	1.39	5	1	0.0	0	12.9	SSE	31	SE	17+	9	7	14	5.8	56
DALLAS	481	999.8	1018.6	68	46	57.1	2.2	85	7	28	24	0	1	41	60	1.80	- 0.90	1.03	7	2	0.0	0	10.9	N	48	NW	1	12	9	9	4.8	67
DEL RIO	1026			73	50	61.9		91	6	31	30	1	1			0.63		0.28	5	1	0.0	0	9.4					12	4	14	5.6	
EL PASO	3918	887.6	1016.4	66	41	53.5	1.3	78	15+	31	27+	0	3	32	48	0.76	- 0.43	0.52	4	1	0.0	0	7.2	NNE	47	W	21	15	7	8	4.1	82
FORT WORTH	544	997.5	1018.5	70	46	58.4	3.6	88	7	30	24	0	1	41	58	1.29	- 1.17	0.64	6	1	0.0	0	9.6	NNW	30*	NNW	28	13	8	9	4.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0.3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
TEXAS	Ft.	Mb.	Mb.	F.	F.	F.	F	F.		F.				F	%	In	In	In			In	In	M.p.h.		M.p.h.							%
GALVESTON U	7			70	61	65.5	2.5	80	5	45	30	0	0			5.52	1.96	2.28	6	0	0.0	0	12.1	NE	36	NE	8						59
HOUSTON U	41			73	57	65.2	3.6	88	6+	40	24	0	0			3.27	- 0.77	1.40	7		0.0	0											
HOUSTON	50	1015.4	1018.0	74	54	64.1	2.8	88	6	35	30	0	0	51	68	5.72	1.86	1.57	7	3	0.0	0	10.8	SSE	30*	SE	8	7	6	17	6.3	65
LAREDO	500	1001.7	1017.0	79	56	67.5	2.7	94	5	35	30	3	0	50	60	1.69	0.82	1.49	4	2	0.0	0	10.7	ESE	30*	WNW	8	15	5	10	4.6	
LUBBOCK	3243	904.7	1017.5	66	36	50.7	2.8	82	15	22	29	0	9	35	61	1.13	0.59	1.11	3	2	0.0	0	12.7	S	44*	W	21	16	9	5	3.4	
MIDLAND	2854	916.9	1016.1	69	43	56.0	3.5	88	7	26	29	0	4	35	51	0.77	0.30	0.55	4	2	0.0	0	10.5	S	32*	NW	21+	13	9	8	4.3	
PORT ARTHUR	16	1016.4	1018.0	73	52	62.7	3.5	87	6	35	30+	0	0	53	76	9.90	6.44	4.39	10	3	0.0	0	10.4	NNE	60	NE	9	10	8	12	5.6	68
SAN ANGELO	1903	949.6	1017.3	69	44	56.4	0.6	89	7	30	30+	0	4	41	61	2.13	1.35	1.13	7	3	0.0	0	8.8	SSE	29*	NW	21	12	8	10	4.9	
SAN ANTONIO	792	993.4	1018.0	72	53	62.4	2.9	88	6	34	30	0	0	48	65	1.93	0.56	0.68	7	1	0.0	0	9.4	N	28	N	1	10	6	14	5.9	58
VICTORIA	104	1013.2		75	56	65.4	3.0	92	6	37	24	2	0			3.91	1.55	1.99	6	2	0.0	0	11.6		44Y		1	8	6	16	6.2	
WACO	500	997.0	1018.2	70	49	59.5	2.7	88	7+	29	24	0	1	46	66	3.22	1.03	1.05	8	1	0.0	0	14.0	NW	39*	NNW	1	11	7	12	5.5	
WICHITA FALLS	994	980.5	1017.9	70	42	56.1	4.1	87	7	31	29+	0	2	40	61	2.53	1.11	1.72	3	2	0.0	0	10.7	S	37*	NNE	28	15	9	6	3.8	
UTAH																																
MILFORD	5028	846.0		51	27	38.9	2.8	68	10+	10	22	0	22			2.10	1.58	1.01	7	1	14.0	4						6	8	16	6.8	
SALT LAKE CITY	4220	870.3	1021.4	49	29	38.9	0.7	66	14	17	29	0	21	31	75	1.56	0.26	0.67	6	0	7.6	4	8.5	SSE	32	NW	15+	4	8	18	7.6	49
WENDOVER	4237	873.1		47	31	38.9	1.3	60	9	22	22	0	16			0.73	0.44	0.57	6	1	T	T						9	6	15	6.3	
VERMONT																																
BURLINGTON	331	997.2	1012.0	47	33	40.3	3.5	60	23	16	30	0	14	34	79	3.95	1.33	0.57	17	0	4.4	3	9.7	S	28	SW	23	1	3	26	9.0	17
VIRGINIA																																
LYNCHBURG	947	991.8		59	40	49.5	2.5	75	18+	27	14	0	6			5.10	2.52	2.03	8	0	T	0	7.0		27	W	29	13	5	12	5.3	56
NORFOLK	26	1015.0	1016.3	61	43	52.0	0.6	74	18	30	26+	0	4	42	72	5.31	2.76	2.04	9	0	0.0	0	11.2	S	38	E	6	12	7	11	5.2	70
RICHMOND	162	1009.9	1016.2	62	38	50.1	1.6	77	17	25	16	0	11	37	67	6.70	3.66	2.67	10	1	T	0	8.5	S	27	NW	7	13	8	9	4.9	61
ROANOKE	1174	971.4	1017.3	58	39	48.6	1.9	73	17	27	25	0	6	34	60	3.80	1.10	1.46	7	0	T	0	10.5	WNW	52*	NNW	29	9	8	13	5.9	
WASHINGTON																																
OLYMPIA	190	1006.8	1013.6	51	38	44.8	1.0	58	3	26	30	0	5	42	89	10.32	2.65	1.54	27	0	0.1	0	7.8	S	30*	S	22+	1	4	25	8.9	
SEATTLE TACOMA	400	999.7	1013.9	50	39	44.4	0.5	59	11+	28	30	0	6	39	82	9.69	4.34	1.38	25	2	1.0	T	10.8	SSW	31*	SW	26	1	6	23	8.6	
SEATTLE U	14			51	44	47.6	0.7	60	3	35	30+	0	0			7.63	2.63	1.15	23		T	0			46	SW	15					20
SPOKANE	2356	946.1	1015.6	44	32	38.1	2.9	58	1	19	29	0	10	32	82	2.58	0.34	0.76	13	0	0.4	T	10.2	SSW	33	SW	27+	1	4	25	8.8	20
STAMPEDE PASS R	3958	875.8		34	28	31.0	- 0.4	45	30	18	20	0	28			11.16	- 1.42	1.52	24	0	76.4	44						2	3	25	8.9	
TATOOSH ISLAND R	101	1008.5	1011.4	51	44	47.4	0.2	55	13	37	20+	0	0	41	80	14.79	4.28	2.26	27	3	0.0	0	21.0	ENE	54	SW	3	1	4	25	8.7	25
WALLA WALLA U	949			52	40	45.8	3.5	68	1	22	30	0	5			2.89	1.17		13	0	T	0											
YAKIMA	1061	975.8	1015.9	51	31	40.7	3.3	60	26	18	30	0	17	32	74	1.13	0.17	0.48	9	0	0.0	0	6.7	WNW	32*	WNW	27	2	8	20	8.1	
WEST INDIES																																
SAN JUAN P.R.	5	1011.7	1014.3	86	72	78.7	0.5	89	15	68	12	0	0	72	81	3.00	- 3.49	0.72	17	6	0.0	0	7.6	ENE	23	E	18	6	17	7	5.6	56
SWAN ISLAND	28			84	76	80.3	0.2	83	8+	73	21+	0	0			2.79	- 4.60	0.55	15	2	0.0	0						1	13	16	7.4	
WEST VIRGINIA																																
BECKLEY	2504	928.5	1018.5	51	35	43.0		67	17	21	25	0	13	34	74	5.60		2.04	13	0	6.3	4	9.7	WNW	30*	SSE	20	6	5	19	7.2	
CHARLESTON	939	981.9	1017.9	56	36	46.2	0.4	72	22	23	25	0	12	35	68	3.19	0.40	1.23	9	1	3.6	4	6.5	SW	20*	WSW	1	5	6	9	7.4	
ELKINS	1970	947.0	1017.3	52	31	41.7		70	18+	16	25	0	21	35	80	4.78		1.38	14	0	4.9	4	8.5	WNW	31*	WNW	23	4	4	22	7.9	
HUNTINGTON	827	987.9	1018.5	57	36	46.5		73	22	24	25	0	11	37	73	2.19	- 0.45	0.85	9	0	2.8	2	6.9	SW	21*	NW	1	5	7	18	7.5	
PARKERSBURG U	615			56	38	46.9	2.1	71	17	26	25	0	8			1.42	- 0.94	0.72	12	1	0.3	T	7.6		33	NW	2					29
WISCONSIN																																
GREEN BAY	682	991.6	1014.5	46	30	37.9	4.2	60	3	11	30	0	19	31	79	1.63	- 0.28	1.03	6	1	T	T	9.5	WNW	29	N	30	5	7	18	7.2	33
LA CROSSE	652	990.6	1015.7	49	33	41.0	6.8	62	3	17	30	0	14	32	73	1.90	- 0.04	1.61	5	2	0.1	T	11.0	S	32*	NW	1	6	8	16	6.8	
MADISON	858	979.5	1015.5	49	29	39.2	4.7	62	7+	14	30	0	22	31	74	1.96	- 0.18	1.20	6	1	0.1	T	9.6	S	33	NW	22	7	5	18	7.2	37
MILWAUKEE	672	990.1	1015.5	50	33	41.7	5.9	62	17	22	30+	0	14	34	74	2.17	- 0.01	0.89	7	2	T	T	11.0	SSW	36	W	23	8	8	14	6.2	49
WYOMING																																
CASPER	5319	836.5	1016.7	50	27	38.3	4.7	64	14	11	21	0	24	20	54	0.31	- 0.40	0.11	4	0	1.2	1	13.8	SW	32*	SSW	2	3	9	18	7.4	
CHEYENNE	6126	812.6	1016.9	54	26	40.0	5.3	67	14+	15	22	0	26	18	47	0.02	- 0.60	0.02	1	0	0.1	T	12.3	WNW	34	NW	22	10	8	12	5.5	71
LANDER	5563	834.4	1017.3	49	24	36.3	5.3	62	15	15	30	0	27	22	61	0.13	- 0.79	0.09	4	0	1.8	2	4.8	WSW	43	SW	6	5	13	12	6.6	78
SHERIDAN	3942	883.6	1017.3	50	25	37.4	4.0	68	26+	10	21	0	28	24	65	0.65	- 0.15	0.54	6	0	2.2	1	6.6	NW	34	NW	15+	4	9	17	7.4	57

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.
A Maximum hourly average.
\+ And also on an earlier date or dates.
Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.
B Number of days maximum 70 F. or above for Alaskan Stations.
\# Wind direction to 8 compass points only.
Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

V Sun below horizon November 19 - 30, inclusive.
X Sun below horizon November 24 - 30, inclusive.

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	994.2	1019.8	18.3	5.6	11.9	0.9	25.6	22+	- 2.8	15	0	7	5.0	65	102	12	51	8	2	0	0	3.3	ESE	17.0	W	30	8	9	13	6.0	52
HUNTSVILLE	184	997.6	1019.8	17.2	5.0	11.1	0.6	25.6	19	- 3.9	15	0	8	4.4	67	113	20	52	10	2	T	T	4.3	SE	20.6*	N	29	7	6	17	6.5	
MOBILE	64	1016.1	1018.4	21.1	8.9	15.1	0.7	27.2	6	0.6	15+	0	0	8.3	69	114	29	64	6	3	0	0	4.8	SE	15.6*	SSE	22	9	7	14	5.9	
MONTGOMERY	59	1011.0	1019.3	20.0	6.1	12.9	0.6	27.2	22	- 3.9	15	0	5	6.7	70	82	5	64	8	2	0	0	3.0	NNW	15.2	W	1	11	6	13	5.4	56
ALASKA												8																				
ANCHORAGE	27	998.9	1004.2	- 6.7	-15.0	-11.1	-5.6	2.2	1	-25.6	24	0	30	-16.7	77	3	- 23	3	2	0	66	76	1.8	N	9.4*	NNW	15	13	7	10	4.5	62
ANNETTE	34	999.6	1003.7	5.6	0.6	3.1	-1.6	10.6	11	-12.2	21	0	11	- 1.1	76	267	-105	52	25	0	236	76	6.4	SE	17.9*	S	29+	1	3	26	8.8	
BARROW	7	1018.9	1019.6	-17.2	-23.9	-20.7	-2.6	- 4.4	12	-33.9	30	0	30	-25.6	66	3	- 3	1	5	0	56	330	5.3	ENE	13.9*	WNW	14+	V 2	V 1	V15	8.3	
BARTER ISLAND	12	1016.9	1019.0	-18.9	-25.6	-22.1	-4.4	- 5.6	13	-39.4	26	0	30	-26.1	67	13	3	3	10	0	142	381	5.7	W	21.9*	W	15	X 4	X 5	X14	7.8	
BETHEL	38	1010.1	1011.5	-13.3	-18.9	-16.2	-8.0	- 4.4	14+	-29.4	27	0	30	-21.1	69	3	- 24	3	2	0	48	51	5.7	NNE	13.0*	NNE	24	12	7	11	5.0	
COLD BAY	27	1000.9	1005.0	- 1.1	- 6.7	- 2.0	-3.3	6.1	18	-17.2	29+	0	26	- 4.4	81	37	- 59	10	16	0	117	76	6.1	NNW	15.6*	NNE	23+	0	5	25	8.8	
CORDOVA	12	998.1	999.9	1.1	- 8.3	- 3.8	-3.3	8.3	1	-20.0	24	0	27	- 7.8	78	51	-153	13	11	0	422	305	2.5	E	13.4*	ESE	30	9	5	16	6.2	
FAIRBANKS	133	996.6	1015.1	-19.4	-27.8	-23.6	-8.0	- 7.2	1	-41.1	25	0	30	-27.8	71	5	- 11	2	7	0	117	127	1.1	N	7.6*	W	14	13	7	10	4.7	
JUNEAU	3	1003.2		0.6	- 4.4	- 2.1	-3.3	8.3	11	-17.2	23	0	20			99	- 55	34	17	0	511	432	5.3	ESE	14.3*	SSE	25+	5	4	21	7.7	31
KING SALMON	13	1004.6	1006.0	- 8.9	-17.2	-13.1	-7.5	3.3	6	-28.9	26	0	30	-17.2	72	T	- 37	T	0	0	T	T	5.4	N	13.0*	N	9+	16	7	7	4.3	
KOTZEBUE	3	1016.3	1016.9	-17.2	-23.3	-20.3	-6.7	- 2.8	12	-32.8	27+	0	30	-23.3	73	4	- 5	3	3	0	109	203	3.9	ENE	16.1*	ESE	11	11	3	16	5.9	
MC GRATH	101	1000.0	1013.7	-17.8	-26.7	-22.2	-7.3	- 7.8	1	-36.7	29+	0	30	-28.3	60	1	- 27	T	2	0	20	152	1.9	N	9.8	NNW	9	16	4	10	4.2	
NOME	3	1014.2	1014.9	-10.6	-17.8	-15.1	-6.5	- 1.1	12	-28.3	28+	0	30	-20.0	66	3	- 27	3	1	0	33	25	3.8	N	13.4*	N	7	17	3	10	4.4	59
ST. PAUL ISLAND	7	1007.5	1008.5	0.6	- 3.3	- 1.3	-1.8	5.0	13	- 9.4	24	0	21	- 3.3	84	31	- 32	9	16	0	155	76	9.3	NNE	24.1*	ENE	5	0	1	29	9.6	
SHEMYA	37	1003.4	1007.1	4.4	1.7	3.1	1.0	8.3	10	- 1.1	30+	0	4	0.0	80	79	10	21	20	0	18	T	9.7	N	30.4*	SSW	17	0	5	25	9.0	
YAKUTAT	9	1000.4	1000.8	1.7	- 4.4	- 1.4	-2.4	10.6	11	-16.7	20	0	21	- 6.7	74	308	-100	70	20	0	1019	533	4.0	E	13.0*	WSW	25	8	2	20	7.1	
ARIZONA																																
FLAGSTAFF	2131	790.8	1018.8	10.6	- 3.9	3.3	0.7	18.3	10+	-12.2	23	0	27	- 2.8	69	36	10	15	7	1	277	203	3.2	NNE	11.2*	NNE	25	12	6	12	5.2	
PHOENIX	338	975.9	1015.3	22.8	10.0	16.6	1.6	30.6	12+	5.6	28+	0	0	4.4	48	19	6	9	5	3	0	0	2.8	E	10.3*	WSW	7	16	7	7	3.9	87
PRESCOTT	1528	847.8	1017.9	16.1	1.1	8.4	0.8	22.2	12+	- 5.6	17	0	14	0.6	65	28	15	12	5	2	T	0	3.0	SW	11.6	S	20	14	7	9	4.6	74
TUCSON	788	926.5	1015.0	22.2	8.3	15.2	0.9	29.4	13+	3.9	28+	0	0	2.8	50	32	16	16	3	0	0	0	4.1	SE	23.2	W	7	14	8	8	4.1	85
WINSLOW	1487	853.4	1019.9	15.6	- 0.6	7.5	2.1	23.9	15+	- 7.2	30+	0	15	- 0.6	63	9	0	7	3	0	T	0	3.0	SW	13.4*	W	16	13	7	10	4.5	
YUMA	61	1010.3	1015.5	26.1	11.1	18.6	0.6	33.3	12	5.6	19	2	0	4.4	47	5	2	4	3	1	T	0	2.8	N	14.8	N	25	15	10	5	3.6	83
ARKANSAS																																
FORT SMITH	137	1001.9	1019.2	15.6	3.3	11.3	1.3	27.8	10	- 7.2	14	0	9	3.9	64	28	- 53	11	8	0	0	0	3.5	ENE	12.1	W	22	17	5	8	3.7	70
LITTLE ROCK	78	1006.1	1019.5	18.9	5.0	11.8	2.1	26.7	10+	- 3.9	15	0	6	5.0	67	114	10	64	10	6	0	0	3.5	NNW	14.8	S	23	15	5	10	4.3	61
TEXARKANA	110	1005.4	1019.0	20.6	7.8	14.3	2.2	28.3	6	- 2.2	14	0	2	6.1	65	107	- 3	53	8	2	0	0	3.8	NW								81
CALIFORNIA																																
BAKERSFIELD	151	1001.1	1018.9	17.8	7.2	12.6	-0.7	26.1	1	1.7	22	0	0	7.8	76	24	11	12	5	0	0	0	2.3	ESE	10.3*	NNW	15	6	10	14	6.7	
BISHOP	1252	875.5		17.8	- 6.7	7.7	0.1	23.9	11+	- 8.3	22	0	24			4	- 10	2	4	0	0	0						9	11	10	5.4	
BLUE CANYON	1609	839.5		9.4	2.2	5.8	-1.5	19.4	28	- 4.4	21	0	14			421	249	90	14	0	798	356						6	2	22	7.6	
BURBANK	210	990.9	1017.0	21.7	8.3	15.0	-0.8	31.1	10	3.3	22+	0	0	5.0	57	46	20	34	4	1	0	0	2.8	SSE	12.5*	NW	7	13	4	13	5.1	
EUREKA U	13	1015.2		15.0	8.3	11.4	0.7	19.4	1	3.9	21	0	0			176	58	38	20	1	0	0	3.4	SE#	14.8	SE	22	0	8	22	8.3	42
FRESNO	98	1006.7	1018.7	16.1	6.1	11.2	-0.6	24.4	1	1.1	22	0	0	7.8	83	65	40	19	10	1	0	0	2.3	ESE	12.1	NW	15	2	7	21	8.1	38
LONG BEACH	9	1015.8	1017.4	21.7	9.4	15.6	-0.2	29.4	1	4.4	22	0	0	8.9	70	72	45	40	4	1	0	0	2.3	WNW	13.0*	NW	21+	12	5	13	5.3	
LOS ANGELES	27	1013.2	1017.0	21.1	11.7	16.6	1.4	28.9	1	7.2	18	0	0	9.4	67	70	42	33	5	0	0	0	3.4	ENE	12.5*	NNW	21+	12	5	13	5.3	
LOS ANGELES U	95			21.7	12.2	16.8	-0.2	28.9	10	8.3	22	0	0			55	27	31	4	1	0	0	3.0	NE#	15.2	NW	21	14	6	10	4.6	73
MT SHASTA R	1080	893.1		9.4	0.0	4.7	-0.8	18.9	11	- 5.0	16	0	19			183	82	45	11	0	447	152						3	5	22	7.8	
OAKLAND	1	1017.9	1018.4	15.0	9.4	12.2	-0.4	19.4	1	6.7	30+	0	0	8.9	82	81	37	25	11	0	0	0	3.5	SE	17.9*	SW	5	6	9	15	6.7	
POINT ARGUELLO R	110	1003.8		18.9	6.1	12.7	-0.2	28.3	10	0.6	18	0	0			56	33	29	9	0	0	0	3.1		11.2*	NW	20	9	8	13	5.6	
RED BLUFF	104	1005.1	1018.1	15.0	5.6	10.4	-2.1	21.7	10	0.6	22	0	0	6.1	78	126	68	33	12	0	0	0	4.2	SSE	17.0	SW	5	3	8	19	7.8	49
SACRAMENTO	3	1017.5	1018.9	15.0	6.7	10.9	-1.6	22.2	1	1.1	22+	0	0	8.9	90	110	74	24	11	0	0	0	2.1	SE	15.2	S	5	3	6	21	7.9	36
SACRAMENTO U	7			15.0	7.8	11.4	-1.2	22.2	1	2.2	22+	0	0			100	60	20	12	0	0	0										
SANDBERG R	1375	863.9		11.7	4.4	8.2	-1.3	18.9	12+	- 3.3	21	0	5			63	40	33	6	0	79	51	6.5	ENE	27.7*	NNW	21	10	6	14	5.8	
SAN DIEGO	4	1013.2	1016.6	21.1	11.1	16.2	-0.1	27.2	29	7.2	23+	0	0	8.9	67	47	24	38	6	0	0	0	2.5	WNW	12.5	NE	1	13	11	6	4.4	73
SAN FRANCISCO	2	1017.7	1018.5	16.7	8.3	12.4	-0.2	20.0	10+	3.9	22	0	0	8.9	80	84	44	20	9	0	0	0	3.3	SE	24.1	SSW	5	5	10	15	6.7	
SAN FRANCISCO U	16			16.7	11.1	13.7	-0.4	20.6	10	7.2	30	0	0			89	39	25	13	0	0	0	3.0	SE#	14.3	S	5					44
SANTA CATALINA	478	960.9		18.3	12.8	15.5		26.1	10	8.9	22+	0	0			64		43	4	1	0	0						13	6	11	5.2	
SANTA MARIA	73	1009.5	1018.3	20.0	6.1	13.1	-0.3	28.3	10	0.6	22	0	0	7.2	73	44	18	24	8	0	0	0	3.2	NW	11.2*	WNW	20	9	10	11	5.5	
STOCKTON	9	1017.5	1019.0	14.4	6.7	10.5		21.7	1	1.1	22+	0	0	7.8	87	103		45	9	1	0	0	2.9	SE	12.1*	SE	23+	1	5	24	8.6	
COLORADO																																
ALAMOSA	2297	772.0		10.6	-11.7	- 0.6	0.8	15.6	15+	-19.4	30	0	30			2	- 5	1	3	0	30	T						18	8	4	3.5	
COLORADO SPRINGS	1881	810.4	1017.6	13.3	- 2.2	5.6	2.6	21.7	15	- 6.7	29+	0	22	- 6.1	49	12	2	8	2	0	107	51	3.9	NNE	13.0*	N	28	15	6	9	4.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days					No. of days		Snow, Sleet		Average speed	Prevailing direction	Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground			Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
COLORADO	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
DENVER	1609	836.8	1016.7	14.4	- 3.9	5.4	1.4	22.8	15	- 9.4	30	0	29	- 5.0	56	11	- 6	11	1	0	89	76	3.5	S	13.0	NW	4	10	12	8	4.9	85
GRAND JUNCTION	1475	861.8	1019.5	13.3	0.0	6.7	2.9	20.6	15	- 6.7	29	0	17	- 3.3	55	9	- 6	7	2	0	T	0	2.4	SE	13.0	S	15	12	9	9	4.9	71
PUEBLO	1414	856.6	1017.4	15.6	- 2.8	6.4	2.0	25.0	15	- 8.3	30	0	24	- 3.9	55	13	0	6	3	0	T	0	3.7	WSW	17.0	E	16	18	6	6	3.5	89
CONNECTICUT																																
BRIDGEPORT	2	1013.6	1014.6	12.8	5.6	9.3	2.3	16.7	18	- 1.1	26+	0	4	4.4	75	147	45	57	10	0	T	0	6.8	WSW	25.0*	WSW	30	4	8	18	7.2	
HARTFORD	52	1007.1	1013.2	12.8	3.3	8.1	2.9	22.8	18	- 4.4	26+	0	9	2.8	74	144	46	47	12	0	T	T	3.6	S	16.1	W	30	1	8	21	8.0	40
NEW HAVEN	2	1013.2		12.8	5.0	8.8	2.5	17.2	18	- 3.9	26	0	5			218	115	119	11	0	T	0	4.1		19.7	S	30	5	5	20	7.4	44
DELAWARE																																
WILMINGTON	24	1011.9	1015.1	13.9	3.9	8.9	1.4	20.6	18	- 2.8	25	0	7	3.9	72	174	85	75	10	0	T	T	4.2	WNW	14.3*	ENE	6	7	10	13	6.4	
DIST.OF COLUMBIA																																
WASHINGTON U	22			15.6	6.1	10.8		23.9	18	1.1	29+	0	0			170	98	61	9		0	0										
WASH NATL AP	4	1011.1	1015.7	15.0	5.0	9.9	1.2	22.8	18	- 1.1	25	0	2	3.3	66	170	98	66	9	0	T	T	4.4	S	16.5	NE	6	8	10	12	5.9	47
FLORIDA																																
APALACHICOLA U	4	1016.3		20.0	11.7	15.7	-0.6	26.1	1	1.7	14	0	0			97	32	25	9	2	0	0	3.8	E	14.3	E	9	13	7	10	4.7	60
DAYTONA BEACH	9	1016.6	1018.5	22.2	12.2	17.4	-1.1	26.1	23+	3.3	14	0	0	12.2	75	203	144	117	11	1	0	0	3.9	NW	16.5*	W	29	9	6	15	6.0	
FORT MYERS	3	1016.9		26.1	14.4	20.4	-0.3	29.4	9	5.6	15	0	0			88	57	82	6	2	0	0	4.5		13.9*	W	29	12	8	10	5.2	
JACKSONVILLE	7	1016.9	1018.4	21.7	10.0	15.8	-0.7	26.7	27	- 0.6	15	0	1	10.6	76	69	26	22	8	0	0	0	4.2	NW	18.3	NW	1	10	7	13	5.5	62
KEY WEST	2	1015.6	1016.7	26.1	20.6	23.3	-0.1	29.4	5	13.3	15	0	0	17.8	74	156	85	122	7	3	0	0	5.9	ENE	14.3	NW	29+	7	13	10	5.8	59
LAKELAND U	65			23.3	13.9	18.8	-0.6	28.9	27	4.4	14	0	0			145	105	101	10	3	0	0	3.5					10	8	12	5.4	59
MIAMI BEACH	3			25.0	20.0	22.7	-0.6	29.4	6+	9.4	15	0	0			58	- 6	36	7		0	0	6.6					9	11	10	5.7	51
MIAMI	2	1015.7	1017.0	25.6	17.8	21.8	-0.7	28.9	6	7.2	15	0	0	17.2	75	36	- 36	17	6	2	0	0	4.6	ENE	11.2*	WSW	29	5	11	14	6.6	
ORLANDO	32	1013.5	1018.2	23.9	13.3	18.6	-0.3	27.8	22+	3.9	14	0	0	12.8	73	162	122	98	8	0	0	0	4.3	ENE	13.9*	WNW	29	11	6	13	5.6	
PENSACOLA	4			20.0	8.9	14.5		26.7	1	- 1.1	15+	0	2			136		75	11	2	0	0	3.8	N	19.2	NW	29					52
TALLAHASSEE	18	1016.2	1019.1	21.1	7.2	13.9	-1.2	26.7	1	- 5.0	15	0	6	8.9	76	73	11	26	11	0	0	0	4.4	N	16.5*	WNW	29	12	8	10	5.1	
TAMPA	6	1016.6	1018.3	24.4	12.9	18.7	-0.7	28.9	22	1.7	15	0	0	13.3	74	155	118	107	10	3	0	0	5.5	E	17.9*	WNW	29	13	5	12	5.4	60
WEST PALM BEACH	5	1016.8	1017.9	25.6	17.2	21.4	-1.1	28.9	24	7.2	30	0	0	15.0	70	77	4	32	7	1	0	0	4.8	ENE	12.1*	ENE	18	5	14	11	6.3	
GEORGIA																																
ATHENS	245	989.3	1018.6	18.3	4.4	11.3	0.5	25.0	19	- 3.9	15	0	7	5.0	70	138	64	51	8	1	T	0	3.5	WNW	13.4*	WNW	29	13	4	13	5.2	
ATLANTA	306	976.6	1019.2	17.2	5.0	10.8	0.2	23.3	19	- 3.9	15	0	7	4.4	69	97	22	43	9	1	T	0	3.5	WNW	16.1*	N	29	9	9	12	5.5	67
AUGUSTA	43	1011.5	1018.4	15.6	4.4	12.5	0.2	26.7	19	- 5.0	15	0	8	5.6	69	92	37	38	8	1	0	0	3.4	WNW	16.5*	W	29	13	5	12	5.2	
COLUMBUS	117	1004.7		19.4	5.6	12.4	0.1	25.6	22	- 3.3	15	0	8			122	56	46	7	1	0	0	3.6		15.6*	NW	29	11	9	10	5.3	
MACON	109	1005.0	1018.9	20.0	5.6	12.9	-0.1	25.6	22	- 3.3	15	0	5	5.0	66	68	6	21	8	0	0	0	3.5	NW	15.6	NW	29	12	6	12	5.1	71
ROME	194	996.0		17.2	2.2	9.8	0.3	25.0	19	- 7.2	15	0	14			110	24	62	10	1	T	0						11	8	11	5.4	
SAVANNAH	12	1016.0	1018.5	20.6	7.2	14.1	0.0	24.4	21+	- 2.8	15	0	4	8.3	73	58	6	29	9	0	0	0	4.7	WNW	14.8	NW	29	12	8	10	4.8	68
THOMASVILLE U	85			20.0	9.4	14.7	-0.5	26.7	22	- 1.1	15	0	2			65	12	22	10	0	0	0										
HAWAII																																
HILO	9	1014.4	1016.4	27.8	18.9	23.2	0.3	30.0	23	16.7	20	0	0	18.3	78	209	-130	53	22	0	0	0	4.1	WSW	14.3	N	10	3	17	10	6.3	43
HONOLULU	2	1016.0	1016.4	28.9	21.1	25.1	0.7	31.7	28	17.8	30	0	0	17.2	63	5	- 50	4	5	0	0	0	4.2	ENE	11.6	NE	5	10	12	8	5.2	55
KAHULUI	12	1013.2	1016.3	28.9	18.9	23.7		31.1	17	16.1	24+	0	0	17.8	71	19		16	3	0	0	0	5.3	ENE	13.0*	N	9	13	12	5	4.4	81
LIHUE	35	1011.7	1017.4	28.3	21.1	24.7	1.1	30.0	1	17.8	28	0	0	18.9	71	15	-100	6	8	0	0	0	4.9	ENE	13.9	NE	9	5	13	12	6.4	68
IDAHO																																
BOISE	865	921.5	1019.0	11.1	2.2	6.5	2.6	19.4	1	- 5.0	30	0	10	1.1	73	61	31	14	13	1	25	T	3.8	SE	17.0	SW	6	2	7	21	7.9	33
IDAHO FALLS 42NW R	1460			5.6	- 6.7	- 0.4	1.7	16.7	14	-18.9	30	0	29			25	16	6	8		0	0	2.3	NNE	14.8A	SSW	4					
IDAHO FALLS 46W R	1503	849.7		5.0	- 6.1	- 0.3	0.9	16.7	14	-18.3	30	0	28			25	14	9	5	0	132	127	2.2	WSW	9.8A	SW	8+					
LEWISTON	430	969.9		10.6	1.7	6.1	1.7	17.8	1	-12.8	21	0	6			25	- 7	7	10	0	T	0						1	4	25	8.9	
POCATELLO	1353	864.9	1020.5	8.3	- 1.7	3.5	1.8	17.8	14	-10.0	30	0	20	0.0	80	38	13	14	11	0	79	51	4.3	SSW	16.1	SW	4	1	7	22	8.8	41
ILLINOIS																																
CAIRO U	94	1005.6		15.6	5.6	10.7	1.9	22.2	21+	- 1.1	30	0	2			48	- 50	26	7	1	T	0	3.9	S#	15.2	S	22	7	10	13	6.0	57
CHICAGO O HARE	201	990.8	1015.9	11.1	0.0	5.5		20.6	17	- 7.8	24	0	18	1.7	77	51		22	6	2	T	T	4.2	SSW	11.2*	WNW	11	8	8	14	6.4	
CHICAGO MIDWAY	186	993.0	1016.4	12.2	2.8	7.4	3.0	21.1	17	- 5.0	24	0	9	1.7	70	31	- 25	21	8	1	T	0	5.3	WNW	17.0	S	22	6	11	13	6.4	43
MOLINE	177	994.4	1016.9	11.7	0.6	6.2	2.4	19.4	16	- 6.7	30	0	15	1.7	75	47	- 3	28	6	3	T	T	4.0	NW	15.2	NW	28+	8	5	17	6.6	51
PEORIA	199	995.4	1018.2	11.7	0.6	6.1	1.8	20.6	17	- 5.6	30+	0	14	1.1	74	49	- 5	34	8	2	0	T	4.2	S	14.3	SE	22	11	1	18	6.2	51
ROCKFORD	222	987.9	1015.5	11.7	1.1	6.2	3.4	18.3	16	- 6.1	24	0	15	1.7	73	59	- 1	31	4	4	T	0	4.4	NW	11.2*	NW	28+	8	4	18	6.8	
SPRINGFIELD	179	993.8	1017.5	13.3	1.1	7.3	2.2	21.7	17	- 6.1	30	0	15	1.7	71	38	- 1	28	7	0	T	T	5.2	S	13.4	S	22	11	6	13	5.4	61

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No of days: .25 mm. or more	Precipitation: No of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1002.6	1018.9	15.0	1.7	8.4	1.3	22.8	10	- 6.1	3	0	16	1.7	66	39	- 41	20	6	2	T	T	3.4	NW	11.6	S	22	8	10	12	6.2	46
FORT WAYNE	241	984.9	1016.5	12.2	2.2	7.3	3.2	20.0	17	- 5.0	24	0	12	2.2	74	43	- 21	16	10	1	36	T	4.6	W	17.0	SW	23	6	6	18	6.9	46
INDIANAPOLIS	242	987.2	1017.6	12.8	1.7	7.3	2.3	20.0	9	- 5.6	24+	0	15	2.2	74	55	- 23	29	8	1	8	T	4.4	NW	13.4*	W	23	7	11	12	6.2	56
SOUTH BEND	234	987.4	1015.7	11.7	2.8	7.3	3.3	19.4	17	- 3.9	24	0	10	1.7	71	59	- 8	24	10	0	183	76	5.0	SW	14.3*	WSW	23+	3	8	19	7.6	
IOWA																																
BURLINGTON	212	991.4	1017.4	12.2	1.1	6.6	2.5	22.8	17	- 6.1	30	0	15	1.1	72	37	- 11	23	8	2	3	T	5.2	NW	17.9	NW	22	10	4	16	6.2	55
DES MOINES	289	985.6	1017.3	11.7	1.1	6.2	2.9	19.4	8	- 6.7	30	0	16	0.0	69	35	- 10	26	3	2	T	T	4.7	NW	16.1	NW	30	9	7	14	6.1	49
DUBUQUE	325	990.6		9.4	0.0	4.7	3.2	17.2	16	- 7.2	24	0	19			118	53	88	6	1	5	T			12.5*	NW	11	7	4	19	7.0	
SIOUX CITY	334	974.7	1016.9	12.2	- 1.7	5.2	3.2	18.3	7	- 9.4	23	0	23	- 1.7	68	7	- 23	7	1	0	0	0	4.2	NW	20.6	NW	22	10	7	13	5.8	74
WATERLOO	265	983.2	1015.7	10.6	- 0.6	4.9	3.1	18.3	9	- 8.3	30	0	19	0.0	74	52	5	38	4	1	10	T	4.8	NW	16.5*	NW	22	7	7	16	6.6	
KANSAS																																
CONCORDIA	448	966.5	1017.2	14.4	0.6	7.4		22.8	7	- 7.8	14	0	14	0.0	63	2		2	3	2	0	0	5.4	SSE	16.1	NW	28	15	9	6	3.9	77
DODGE CITY	791	928.1	1017.6	16.1	0.0	8.1	2.1	26.1	16	- 7.8	29	0	16	- 2.8	55	2	- 14	2	1	3	0	0	5.7	SSE	17.9	N	22	13	14	3	3.8	77
GOODLAND	1111	888.0	1017.2	14.4	- 3.9	5.2	1.9	26.1	15	- 8.3	30+	0	30	- 4.4	59	7	- 5	7	2	1	69	51	5.3	WSW	16.1*	NNW	28	17	8	5	3.5	
TOPEKA	265	981.6	1017.9	15.6	1.7	8.6	2.7	26.1	16	- 8.9	14	0	13	1.1	65	24	- 14	16	4	0	T	T	5.0	S	25.0	SW	16	15	5	10	4.5	66
WICHITA	403	968.2	1017.8	15.0	2.2	8.5	1.6	24.4	16	- 6.1	14	0	12	2.2	70	26	- 11	20	4	4	0	0	4.7	S	19.2	N	22	16	5	9	4.1	69
KENTUCKY																																
COVINGTON	265	985.3	1017.6	13.3	1.1	7.3	0.8	20.6	17	- 8.3	3	0	15	2.2	74	46	- 27	21	11	1	25	25	3.9	SSW	9.4*	SSW	22	8	4	18	6.7	
LEXINGTON	298	982.4	1018.7	14.4	2.2	8.2	1.2	22.8	22	- 4.4	24+	0	11	1.7	69	24	- 53	6	12	1	58	T	3.9	SSW	10.3*	SSW	22+	5	6	19	7.4	
LOUISVILLE	143	998.8	1018.4	15.0	3.3	9.1	2.3	21.7	22+	- 5.0	24	0	9	3.3	71	43	- 38	20	12	2	T	T	3.4	S	13.4	S	17	6	6	18	6.7	47
LOUISIANA																																
ALEXANDRIA	27	1014.3	1019.2	21.1	5.6	13.3		28.3	6	- 3.9	14	0	10	7.2	73	98		39	9	2	0	0	2.6	S	11.2	NW	22	11	8	11	5.4	
BATON ROUGE	20	1015.5	1018.9	21.7	9.4	15.4	0.8	28.9	7+	0.0	15	0	1	8.9	70	161	57	48	7	3	0	0	3.6	ESE	10.7	N	1	8	9	13	5.9	
LAKE CHARLES	4	1016.7	1018.7	22.2	10.6	16.4	1.1	30.0	6	1.7	24	0	0	10.0	71	119	12	44	8	4	0	0	4.4	NNE	13.0*	NNE	29	10	8	12	5.5	
NEW ORLEANS	0	1016.4	1018.6	21.1	10.0	15.7	0.4	27.2	21	0.6	15	0	0	11.7	80	199	115	92	7	3	0	0	3.7	ENE	12.5*	NNE	9	7	10	13	6.3	
NEW ORLEANS AUDUBON	0			22.2	13.3	17.8		27.2	21+	5.0	2	0	0			258		102	8	5	0	0	2.1	NE#	8.0	NW	28	10	10	10	5.7	35
SHREVEPORT	76	1010.1	1019.4	21.1	7.8	14.4	1.6	28.9	6	- 1.7	14	0	3	7.2	67	171	64	102	11	5	0	0	4.9	SSE	13.0	S	22	14	5	11	4.6	62
MAINE																																
CARIBOU	190	989.5		5.0	- 2.2	1.4	2.4	16.1	30	-10.6	28	0	21			197	119	43	19	0	427	279						1	3	26	8.9	
PORTLAND	19	1009.1	1013.2	10.0	1.1	5.4	2.0	18.3	18	- 6.7	26	0	15	1.7	80	249	143	70	14	0	T	0	4.7	NNE	21.5	S	30	3	5	22	8.3	31
MARYLAND																																
BALTIMORE	45	1010.8	1015.5	13.9	2.8	8.5	1.0	23.9	18	- 3.9	13	0	10	2.8	70	174	94	78	10	0	T	0	4.2	WNW	18.3	W	30	11	9	10	5.8	59
BALTIMORE U	4			14.4	6.7	10.7	1.4	23.3	18	1.1	25	0	0			167	88	71	9		0	0										
MASSACHUSETTS																																
BLUE HILL OBS R	192	988.4		11.1	3.3	7.2	1.7	22.2	18	- 4.4	26+	0	8			223	108	86	13	0	0	0	7.2	WNW	30.0	S	30					30
BOSTON	5	1008.3	1013.0	12.8	5.6	9.1	1.9	21.7	18	- 1.1	25	0	2	3.3	72	197	97	60	12	2	0	0	6.6	SW	22.4	S	30	3	6	21	7.9	34
NANTUCKET	13	1013.0	1013.5	12.2	6.1	9.3	1.9	17.8	8	- 2.8	26	0	1	5.6	78	89	- 14	25	16	3	0	0	6.6	N	29.1	SW	30	1	8	21	8.1	30
PITTSFIELD	357			10.0	1.1	5.6	2.6	19.4	18	- 7.8	26	0	14			132	32	31	16		33	25										
WORCESTER	301	975.6	1012.8	10.0	2.2	6.1	2.1	20.0	18	- 5.6	25	0	12	1.7	77	208	100	58	14	0	T	0	4.8	W	13.9*	W	30	6	3	21	7.7	
MICHIGAN																																
ALPENA	210	987.3		9.4	0.6	4.9	2.9	16.1	17	-13.9	30	0	16			42	- 18	13	13	0	8	T	3.5	SW	13.0	NW	23	1	8	21	8.5	39
DETROIT	186	988.1	1015.1	11.7	3.9	7.8	3.1	18.9	17	- 5.0	30	0	6	1.7	69	32	- 24	12	9	0	T	T	5.4	SW	18.8	SW	23	4	5	21	7.9	35
DETROIT M WAYNE CO	193	988.3	1015.5	10.6	1.1	5.8	1.7	18.3	17	- 5.6	30+	0	14	1.7	76	32	- 25	10	7	1	T	T	4.3	SSW				4	8	18	7.6	
DETROIT WILLOW RUN	217	986.5	1015.2	11.1	2.2	6.7	2.3	18.9	17	- 5.6	25	0	11	2.2	75	27	- 30	10	6	1	T	T	5.1	NW	19.7*	SW	23	4	7	19	7.7	
FLINT	233	986.8	1015.5	11.1	1.7	6.3	3.1	18.3	17	- 6.7	30	0	11	1.7	75	40	- 15	23	10	2	T	T	5.3	SW	20.6*	SW	23	2	8	20	8.0	
GRAND RAPIDS	210	988.8	1015.2	11.1	2.2	6.8	3.3	18.3	17	- 5.6	30	0	10	2.2	77	64		34	11	1	23	T	4.7	NW	19.2	SW	23	3	8	19	7.5	30
LANSING	260	982.4	1014.9	11.7	1.7	6.4	3.2	18.9	17	- 5.0	24	0	14	2.2	77	34	- 22	15	9	1	T	T	4.1	WNW	21.0	SW	23	4	6	20	7.6	35
MARQUETTE U	206	985.7		7.2	1.1	4.1	3.1	13.9	22+	- 9.4	30	0	11			68	- 15	17	15	1	218	102	3.8	W#	14.3	NW	23	0	7	23	8.8	30
MUSKEGON	191	991.6	1014.8	10.6	2.8	6.6	2.9	17.2	22	- 3.9	3	0	8	2.8	78	101	26	47	14	1	43	T	6.1	NW	13.0*	NNW	29+	2	6	22	8.1	
SAULT STE MARIE	220	989.6	1012.6	7.8	0.0	3.8	3.6	13.9	6	-10.6	30	0	15	1.1	84	90	5	46	15	1	147	76	4.7	NW	21.5*	WNW	23	1	7	22	8.6	27
MINNESOTA																																
DULUTH	433	972.2	1014.6	6.1	- 2.2	2.1	4.9	14.4	5	-13.9	30	0	20	- 2.8	72	38	- 7	35	5	3	41	51	5.3	WNW	18.8	NE	21	2	7	21	8.0	36
INTERNATIONAL FALLS	359	971.6	1013.7	4.4	- 5.0	- 0.4	4.2	15.0	5+	-20.0	30	0	29	- 3.9	80	28	- 9	11	10	0	130	51	5.0	NW	13.9*	NW	23	4	4	22	7.9	
MINNEAPOLIS	250	981.5	1015.7	8.9	- 2.2	3.5	4.3	16.1	7	-11.1	30	0	23	- 2.2	69	13	- 22	12	4	1	T	1	4.5	SSE	13.9	NW	28	6	7	17	7.1	46

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	°C.	C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
ROCHESTER	393	967.2	1016.0	8.9	- 1.1	3.8	3.8	15.6	8	-15.0	30+	0	20	- 0.6	74	53	13	46	7	2	8	T	6.0	WNW	14.3*	WNW	23+	6	8	16	6.9	
ST CLOUD	315	975.8		8.3	- 3.3	2.3	3.7	15.0	6+	-13.3	30	0	26			19	- 14	17	5	2	13	T						5	8	17	7.3	
MISSISSIPPI																																
JACKSON	93			19.4	7.2	13.6	0.0	26.1	18+	- 3.9	14	0	5			116	22	65	6	1	0	0	3.9	SSE	13.0	NNW	29	11	9	10	5.0	
MERIDIAN	89	1005.6	1019.7	19.4	5.0	12.2	-0.1	26.1	22+	- 6.1	15+	0	9	6.7	73	88	9	33	9	1	0	0	3.2	S	11.6*	NNW	30	9	8	13	5.5	
VICKSBURG U	71	1009.4		19.4	8.9	14.2	0.8	25.6	18	0.0	14	0	1			96	- 17	58	7	2	0	0	3.9		14.3	SW	5	9	11	10	5.1	61
MISSOURI																																
COLUMBIA	235	988.4	1017.3	13.9	2.8	8.3	2.0	23.3	17	- 3.9	23+	0	9	1.1	66	45	- 13	22	6	1	0	0	5.1	SSE	16.5	NW	12	14	2	14	5.3	60
KANSAS CITY	226	982.1	1017.4	15.6	3.9	9.9	3.2	24.4	16+	- 5.0	14	0	4	0.6	57	58	13	45	5	1	0	0	4.0	S	12.5	SW	16	15	6	9	4.3	67
ST JOSEPH	244	982.2		16.1	1.1	8.6	3.3	25.0	16	- 7.8	14	0	14			26	- 16	14	4	1	T	0	3.7	WNW	11.2*	NNW	28	13	8	9	4.6	
ST LOUIS	163	997.3	1018.4	13.3	2.2	7.6	0.9	22.2	17+	- 4.4	24	0	13	2.2	71	74	8	64	7	2	T	0	4.2	WNW	14.3	NW	22	13	5	12	5.1	63
ST LOUIS RFC	142			13.9	5.0	9.4	1.7	22.8	9	- 1.1	23	0	3			73	4	62	7		T	0										
SPRINGFIELD	386	970.3	1018.5	15.6	1.1	8.6	1.3	25.6	17	- 5.0	24+	0	12	1.7	67	41	- 29	21	7	0	0	0	4.6	SSE	15.2	N	28	17	4	9	4.0	69
MONTANA																																
BILLINGS	1085	890.0	1016.2	9.4	- 2.8	3.3	1.1	17.8	14	-15.6	21	0	24	- 7.2	51	1	- 15	1	2	0	T	T	5.7	WSW	17.0	NW	27	5	6	19	7.1	54
GLASGOW	694	938.5		6.1	- 6.7	- 0.1	2.1	15.6	4	-24.4	22	0	26			5	- 7	5	3	0	51	51						5	8	17	7.0	
GREAT FALLS	1116	885.8	1015.8	9.4	- 1.7	3.7	1.8	18.3	14	-20.0	21	0	19	- 8.9	42	5	- 14	5	3	0	53	51	7.3	SW	18.8	SW	26	2	10	18	7.6	35
HAVRE	786	924.3		7.2	- 7.2	- 0.1	1.1	16.7	26	-23.9	21	0	26			2	- 11	2	2	0	36	25	4.3	SW#	21.9	W	2	5	7	18	7.3	64
HELENA	1187	872.2	1017.7	7.8	- 5.0	1.6	1.8	17.2	14	-19.4	21	0	27	- 6.7	60	7	- 7	3	6	0	69	51	3.7	WSW	15.6	W	27	1	5	24	8.6	35
KALISPELL	904	910.7		6.1	- 3.9	1.1	2.8	12.8	26	-13.9	30	0	25			18	- 1	6	11	0	64	25	2.5					1	5	24	8.6	
MILES CITY	799			10.0	- 3.9	3.2	2.8	19.4	26	-13.9	21	0	24			5	- 6	4	4	0	5	T	3.6	SE	13.4*	WNW	27					
MISSOULA	972	906.8	1018.5	6.7	- 3.3	1.6	2.4	14.4	26	-13.3	30	0	26	- 2.8	77	15	- 7	6	9	0	76	51	2.8	SSE	13.9	W	27	0	6	24	8.6	29
NEBRASKA																																
GRAND ISLAND	561	949.8	1017.4	10.0	- 2.8	5.8	2.4	23.3	5	-11.7	14	0	21	- 2.2	63	6	- 13	5	2	1	T	T	4.9	S	13.4*	N	28+	14	6	10	5.1	
LINCOLN U	351			14.4	1.1	7.9	3.0	21.7	5	- 7.2	14	0	13			5	- 27	4	4	0	0	0	4.5	S#	16.5	N	28	12	9	9	4.8	77
NORFOLK	469	959.9		12.2	- 2.8	4.5	2.3	20.6	27+	-11.7	14	0	22			5	- 18	3	3	1	0	0						10	9	11	5.3	
NORTH PLATTE	844	915.7	1017.0	12.8	- 5.6	3.8	1.8	23.3	15	-11.7	13	0	30	- 4.4	63	10	- 3	7	3	1	T	T	4.1	NW	17.0	NW	28	13	12	5	4.4	86
OMAHA	298	976.3	1017.0	13.9	0.9	6.7	2.9	20.6	7	- 6.7	29+	0	17	- 1.7	61	10	- 22	6	3	1	0	0	4.4	SSE	15.7	NW	28	14	4	12	5.2	62
OMAHA N OMAHA AP	402	968.0		12.8	0.0	6.3	3.6	18.9	8+	- 8.3	23	0	16			8	- 25	5	4	0	0	0						10	9	11	5.3	
SCOTTSBLUFF	1204	879.1	1017.6	12.8	- 4.4	4.4	2.6	21.7	15	-10.0	30	0	26	- 5.6	57	3	- 9	3	2	0	T	T	4.6	NW	13.4*	NW	29	8	9	13	5.7	
VALENTINE	789	923.8		12.2	- 4.4	3.7	2.8	25.6	15	-13.3	23	0	26			13	1	8	4	0	79	76	4.3	W#	15.2	N	28	9	13	8	5.0	81
NEVADA																																
ELKO	1547	846.4	1020.8	8.3	- 5.6	1.5	0.3	17.2	14	-14.4	22	0	28	- 2.2	78	49	27	14	9	1	135	76	2.0	NE	10.3*	S	14	3	8	19	7.8	
ELY	1905	809.6	1019.6	9.4	- 6.7	1.3	0.3	18.3	12	-16.7	22+	0	28	- 5.0	69	15		11	4	2	127	102	3.9	S	17.9	SE	6	4	9	17	7.3	68
LAS VEGAS	659	951.2	1018.0	18.9	6.7	12.8	1.1	26.1	14	0.6	22	0	0	0.0	45	8	1	7	4	0	0	0	3.4	WSW	13.0*	SW	15	11	8	11	5.3	82
RENO	1342	863.6	1019.7	12.2	- 2.8	4.6	0.5	19.4	13	- 7.8	22+	0	22	- 1.7	70	37	22	14	7	0	79	T	2.4	S	18.8	S	5	5	7	18	7.4	61
WINNEMUCCA	1310	869.3		11.7	- 2.8	4.4	2.3	19.4	14	-10.0	18	0	24			27	7	9	8	0	0	T	3.1	S	15.2	W	6	3	7	20	7.8	37
NEW HAMPSHIRE																																
CONCORD	101	1002.5	1012.9	10.6	1.1	5.7	2.6	20.0	18	- 6.7	26	0	15	2.2	80	172	78	50	16	0	T	T	2.9	NW	16.1	SW	30	3	3	24	8.5	27
MT WASHINGTON OBS	1908	798.0		- 6.7	- 8.3	- 5.0	1.5	6.1	30+	-20.6	25	0	29			446	278	114	23	1	752	203	16.4	W#	50.5Y	NE	7	1	3	26	9.3	09
NEW JERSEY																																
ATLANTIC CITY	18	1013.2	1015.3	15.0	5.6	10.1	1.9	21.7	18	- 2.8	26+	0	4	4.4	70	164	71	73	9	0	0	0	5.3	NW	17.0*	ENE	7+	10	6	14	6.2	44
ATLANTIC CITY U	3			13.3	6.7	9.9	0.9	17.2	11	- 1.7	25	0	2			139	42	71	9		0	0	5.8		22.8*	W	30					
NEWARK	3	1013.2	1014.4	13.9	6.1	9.8	2.4	22.8	18	- 0.6	26+	0	3	3.3	68	144	59	53	11	0	T	0	5.2	SW	16.5*	ENE	7	8	9	13	6.5	
TRENTON U	15	1006.8		13.9	6.1	10.1	2.4	21.1	18	- 0.6	25	0	2			153	52	60	10	0	T	T	4.4	NW#	18.3	NE	7	3	14	13	6.7	53
NEW MEXICO																																
ALBUQUERQUE	1618	850.0	1018.3	14.4	0.6	7.6	0.9	20.0	16+	- 4.4	18	0	12	- 2.2	56	7	- 2	5	3	0	T	0	3.0	N	18.8	W	16	15	9	6	3.8	79
CLAYTON	1512	845.5		16.1	- 1.1	7.6	2.2	26.7	15	- 6.7	28	0	19			T	- 8	T	0	1	0	0						23	2	5	2.6	
RATON	1944	805.7		15.0	- 5.0	5.1	2.1	22.8	15	-12.2	29+	0	25			T	- 2	T	0	0	T	T						16	10	4	3.6	
ROSWELL	1103	894.4		19.4	- 1.7	8.8	1.7	28.3	16	-11.1	29	0	18			1	- 7	1	2	1	0	0	4.5		15.6	W	22	16	11	3	3.4	90
SILVER CITY	1638	836.9		17.2	1.1	9.1		22.8	13+	- 5.6	26	0	12			8		3	3	1	T	T						15	7	8	4.0	
NEW YORK																																
ALBANY	84	1009.7	1013.4	10.6	3.3	6.9	2.9	17.2	18	- 5.0	25	0	13	2.8	76	105	37	27	15	0	T	0	3.7	SSE	16.5	SW	30	1	4	25	8.8	26
BINGHAMTON	485	953.4	1013.2	8.3	1.7	5.0	1.9	16.1	18	- 6.7	30	0	11	2.2	82	105	42	39	16	0	89	51	5.2	WNW	18.8	W	30	0	5	25	8.9	16

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 32.2 °C or above	Temperature: No. of days Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .25 mm. or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Fastest mile (1.6 kilometers) Prevailing direction	Wind: Fastest mile (1.6 kilometers) Speed	Wind: Fastest mile (1.6 kilometers) Direction	Wind: Fastest mile (1.6 kilometers) Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
NEW YORK	M.	Mb.	Mb.	°C.	°C.	°C.	°C.	°C.		°C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
BUFFALO	215	985.2	1013.6	9.4	3.3	6.4	2.8	17.2	23+	- 5.0	30	0	5	2.8	78	129	37	45	20	1	79	76	5.5	WNW	17.0	SW	23	0	5	25	9.0	18
NEW YORK U	40	1002.9		13.3	7.2	10.2	1.9	20.6	18	1.1	30	0	0			209	123	97	10	0	T	0	4.5	SW#	17.9	NE	7	10	9	11	5.7	49
NEW YORK LA GUARDIA	6	1012.4	1014.1	13.3	7.8	10.4	1.9	20.6	18	1.7	25	0	0	3.9	66	186	95	93	10	0	T	0	5.6	W	21.5	NE	7	6	10	14	6.8	
ROCHESTER	165	994.1	1013.6	10.6	3.3	6.8	2.3	17.8	23+	- 6.7	25	0	7	3.3	79	110	46	35	16	0	112	0	5.6	WSW	21.5	NW	30+	1	5	24	8.9	19
SCHENECTADY	66			10.6	3.9	7.2	3.4	18.9	18	- 3.3	30+	0	9			117	49	34	16	0	T	0						4	11	15	6.7	
SYRACUSE	125	990.5	1012.7	11.1	3.3	7.2	2.6	17.8	23+	- 6.7	25	0	7	1.1	67	144	52	43	19	0	102	76	4.1	WSW	15.2	S	23	1	3	26	8.9	24
NORTH CAROLINA																																
ASHEVILLE U	671	938.2		10.0	3.3	8.8	0.7	21.7	17	- 3.3	30+	0	11			112	56	63	12	0	30	T	4.2	NW#	17.0	NW	29	9	7	14	5.6	56
CAPE HATTERAS R	2	1015.7	1016.3	15.6	8.9	13.6	0.2	23.9	21	0.6	15+	0	0	8.3	71	94	- 10	33	6	1	0	0	5.2	WNW	23.2*	NNE	29	12	8	10	5.3	58
CHARLOTTE	224	989.4	1017.8	17.8	5.0	11.5	1.0	24.4	19	- 2.2	16+	0	7	3.3	61	88	24	49	6	0	T	0	3.0	NW	11.2	NW	7	11	6	13	5.5	65
GREENSBORO	272	986.6	1017.7	16.1	3.9	9.8	0.9	21.7	19+	- 3.9	16	0	10	2.2	64	121	53	52	8	0	T	0	3.7	WNW	14.3	NW	29	9	8	13	5.9	52
RALEIGH	131	1003.1	1016.9	17.2	3.9	10.6	0.6	22.8	18	- 3.3	15	0	10	3.3	66	179	109	119	7	0	0	0	3.5	WNW	11.2*	NNW	29	10	9	11	5.4	53
WILMINGTON	9	1015.0	1017.7	19.4	6.7	13.0	0.0	25.0	23	- 1.1	15	0	4	6.7	69	123	44	60	6	2	0	0	3.8	W	17.0	SW	29	13	8	9	4.8	72
WINSTON SALEM	293	982.1	1017.7	15.6	4.4	10.1	0.7	21.7	19+	- 2.2	16+	0	8	2.8	64	117	46	46	7	1	T	0	3.6	NW	13.0*	NNW	29	10	6	14	5.7	
NORTH DAKOTA																																
BISMARCK	500	954.4	1016.4	8.3	- 6.7	0.7	2.7	18.3	26	-14.4	23	0	30	- 7.2	61	T	- 15	T	0	0	T	T	4.2	WNW	17.0	NW	29	6	11	13	6.4	59
FARGO	274	980.2	1015.5	7.8	- 5.0	1.5	3.9	16.7	7+	-16.7	23	0	26	- 5.6	63	3	- 18	3	1	0	10	T	4.5	SSE	14.8	NW	12	5	5	20	7.4	48
WILLISTON	579	945.7		7.2	- 8.3	- 0.3	1.6	15.6	4	-22.8	22	0	30			7	- 8	5	4	0	66	51	4.0	SW#	18.8	NW	27	10	10	10	5.8	59
OHIO																																
AKRON	369	977.6	1016.3	10.0	1.7	5.9	1.6	17.2	23+	- 4.4	30+	0	11	1.1	74	47	- 10	17	11	0	124	76	4.9	WNW	15.6*	SSW	23	2	5	23	8.4	
CINCINNATI ORS	232			13.3	3.9	8.6	1.6	20.6	22	- 3.3	24	0	9			20	- 55	5	12	1	10	T	3.0	S#	8.9	W	29+					39
CINCINNATI U	169	994.4		13.9	5.0	9.4		21.1	22	- 1.7	3	0	3			18		6	9	1	T	0										
CLEVELAND	237	987.3	1015.4	10.0	2.8	6.6	2.5	17.8	23+	- 3.9	25	0	8	1.7	73	34	- 33	6	15	1	3	T	5.2	S	16.1	S	23	1	8	21	8.3	22
COLUMBUS	247	987.1	1017.5	12.2	1.7	7.0	1.3	20.0	22+	- 5.0	24	0	14	2.2	73	20	- 43	5	12	0	30	T	4.2	WNW	12.5	SW	23	3	9	18	7.6	39
COLUMBUS U	221			12.2	3.9	8.1	1.8	20.0	17	- 2.2	30+	0	8			22	- 35	7	11	0	10	T										
DAYTON	304	984.3	1017.3	13.3	2.8	7.8	2.4	20.6	17	- 5.6	24	0	10	2.2	72	18	- 50	7	10	0	28	25	4.7	SSW	15.6	S	20	7	4	19	7.1	40
MANSFIELD	393			10.6	2.2	6.3	2.2	17.8	22+	- 6.1	25	0	10			34	- 34	9	13	0	30	T						3	7	20	7.9	
TOLEDO	206	990.1	1015.8	11.1	1.1	6.2	2.5	19.4	17	- 6.1	30+	0	12	2.2	77	45	- 7	15	12	1	T	0	4.7	WSW	16.1	SW	23	5	10	15	7.3	34
YOUNGSTOWN	357	972.6	1015.7	9.4	2.2	5.9	1.3	17.2	17	- 6.7	25	0	10	1.1	74	82	11	35	14	1	213	102	5.1	SW	12.1*	NW	2	1	5	24	8.7	
OKLAHOMA																																
OKLAHOMA CITY	390	974.2	1018.2	17.8	5.0	11.3	2.4	27.2	7	- 2.8	14	0	6	2.2	60	62	23	43	4	2	0	0	5.4	SSE	18.3	NW	22	14	7	9	4.0	71
TULSA	206	993.7	1018.6	18.9	3.9	11.3	1.8	28.3	16	- 3.9	14	0	10	2.2	58	58	0	42	4	1	0	0	5.2	S	15.2	NW	28+	18	5	7	3.5	74
OREGON																																
ASTORIA	2	1012.7	1013.4	12.2	5.6	8.8	0.8	16.1	11	- 1.1	20+	0	5	6.7	87	334	50	41	27	1	0	0	3.8	SE	15.6*	W	26	2	4	24	8.5	
BURNS U	1265	872.9		8.3	- 3.3	2.5	0.2	17.8	1	-10.6	29	0	25			47	18	21	12	0	130	76						6	5	19	7.3	
EUGENE	110	1002.3		12.2	4.4	8.4	0.9	17.8	25	- 2.8	30+	0	4			200	57	64	20	0	0	0	3.5		14.3*	S	6	1	3	26	8.9	
MEACHAM	1234			5.0	- 0.6	2.1	0.8	10.6	13+	- 6.7	20	0	19			142	36	71	18	0	726	127						1	5	24	8.6	
MEDFORD	396	969.5	1017.9	10.6	1.7	5.9	-0.4	15.0	14+	- 5.0	29	0	11	4.4	91	133	67	39	18	0	0	0	1.8	WNW	9.4*	SE	22+	0	2	28	9.2	
PENDLETON	452	962.2	1016.5	11.1	2.8	6.9	2.0	20.0	1	- 5.0	30	0	7	1.7	73	52	16	21	13	0	T	T	3.8	SSE	16.1*	WSW	6	2	6	22	8.2	
PORTLAND	6	1009.5	1015.2	11.7	3.9	7.8	0.5	15.0	11	- 3.3	30+	0	5	5.0	84	143	8	34	25	2	T	T	4.9	ESE	15.2	S	14	3	2	25	8.5	23
PORTLAND U	9			12.2	6.7	9.4	0.9	15.6	12+	0.6	20	0	0			184	31	39	24		0	0										
ROSEBURG	152	997.5		12.8	4.4	8.6	0.7	18.3	25+	- 0.6	20	0	4			161	48	52	21	0	0	0	1.7	S#	8.9	S	6+	0	3	27	9.0	16
SALEM	59	1008.4	1015.8	11.1	4.4	7.8	0.5	15.6	25	- 3.9	30+	0	6	5.0	85	166	21	29	24	2	0	0	4.2	S	14.8*	S	7	4	4	22	8.2	
SEXTON SUMMIT R	1169	882.5		7.2	1.7	4.6	-1.4	16.1	11	- 4.4	20	0	12			298	187	75	18	0	119	51	6.7	S				3	1	26	8.7	
PACIFIC AREA																																
CANTON ISLAND	3	1008.8		32.8	26.1	29.4	0.7	33.9	17	23.9	18	27	0			14	- 26	9	5	0	0	0	2.8	NE	5.8*	NE	30+	5	13	12	6.4	
ENIWETOK	5	1009.4		31.1	25.6	28.3	0.2	32.2	2+	23.9	19+	2	0			107	- 53	20	20	0	0	0	6.3									
TAGUAC GUAM R	110			30.0	22.8	26.4	0.2	31.1	7+	19.4	1	0	0			175	- 87	34	27	3	0	0	3.0	E#	10.3	E	26+					61
JOHNSTON	0	1013.1	1013.2	27.8	25.0	26.4	0.0	28.9	18+	23.3	4	0	0	22.8	79	43	- 10	13	14	0	0	0	5.9	E	14.8	E	26	6	16	8	6.0	65
KOROR R	27	1007.7	1010.2	31.1	24.4	27.7	0.4	32.8	15	22.8	19	7	0	24.4	87	171	-157	44	12	5	0	0	2.4	E	8.0	E	21+	0	0	30	9.9	64
KWAJALEIN		1009.7	1009.9	30.6	25.0	27.8	0.4	31.7	18+	22.8	27+	0	0	24.4	85	224	- 84	39	21	3	0	0	5.6	ENE	15.6	E	18	1	5	24	8.7	
PONAPE R	37	1004.9	1009.5	31.1	23.3	27.2	0.6	31.7	17+	21.1	3	0	0	23.9	84	116	-312	26	21	3	0	0	2.8	NNE	7.2	NE	17	0	9	21	8.4	58
TRUK MOEN ISLAND	2	1009.2	1009.2	30.6	23.9	27.2	0.1	31.1	22+	22.8	13+	0	0	23.9	83	180	-134	42	18	4	0	0	2.1	NNE	10.7	N	9	0	10	20	8.0	63
WAKE	3	1013.6		30.0	25.6	27.7	0.8	31.1	9+	23.3	25	0	0			79	1	64	8	0	0	0	4.5	NE	10.7*	NE	27	13	14	3	4.5	
YAP R	16	1007.1	1007.8	30.6	24.4	27.5	0.0	32.2	15+	22.8	5	3	0	24.4	88	190	- 93	46	16	5	0	0	3.2	NE	13.0	NE	19	0	2	28	9.7	60

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days						No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)								
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PENNSYLVANIA																																
ALLENTOWN	113	1000.4	1014.8	12.8	3.3	8.1	2.6	21.1	18	- 3.9	26+	0	8	3.3	74	160	75	58	10	1	T	0	5.2	WNW	17.0*	WNW	30	5	11	14	6.7	
ERIE	223	988.2	1014.6	10.6	3.9	7.2	2.1	18.3	22	- 1.1	30	0	2	2.8	73	150	65	36	20	3	165	25	8.0	SSW	16.5*	S	23	1	3	26	9.1	
HARRISBURG	102	1001.5	1015.4	12.8	2.2	7.7	1.1	22.8	18	- 3.9	26+	0	11	1.7	68	151	76	58	11	0	T	T	4.5	WNW	14.8	NE	7	5	10	15	7.2	47
PHILADELPHIA	2	1010.9	1014.9	13.9	3.9	8.9	2.1	21.1	17	- 3.3	25	0	6	3.9	73	169	83	66	10	0	T	T	4.6	WSW	14.3	W	30	6	10	14	6.9	55
PITTSBURGH	347	985.3	1016.1	11.1	1.7	6.5	1.6	20.6	18	- 6.1	25	0	14	1.7	73	65	8	26	13	0	147	76	4.7	WNW	13.4*	WNW	2	0	6	24	8.7	44
PITTSBURGH U	228			12.2	4.4	8.5	1.6	20.6	18	- 2.2	25	0	2			75	16	29	14		135	0										37
READING U	81	1002.6		10.0	5.6	9.6	2.3	23.9	18	- 1.1	26	0	2			155	69	62	9	0	T	T	5.6	W#	19.2	W	30	5	12	13	7.0	42
SCRANTON	287	979.6	1014.2	11.1	3.3	7.3	3.1	19.4	18+	- 4.4	30	0	6	2.8	73	117	43	57	10	0	36	25	3.9	SW	12.1	SE	23	0	8	22	8.4	37
WILLIAMSPORT	161	990.2	1015.1	11.7	2.8	7.3	2.2	20.6	18	- 3.9	4	0	8	1.7	69	129	26	59	10	0	30	T	4.7	W	13.9*	S	23	0	6	24	8.6	
RHODE ISLAND																																
BLOCK ISLAND	34	1008.5		12.2	6.7	9.3	1.7	16.1	29+	- 1.7	26	0	2			147	52	61	12	0	3	T						4	10	16	7.3	
PROVIDENCE	17	1007.1	1013.2	12.8	3.9	8.3	2.2	21.7	18	- 4.4	26	0	8	3.3	75	166	61	77	12	1	T	0	5.2	WSW	21.0*	S	30	5	7	18	7.5	37
SOUTH CAROLINA																																
CHARLESTON	12	1016.2	1018.1	21.1	6.7	14.1	0.8	26.7	22	- 1.7	15+	0	4	7.8	73	120	67	78	10	1	0	0	3.6	W	23.7Y	W	29	14	5	11	4.6	64
CHARLESTON U	3			18.9	10.6	14.7	-0.1	23.9	19	2.2	14	0	0			100	51	52	10	0	0	0	4.6		18.3	W	29					
COLUMBIA	64	1005.5	1018.6	19.4	5.0	12.4	0.3	26.1	19	- 3.3	15	0	7	5.0	67	107	47	58	7	0	0	0	2.9	WSW	9.8*	WNW	7	14	4	12	4.8	67
FLORENCE	43	1012.0	1017.8	19.4	5.6	12.6	0.1	25.0	22	- 2.2	16	0	3	5.0	66	96	37	53	7	0	0	0	3.5	NNE	11.2*	NW	7	13	6	11	4.8	
GNVLE SPARTANBURG	292	981.1	1018.4	17.8	5.6	11.6	0.6	24.4	19	- 2.8	15	0	6	3.3	61	106	34	53	9	1	0	0	3.4	SW	13.4	NW	7	11	7	12	5.4	59
SOUTH DAKOTA																																
HURON	390	968.2	1016.4	10.6	- 5.6	2.4	2.3	20.6	2	-15.6	23	0	28	- 4.4	67	21	4	19	4	1	51	51	5.0	SSE	14.8	NW	28	6	10	14	6.5	65
RAPID CITY	965	900.7	1016.9	11.7	- 2.8	4.2	2.5	21.1	15	-12.2	22	0	22	- 6.7	51	3	- 7	2	4	0	8	T	4.6	NW	17.0	NW	27	7	9	14	6.4	67
SIOUX FALLS	433	963.6	1016.3	11.7	- 3.3	4.0	3.7	18.3	27+	- 9.4	23	0	25	- 2.8	66	9	- 16	9	2	1	0	0	4.6	NNW	13.0*	NNW	28	7	10	13	6.3	
TENNESSEE																																
BRISTOL	459	963.2	1018.4	14.4	2.2	8.4	0.9	21.7	22	- 4.4	16	0	12	2.2	69	120	56	44	11	0	170	76	2.0	WNW	9.4*	NNW	7	8	5	17	6.5	
CHATTANOOGA	204	991.8	1019.8	16.7	4.4	10.6	1.2	24.4	19	- 5.0	15	0	9	4.4	72	130	38	68	12	0	T	0	3.5	NNW	18.3	NW	30	12	4	14	6.0	55
KNOXVILLE	290	983.6	1019.7	13.9	2.8	8.5	-0.5	22.8	22	- 3.9	3	0	12	3.3	73	133	51	56	12	0	150	25	3.0	NE	11.2	S	22+	9	4	17	6.3	57
MEMPHIS	80	1004.5	1019.4	17.8	5.6	11.9	1.6	24.4	17	- 2.8	15+	0	7	5.6	71	69	- 42	15	8	3	0	0	3.7	SE	15.2	S	22	11	8	11	5.2	62
MEMPHIS U	83			16.7	7.8	12.4	1.4	23.9	17	- 0.6	14	0	1			66	- 40	17	8		0	0										
NASHVILLE	176	999.0	1019.2	15.6	3.3	9.6	0.4	22.8	22+	- 4.4	15	0	11	4.4	74	62	- 22	18	10	2	T	T	3.8	NW	15.2	NW	29	8	4	18	6.7	40
OAK RIDGE	276	986.1		15.0	2.8	8.8	0.3	23.3	22	- 4.4	15	0	11			109	13	41	12	0	3	0	1.8		14.8Y		23	9	7	14	6.2	
TEXAS																																
ABILENE	536	955.8	1017.6	21.1	7.2	14.1	2.4	26.7	7	- 1.7	29	0	2	5.0	60	68	40	42	8	2	0	0	3.9	SSE	15.6	NE	8	13	10	7	4.3	73
AMARILLO	1099	888.1	1016.4	17.8	1.7	9.7	2.2	26.1	16	- 5.6	29	0	12	- 1.1	52	8	- 8	8	2	1	0	0	6.3	SW	17.9	NE	28	22	6	2	2.8	92
AUSTIN	182	996.3	1018.3	22.2	11.7	17.0	2.1	31.7	6	1.7	24	0	0	8.3	63	40	- 14	12	8	2	0	0	4.2	N	13.0	S	16+	10	3	17	6.2	50
BROWNSVILLE	5	1013.7	1016.8	26.7	15.6	20.9	1.2	34.4	6	2.8	30	2	0	14.4	71	31	- 2	15	5	1	0	0	5.8	SSE	17.9	NW	8	15	8	7	4.3	66
CORPUS CHRISTI	13	1016.3	1017.6	25.0	15.0	19.8	1.9	34.4	6	2.2	30	2	0	13.3	71	42	- 2	35	5	1	0	0	5.8	SSE	13.9	SE	17+	9	7	14	5.8	56
DALLAS	147	999.8	1018.6	20.0	7.8	13.9	1.2	29.4	7	- 2.2	24	0	1	5.0	60	46	- 23	26	7	2	0	0	4.9	N	21.5	NW	1	12	9	9	4.8	67
DEL RIO	313			22.8	10.0	16.6		32.8	6	- 0.6	30	1	1			16		7	5	1	0	0	4.2					12	4	14	5.6	
EL PASO	1194	887.6	1016.4	18.9	5.0	11.9	0.7	25.6	15+	- 0.6	27+	0	3	0.0	48	19	11	13	4	1	0	0	3.2	NNE	21.0	W	21	15	7	8	4.1	82
FORT WORTH	166	997.5	1018.5	21.1	7.8	14.7	2.0	31.1	7	- 1.1	24	0	1	5.0	58	33	- 30	16	6	1	0	0	4.3	NNW	13.4*	NNW	28	13	8	9	4.6	
GALVESTON U	2			21.1	16.1	18.6	1.4	26.7	5	7.2	30	0	0			140	50	58	6	0	0	0	5.4	NE	16.1	NE	8					59
HOUSTON U	12			22.8	13.9	18.4	2.0	31.1	6+	4.4	24	0	0			83	- 20	36	7		0	0										
HOUSTON	15	1015.4	1018.0	23.3	12.2	17.8	1.6	31.1	6	1.7	30	0	0	10.6	68	145	47	40	7	3	0	0	4.8	SSE	13.4*	SE	8	7	6	17	6.3	65
LAREDO	152	1001.7	1017.0	26.1	13.3	19.7	1.5	34.4	5	1.7	30	3	0	10.0	60	43	21	38	4	2	0	0	4.8	ESE	13.4*	WNW	8	15	5	10	4.6	
LUBBOCK	988	904.7	1017.5	18.9	2.2	10.4	1.6	27.8	15	- 5.6	29	0	9	1.7	61	29	15	28	3	2	0	0	5.7	S	19.7*	W	21	16	9	5	3.4	
MIDLAND	870	916.9	1016.1	20.6	6.1	13.3	1.9	31.1	7	- 3.3	29	0	4	1.7	51	20	8	14	4	2	0	0	4.7	S	14.3*	NW	21+	13	9	8	4.3	
PORT ARTHUR	3	1016.4	1018.0	22.8	11.1	17.1	1.9	30.6	6	1.7	30+	0	0	11.7	76	251	164	112	10	3	0	0	4.6	NNE	26.8	NE	9	10	8	12	5.6	68
SAN ANGELO	579	949.6	1017.3	20.6	6.7	13.6	0.3	31.7	7	- 1.1	30+	0	4	5.0	61	54	34	29	7	3	0	0	3.9	SSE	13.0*	NW	21	12	8	10	4.9	
SAN ANTONIO	241	993.4	1018.0	22.2	11.7	16.9	1.6	31.1	6	1.1	30	0	0	8.9	65	49	14	17	7	1	0	0	4.2	N	12.5	N	1	10	6	14	5.9	58
VICTORIA	30	1013.2		23.9	13.3	18.6	1.7	33.3	6	2.8	24	2	0			99	39	51	6	2	0	0	5.2		19.7Y		1	8	6	16	6.2	
WACO	152	997.0	1018.2	21.1	9.4	15.3	1.5	31.1	7+	- 1.7	24	0	1	7.8	66	82	26	27	8	1	0	0	6.3	NW	17.4*	NNW	1	11	7	12	5.5	
WICHITA FALLS	303	980.5	1017.9	21.1	5.6	13.4	2.3	30.6	7	- 0.6	29+	0	2	4.4	61	64	28	44	3	2	0	0	4.8	S	16.5*	NNE	28	15	9	6	3.8	
UTAH																																
MILFORD	1533	846.0		10.6	- 2.8	3.8	1.6	20.0	10+	-12.2	22	0	22			53	40	26	7	1	356	102						6	8	16	6.8	
SALT LAKE CITY	1286	870.3	1021.4	9.4	- 1.7	3.8	0.4	18.9	14	-13.9	29	0	21	- 0.6	75	40	7	17	6	0	193	102	3.8	SSE	14.3	NW	15+	4	8	18	7.6	49
WENDOVER	1291	873.1		8.3	- 0.6	3.8	0.7	15.6	9	- 5.6	22	0	16			19	11	14	6	1	T	T						9	6	15	6.3	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

NOVEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	C.	°C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
VERMONT																																
BURLINGTON	101	997.2	1012.0	8.3	0.6	4.6	1.9	15.6	23	- 8.9	30	0	14	1.1	79	100	34	14	17	0	112	76	4.3	S	12.5	SW	23	1	3	26	9.0	17
VIRGINIA																																
LYNCHBURG	287	991.8		15.0	4.4	9.7	1.4	23.9	18+	- 2.8	14	0	6			130	64	52	8	0	T	0	3.1		12.1	W	29	13	5	12	5.3	56
NORFOLK	8	1015.0	1016.3	16.1	6.1	11.1	0.3	23.3	18	- 1.1	26+	0	4	5.6	72	135	57	52	9	0	0	0	5.0	S	17.0	E	6	12	7	11	5.2	70
RICHMOND	49	1009.9	1016.2	16.7	3.3	10.1	0.9	25.0	17	- 3.9	16	0	11	2.8	67	170	93	68	10	1	T	0	3.8	S	12.1	NW	7	13	8	9	4.9	61
ROANOKE	358	971.4	1017.3	14.4	3.9	9.2	1.1	22.8	17	- 2.8	25	0	6	1.1	60	97	28	37	7	0	T	0	4.7	WNW	23.2*	NNW	29	9	8	13	5.9	
WASHINGTON																																
OLYMPIA	58	1006.8	1013.6	10.6	3.3	7.1	0.6	14.4	3	- 3.3	30	0	5	5.6	89	262	67	39	27	0	3	0	3.5	S	13.4*	S	22+	1	4	25	8.9	
SEATTLE TACOMA	122	999.7	1013.9	10.0	3.9	6.9	0.3	15.0	11+	- 2.2	30	0	6	3.9	82	246	110	35	25	2	25	T	4.8	SSW	13.9*	SW	26	1	6	23	8.6	
SEATTLE U	4			10.6	6.7	8.7	0.4	15.6	3	1.7	30+	0	0			194	67	29	23		T	0			20.6	SW	15					20
SPOKANE	718	946.1	1015.6	6.7	0.0	3.4	1.6	14.4	1	- 7.2	29	0	10	0.0	82	66	9	19	13	0	10	T	4.6	SSW	14.8	SW	27+	1	4	25	8.8	20
STAMPEDE PASS R	1206	875.8		1.1	- 2.2	- 0.6	-0.2	7.2	30	- 7.8	20	0	28			283	- 36	39	24	0	1941	1118						2	3	25	8.9	
TATOOSH ISLAND R	30	1008.5	1011.4	10.6	6.7	8.6	0.1	12.8	13	2.8	20+	0	0	5.0	80	376	109	57	27	3	0	0	9.4	ENE	24.1	SW	3	1	4	25	8.7	25
WALLA WALLA U	289			11.1	4.4	7.7	1.9	20.0	1	- 5.6	30	0	5			73	30	0	13	0	T	0										
YAKIMA	323	975.8	1015.9	10.6	- 0.6	4.8	1.8	15.6	26	- 7.8	30	0	17	0.0	74	29	4	12	9	0	0	0	3.0	WNW	14.3*	WNW	27	2	8	20	8.1	
WEST INDIES																																
SAN JUAN P.R.	2	1011.7	1014.3	30.0	22.2	25.9	0.3	31.7	15	20.0	12	0	0	22.2	81	76	- 89	18	17	6	0	0	3.4	ENE	10.3	E	18	6	17	7	5.6	56
SWAN ISLAND	9			28.9	24.4	26.8	0.1	28.3	8+	22.8	21+	0	0			71	-117	14	15	2	0	0						1	13	16	7.4	
WEST VIRGINIA																																
BECKLEY	763	928.5	1018.5	10.6	1.7	6.1		19.4	17	- 6.1	25	0	13	1.1	74	142		52	13	0	152	102	4.3	WNW	13.4*	SSE	20	6	5	19	7.2	
CHARLESTON	286	981.9	1017.9	13.3	2.2	7.9	0.2	22.2	22	- 5.0	25	0	12	1.7	68	81	0	31	9	1	91	102	2.9	SW	8.9*	WSW	1	5	6	9	7.4	
ELKINS	600	947.0	1017.3	11.1	- 0.6	5.4		21.1	18+	- 8.9	25	0	21	1.7	80	121		35	14	0	124	102	3.8	WNW	13.9*	WNW	23	4	4	22	7.9	
HUNTINGTON	252	987.9	1018.5	13.9	2.2	8.1		22.8	22	- 4.4	25	0	11	2.8	73	56	- 11	22	9	0	71	51	3.1	SW	9.4*	NW	1	5	7	18	7.5	
PARKERSBURG U	186			13.3	3.3	8.3	1.2	21.7	17	- 3.3	25	0	8			36	- 24	18	12	1	8	T	3.4		14.8	NW	2					29
WISCONSIN																																
GREEN BAY	208	991.6	1014.5	7.8	- 1.1	3.3	2.3	15.6	3	-11.7	30	0	19	- 0.6	79	41	- 7	26	6	1	T	T	4.2	WNW	13.0	N	30	5	7	18	7.2	33
LA CROSSE	198	990.6	1015.7	9.4	0.6	5.0	3.8	16.7	3	- 8.3	30	0	14	0.0	73	48	- 1	41	5	2	3	T	4.9	S	14.3*	NW	1	6	8	16	6.8	
MADISON	262	979.5	1015.5	9.4	- 1.7	4.0	2.6	16.7	7+	-10.0	30	0	22	- 0.6	74	50	- 5	30	6	1	3	T	4.3	S	14.8	NW	22	7	5	18	7.2	37
MILWAUKEE	205	990.1	1015.5	10.0	0.6	5.4	3.3	16.7	17	- 5.6	30+	0	14	1.1	74	55		23	7	2	T	T	4.9	SSW	16.1	W	23	8	8	14	6.2	49
WYOMING																																
CASPER	1621	836.5	1016.7	10.0	- 2.8	3.5	2.6	17.8	14	-11.7	21	0	24	- 6.7	54	8	- 10	3	4	0	30	25	6.2	SW	14.3*	SSW	2	3	9	18	7.4	
CHEYENNE	1865	812.6	1016.9	12.2	- 3.3	4.4	2.9	19.4	14+	- 9.4	22	0	26	- 7.8	47	1	- 15	1	1	0	3	T	5.5	WNW	15.2	NW	22	10	8	12	5.5	71
LANDER	1696	834.4	1017.3	9.4	- 4.4	2.4	2.9	16.7	15	- 9.4	30	0	27	- 5.6	61	3	- 20	2	4	0	46	51	2.1	WSW	19.2	SW	6	5	13	12	6.6	78
SHERIDAN	1202	883.6	1017.3	10.0	- 3.9	3.0	2.2	20.0	26+	-12.2	21	0	28	- 4.4	65	17	- 4	14	6	0	56	25	3.0	NW	15.2	NW	15+	4	9	17	7.4	57

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

Data in this table are obtained by conversion from data in the English Units table.

V Sun below horizon November 19 - 30, inclusive.

X Sun below horizon November 24 - 30, inclusive.

HEATING DEGREE DAYS

(Base 65°F.)

NOVEMBER 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	350	389	544
Huntsville	390	434	565
Mobile	186	203	265
Montgomery	292	326	398
ALASKA			
Anchorage	1583	3266	3266
Annette	814	1824	2127
Barrow	2112	6561	6149
Barter Island	2182	6261	5923
Bethel	1868	4393	3801
Cold Bay	1090	3276	3117
Cordova	1189	3002	3077
Fairbanks	2267	4442	4181
Juneau	1093	2625	2768
King Salmon	1694	3769	3346
Kotzebue	2090	5166	4527
McGrath	2188	4677	4154
Nome	1805	4741	4219
St. Paul Is.	1052	3740	3575
Shemya	815	3136	3213
Yakutat	1060	2737	2811
ARIZONA			
Flagstaff	804	1488	1692
Phoenix (U)	110	110	
Phoenix	133	133	223
Prescott	526	677	851
Tucson	186	188	274
Winslow	578	681	929
Yuma	63	63	99
ARKANSAS			
Ft. Smith	376	408	589
Little Rock	350	380	601
Texarkana	235	249	423
CALIFORNIA			
Bakersfield	303	344	319
Bishop	567	751	884
Blue Canyon	668	1316	1114
Burbank	182	198	226
Eureka (U)	366	1243	1528
Fresno	382	440	438
Long Beach	149	152	227
Los Angeles (U)	103	104	169
Los Angeles	107	108	350
Mt. Shasta (R)	729	1385	1284
Oakland	321	537	584
Point Arguello (R)	298	906	1046
Red Bluff	418	508	371
Sacramento (U)	364	420	374
Sacramento	398	463	377
Sandberg (R)	543	857	712
San Diego	115	121	208
San Francisco (U)	244	676	817
San Francisco	312	564	668
Santa Catalina	172	251	
Santa Maria	275	594	704
Stockton	417	477	
COLORADO			
Alamosa	1014	1780	2147
Colorado Springs	680	929	1472
Denver	690	961	1291
Grand Junction	624	775	1129
Pueblo	637	784	1130
CONNECTICUT			
Bridgeport	482	846	988
Hartford	551	998	1237
Middletown	589	1178	
New Haven	506	914	1094
DELAWARE			
Wilmington	502	808	909
DIST. OF COLUMBIA			
Washington (U)	398	551	
Washington	449	648	769
FLORIDA			
Apalachicola (U)	154	172	169
Daytona Beach	91	106	75
Fort Myers	35	35	24
Jacksonville	161	183	156
Key West	5	5	0
Lakeland (U)	75	79	57
Miami	25	25	0
Miami Beach	12	12	0
Orlando	72	75	72
Pensacola	208	234	211
Tallahassee	238	282	226
Tampa	75	90	60
West Palm Beach	30	30	6
GEORGIA			
Athens	371	458	532
Atlanta	398	472	559
Augusta	308	394	411
Columbus	319	362	420
Macon	290	338	368
Rome	454	576	659
Savannah	232	275	293
Thomasville (U)	201	230	223
IDAHO			
Boise	631	908	1281
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	1001	1682	1999
Idaho Falls 42NW(R)	1004	1693	2093
Lewiston	658	981	1282
Pocatello	795	1172	1573
ILLINOIS			
Cairo (U)	407	453	713
Chicago (Midway)	579	735	1141
Chicago (O'Hare)	684	986	
Moline	653	860	1247
Peoria	652	833	1178
Rockford	647	888	1366
Springfield	589	734	1074
INDIANA			
Evansville	532	660	905
Ft. Wayne	592	826	1251
Indianapolis	590	798	1129
South Bend	592	862	1266
IOWA			
Burlington	627	779	1183
Des Moines	649	816	1262
Dubuque	729	1024	1555
Sioux City	702	917	1411
Waterloo	720	1011	1466
KANSAS			
Concordia	580	688	1011
Dodge City	549	631	950
Goodland	701	919	1278
Topeka	521	603	999
Wichita	523	582	880
KENTUCKY			
Lexington	540	680	902
Louisville	493	651	944
LOUISIANA			
Alexandria	280	314	
Baton Rouge	180	192	268
Lake Charles	149	158	229
New Orleans	95	97	
(Audubon Park)			
New Orleans	170	179	226
Shreveport	234	246	371
MAINE			
Caribou	905	2088	2255
Greenville (U)	889	2087	
Portland	691	1510	1575
MARYLAND			
Baltimore (U)	404	562	702
Baltimore	524	818	897
MASSACHUSETTS			
Blue Hill Obs. (R)	593	1108	1201
Boston	495	857	988
Nantucket	481	944	1084
Pittsfield	684	1505	1658
Worcester	655	1262	1411
MICHIGAN			
Alpena	719	1579	1792
Detroit (City AP)	562	804	1191
Detroit	670	1094	1263
(M. Wayne Co.)			
Detroit	622	991	1197
(Willow Run)			
Escanaba (U)	746	1443	1852
Flint	640	1139	1425
Grand Rapids	620	1002	1410
Lansing	638	1104	1410
Marquette (U)	763	1390	1843
Muskegon	625	1050	1444
S. Ste. Marie	780	1659	2113
MINNESOTA			
Duluth	874	1527	2273
Internat. Falls	1004	1718	2483
Minneapolis	793	1171	1792
Rochester	780	1214	1725
St. Cloud	857	1297	1914
MISSISSIPPI			
Jackson	265	295	380
Meridian	332	375	420
Vicksburg (U)	238	261	332
MISSOURI			
Columbia	538	626	956
Kansas City	448	494	902
St. Joseph	521	604	1059
St. Louis (RFC)	475	551	814
St. Louis	574	690	920
Springfield	519	586	868
MONTANA			
Billings	802	1215	1561
Butte	980	1946	
Glasgow	984	1414	2060
Great Falls	782	1269	1721
Havre	988	1516	2002
Helena	897	1519	1987
Kalispell	926	1882	2250
Miles City	814	1147	1660
Missoula	899	1744	2097
NEBRASKA			
Grand Island	670	952	1248
Lincoln (U)	558	689	1108
Norfolk	741	972	1390
North Platte	780	1065	1454
Omaha	623	759	1205
Omaha N. Omaha AP	644	807	1354
Scottsbluff	746	1028	1488
Valentine	782	1068	1621
NEVADA			
Elko	905	1523	1753
Ely	913	1555	1836
Las Vegas	295	312	446
Reno	738	1309	1514
Tonopah	742	1110	
Winnemucca	744	1225	1656
NEW HAMPSHIRE			
Concord	675	1361	1636
Mt. Washington	1252	4092	
Obs. (R)			
NEW JERSEY			
Atlantic City	438	711	839
Atlantic City (U)	447	756	
Newark	454	701	903
Trenton (U)	442	742	897
NEW MEXICO			
Albuquerque	573	697	853
Clayton	578	721	1081
Raton	705	1041	1419
Roswell	508	571	838
Silver City	495	604	
NEW YORK			
Albany	612	1206	1374
Binghamton	714	1482	1569
Buffalo	635	1208	1429
New York (U)	431	690	803
New York	421	640	778
(LaGuardia)			
Rochester	615	1191	1328
Schenectady	598	1165	
Syracuse	597	1170	1325
NORTH CAROLINA			
Asheville (U)	513	732	848
Cape Hatteras (R)	251	336	351
Charlotte	361	466	571
Greensboro	456	685	738
Raleigh	413	619	635
Wilmington	283	367	365
Winston-Salem	436	622	675
NORTH DAKOTA			
Bismarck	945	1424	1953
Devils Lake (U)	1032	1556	2199
Fargo	901	1309	1980
Grand Forks FAA	948	1485	
Pembina	1018	1532	
Williston	1001	1432	
OHIO			
Akron	661	1036	1277
Cincinnati (U)	474	557	
Cincinnati	586	787	972
Cincinnati Obs.	519	639	914
Cleveland	627	1032	1340
Columbus	603	890	1084
Columbus (U)	553	712	
Dayton	561	784	1090
Mansfield	640	978	1310
Toledo	646	1007	1331
Youngstown	661	1173	1271
OKLAHOMA			
Oklahoma City	381	411	702
Tulsa	376	401	632
OREGON			
Astoria	510	1194	1450
Burns (U)	847	1520	1641
Eugene	530	959	1148
Meacham	868	1864	1994
Medford	665	1004	1061
Pendleton	611	993	1203
Portland (U)	475	764	904
Portland	561	1027	1099
Roseburg	521	906	1039
Salem	559	1079	1099
Sexton Summit (R)	733	1764	1460
PENNSYLVANIA			
Allentown	546	949	1136
Erie	594	1036	1232
Harrisburg	570	969	994
Philadelphia (U)	371	550	
Philadelphia	502	869	977
Pittsburgh (U)	524	756	966
Pittsburgh	634	1012	1215
Reading (U)	465	732	908
Scranton	588	1047	1377
Williamsport	593	1049	1212
RHODE ISLAND			
Block Island	478	922	980
Providence	536	982	1144
SOUTH CAROLINA			
Charleston (U)	193	219	244
Charleston	233	268	341
Columbia	311	395	429
Florence	305	397	393
Greenville-	362	457	
Spartanburg			
SOUTH DAKOTA			
Huron	849	1128	1638
Pierre	788	1065	
Rapid City	755	1027	1577
Sioux Falls	767	1105	1646
TENNESSEE			
Bristol	531	652	896
Chattanooga	414	475	671
Knoxville	525	644	705
Memphis (U)	318	348	510
Memphis	352	395	574
Nashville	465	541	683
Oak Ridge	508	635	762
TEXAS			
Abilene	251	259	465
Amarillo	458	511	835
Austin	137	137	256
Brownsville	48	48	66
Corpus Christi	69	69	120
Dallas	257	266	383
Del Rio	126	126	
El Paso	341	358	452
Fort Worth	227	231	389
Galveston (U)	80	80	138
Houston (U)	93	93	165
Houston	108	108	174
Laredo	75	75	105
Lubbock	425	463	705
Midland	274	278	468
Port Arthur	141	145	247
San Angelo	269	276	356
San Antonio	141	141	238
Victoria	95	95	156
Waco	208	210	313
Wichita Falls	278	287	505
UTAH			
Milford	776	1074	1409
Salt Lake City	777	1039	1267
Wendover	774	1036	1242
VERMONT			
Burlington	735	1637	1584
VIRGINIA			
Lynchburg	456	656	814
Norfolk	384	584	544
Richmond	439	707	733
Roanoke	485	700	829
WASHINGTON			
Olympia	603	1220	1395
Seattle (U)	514	905	1098
Seattle	525	876	1229
Seattle-Tacoma	612	1118	1380
Spokane	802	1368	1644
Stampede Pass (R)	1015	2649	2666
Tatoosh Island (R)	520	1540	1820
Walla Walla	598	881	
Walla Walla (U)	569	836	1078
Yakima	721	1251	1434
WEST VIRGINIA			
Beckley	653	1137	
Charleston	558	832	896
Elkins	692	1340	
Huntington	548	779	811
Parkersburg (U)	539	773	930
WISCONSIN			
Green Bay	807	1348	1733
La Crosse	714	1009	1551
Madison	769	1220	1544
Milwaukee	692	1102	1445
WYOMING			
Casper	795	1186	1796
Cheyenne	742	1154	1787
Lander	853	1294	1956
Sheridan	820	1215	1842

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

NOVEMBER 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS	DEATHS	INJURIES	PROP-ERTY	CROPS
Alabama *																													
Alaska N																													
Arizona						0	0	3	3																				
Arkansas *																													
California										0	12	4	0													0	0	4	0
Colorado *																													
Connecticut																										0	0	5	0
Delaware *																													
Florida	3	1	0	2	5					0	0	3																	
Georgia *																													
Hawaii *																													
Idaho												4																	
Illinois						0	0	?	?																				
Indiana *																													
Iowa *																													
Kansas	1	1			3																								
Kentucky *																													
Louisiana	2	2	0	1	3					0	0	3	5	0	0	3	0									0	0	3	5
Maine										2	3	6	0	0	0	2	0												
Maryland										0	0	4	0													4	?	4	0
Massachusetts										1	0	6	0	0	0	4	0									0	0	4	0
Michigan						0	0	5	C	0	0	5	0	0	0	5	0												
Minnesota *																													
Mississippi *																													
Missouri *																													
Montana										0	1	0	0																
Nebraska *																													
Nevada *																													
New Hampshire										0	0	4	0													0	0	3	0
New Jersey *																													
New Mexico *																													
New York										1		4														1		5	
North Carolina										0	0	5	0									0	0	4	0				
North Dakota *																													
Ohio *																													
Oklahoma	3	2	0	0	2																								
Oregon *																													
Pacific Area *																													
Pennsylvania *																													
Puerto Rico *																													
Rhode Island																													
South Carolina *																										0	0	5	0
South Dakota *																													
Tennessee *																													
Texas	5	2	0	1	4					0	0	?	?																
Utah *																													
Vermont										0	0	3	0																
U. S. Virgin Is.*																													
Virginia	1	1	0	0	4																								
Washington *																													
West Virginia *																													
Wisconsin *																													
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
C Crop damage
N No report received by printing deadline.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

NOVEMBER 1963

There was no major flooding in continental United States during November. Flooding reported was minor.

The drought conditions which prevailed throughout most of the Country during October began to break during November.

ATLANTIC SLOPE DRAINAGE

Heavy rains (over 2 1/2 inches) on the 6th and 7th over most of western Maine caused some flooding on the Androscoggin and Kennebec Rivers. Flash flooding occurred on minor streams and tributaries. There were no reports of major damage as only lowland flooding occurred. The Penobscot and the Saco Rivers stayed well within their banks.

This was the first month since March 1963 that the precipitation in eastern North Carolina had been normal or above. A low pressure system moving northward out of the Gulf of Mexico during the first week of November set off rains averaging from around 2 inches to 5 inches with the heavier amounts falling generally over the Cape Fear, Neuse, and Tar Rivers. Due to the dry antecedent conditions only minor rises occurred on the Roanoke and Dan River Basins. However, sharp rises occurred on the Cape Fear, Neuse, and Tar Rivers with stages reaching bankful at some gaging stations on the Cape Fear and Neuse Rivers. No damage was reported.

MISSISSIPPI SYSTEM

Ohio Basin. --The prolonged drought in the Ohio River Basin began to break on November 1 with a light rain of about 1/2 inch in most areas. By this time the flow in the main stem and most of the tributaries had reached critically low values. One week later, another small storm moved across the eastern portion of the basin. Light showers recurred throughout the Ohio Basin during the last week of the month, ending on the 30th with some 2- to 3-inch amounts in the extreme eastern part. Sufficient runoff occurred to require the lowering of low level wicket-type navigation dams between Portsmouth and Cincinnati, Ohio. In the northern and western parts of the basin, however, the drought conditions continued throughout the month.

Red Basin. --Light flooding occurred during the 22d on the upper Ouachita River above Arkadelphia, Ark. This flooding was due to rainfall averaging over 5 inches from early evening of the 21st to late morning of the 22d. No damage was reported.

Lower Mississippi Basin. --All streams in the Lower Mississippi Basin remained at comparatively low stages throughout the month.

At the end of November, the Mississippi River at Memphis, Tenn., had been below the 0.0 (zero) of the gage since September 10, for a total of 82 days. It remained below zero through December 2, then rose to a stage slightly above zero. This was the second longest period of record that the stage at Memphis had remained at 0.0 (zero) or below. The longest period was 97 days in 1953 (September 12 - December 17).

WEST GULF OF MEXICO DRAINAGE

The Colorado River at Smithville, Tex., reached a record low stage of 0.68 foot on November 29.

PACIFIC SLOPE DRAINAGE

Coquille Basin. --Minor flooding occurred on the Coquille River at Myrtle Point, Oreg., on the 9th due to 3 to 5 inches of rainfall from the 7th to the 9th. Considerable low pasture land was inundated and livestock had to be removed to higher ground. No damage resulted.

Columbia Basin. --The only significant rise of the fall season occurred in the Willamette River Basin early in November during the period from the 7th through the 11th.

Minor precipitation during the last few days of October and the first 3 days of November kept the Willamette River flow nearly constant. However, better than an inch of rainfall during the early morning hours of the 4th centered primarily in the headwaters of the Santiam drainage caused a minor rise at Jefferson, Oreg., with light flooding on the 8th and 9th. The Willamette River at Harrisburg, Oreg., came within 2 feet of flood stage while other downstream points had crest stages 5 to 10 feet below flood stage. Only minor soil erosion resulted from the high stages on the Santiam River and adequate warnings enabled main stem Willamette farmers to remove irrigation equipment from river banks.

Puget Sound Drainage. --This was one of the wettest Novembers on record. There was precipitation every day through the 26th. The heavier rainfall amounts were well distributed as to duration but snowmelt in the Cascades became a factor from the 22d to the 25th. Snow depth at Mt. Baker (4,200 feet) decreased from 105 inches on the 22d to 80 inches on the 26th. Slackening rain and a lowering freezing level stopped the flow threat on the 26-27th.

Flood stages were exceeded on the Skagit and Stillaguamish Rivers in Washington. Streams in the northern portion approached flood stage, but streams in the southern portion remained well below flood stage. No damage resulted.

FLOOD STAGE DATA

(All dates in November unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest *	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Ft.*			*Ft.*	
Neuse: Neuse, N. C.	14	7	7	14.5	7
Smithfield, N. C.	13	8	10	18.1	9
Goldsboro, N. C.	14	13	14	14.35	13
Cape Fear: Elizabethtown, N. C.	20	8	9	21.9	9
PACIFIC SLOPE DRAINAGE					
Coquille Basin					
Coquille: Myrtle Point, Oreg.	35	9	9	35.3	9
PACIFIC SLOPE DRAINAGE (Cont'd.)	*Ft.*			*Ft.*	
Columbia Basin					
Santiam: Jefferson, Oreg.	15	8	9	16.4	8
Puget Sound Drainage					
Stillaguamish: Arlington, Wash.	16	26	27	17.7	26
Skagit: Concrete, Wash.	29	26	27	29.5	26
Mt. Vernon, Wash.	21	26	27	22.2	27

* Provisional

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	ALBANY, N. Y. 1003 MB						ALBUQUERQUE, N. MEX. 840 MB						AMARILLO, TEXAS 893 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	29	86	4.6	83	221	2.9	29	1,619	3.8	69	356	1.9	30	1,095	3.8	66	250	5.4
1000	29	107			205	4.9	29	175					30	158				
950	29	526	4.3	75	255	8.0	29	601					30	581				
900	29	965	2.1	76	273	11.8	29	1,046					30	1,031				
850	29	1,426	.6	73	275	14.4	29	1,517					30	1,497	8.9	46	254	10.3
800	29	1,911	- 1.4	72	280	16.3	29	2,013	5.2	54	295	4.9	30	1,998	7.4	40	262	10.9
750	29	2,422	- 3.4	62	278	18.1	29	2,537	3.4	51	297	7.2	30	2,526	5.1	35	274	10.1
700	29	2,967	- 5.9	60	275	20.2	29	3,096	- .4	49	293	8.4	30	3,088	2.1	29	272	11.7
650	29	3,542	- 8.8	60	275	22.7	29	3,685	- 2.4		282	10.7	30	3,679	- 1.5	30	275	12.8
600	29	4,162	-12.1	56	274	27.0	29	4,320	- 5.8		278	14.4	30	4,316	- 5.6	28	269	15.7
550	29	4,820	-16.1	55	274	28.9	29	4,992	-10.2		281	15.3	30	4,986	-10.0		278	18.5
500	29	5,536	-20.6	53	273	31.3	29	5,725	-15.3		279	17.7	30	5,721	-15.1		281	21.8
450	29	6,303	-26.1	50	269	32.4	29	6,507	-21.2		280	20.6	30	6,501	-21.0		279	24.7
400	29	7,150	-32.4	48	263	35.7	29	7,371	-27.7		281	21.2	30	7,369	-27.7		279	25.3
350	29	8,079	-38.8	47	264	37.1	29	8,316	-35.1		277	23.9	30	8,314	-35.2		277	27.2
300	29	9,122	-45.5		261	42.0	29	9,371	-43.7		283	27.2	30	9,371	-43.1		280	31.9
250	29	10,319	-51.8		263	44.9	29	10,574	-51.7		281	31.3	30	10,578	-51.1		279	38.3
200	29	11,748	-55.9		268	48.4	29	11,999	-58.1		276	39.0	30	12,007	-56.9		275	42.7
175	29	12,597	-56.2		268	47.0	29	12,836	-59.6		270	37.1	30	12,849	-58.9		273	42.9
150	29	13,576	-56.7		268	43.5	29	13,796	-61.7		272	36.7	30	13,812	-61.2		274	43.7
125	29	14,729	-57.5		268	36.9	29	14,919	-63.9		270	35.9	28	14,937	-63.2		278	41.6
100	29	16,134	-59.1		264	30.7	29	16,281	-65.0		271	30.9	28	16,305	-65.4		274	36.3
80	29	17,528	-59.9		267	25.8	29	17,640	-65.1		272	22.1	28	17,663	-65.2		275	29.3
70	29	18,364	-59.8		269	20.2	29	18,460	-64.8		272	17.1	27	18,484	-64.5		276	23.9
60	29	19,324	-59.7		270	15.3	29	19,398	-64.0		271	14.8	26	19,422	-63.5		275	19.6
50	29	20,465	-59.2		274	13.4	28	20,519	-62.3		276	12.2	26	20,547	-61.4		282	13.2
40	29	21,862	-59.2		275	13.2	28	21,904	-60.3		283	8.7	26	21,934	-60.2		287	13.4
30	29	23,669	-58.1		283	12.2	27	23,709	-57.0		286	9.1	25	23,743	-57.1		291	12.2
25	29	24,821	-56.8		286	15.0	27	24,869	-55.1		283	12.0	24	24,901	-55.0		290	14.2
20	28	26,237	-55.5		285	17.3	25	26,302	-53.3		281	16.7	22	26,329	-53.5		286	15.5
15	23	28,089	-53.6		282	21.2	16	28,161	-50.9		277	23.1	16	28,177	-50.3		291	23.7
10	8	30,681	-51.3															
7																		

Standard pressure surface (mb.)	ANCHORAGE, ALASKA 1000 MB						* ANNETTE, ALASKA 999 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	29	-11.8	68	347	2.9	30	37	2.9	77	154	5.8
1000	30	29			358	5.6	30	29			157	6.4
950	30	428	- 8.2	51	13	12.4	30	440	0.0	78	165	10.1
900	30	847	- 7.5	45	17	13.0	30	874	- 3.3	84	181	12.6
850	30	1,292	- 8.1	43	25	12.4	30	1,325	- 5.8	82	188	15.3
800	30	1,761	-10.3	42	38	11.5	30	1,798	- 8.3	77	201	15.9
750	30	2,252	-13.6	45	39	9.9	30	2,297	-11.3	70	211	19.6
700	30	2,777	-16.7	42	27	9.3	30	2,823	-14.6	65	215	20.0
650	30	3,327	-20.1	41	16	10.1	30	3,379	-18.2	64	220	20.4
600	30	3,919	-23.7	39	8	10.1	30	3,975	-22.2	57	214	22.1
550	30	4,541	-27.6	38	355	9.1	30	4,607	-26.7	52	224	23.1
500	30	5,229	-31.9		339	10.9	30	5,291	-31.6	48	228	25.4
450	30	5,962	-36.7		331	13.8	30	6,026	-36.6	47	225	26.2
400	30	6,773	-42.2		316	13.6	30	6,839	-41.6		235	30.9
350	30	7,666	-47.6		318	16.1	30	7,735	-46.2		251	34.2
300	30	8,672	-52.4		291	15.7	30	8,746	-50.2		247	30.7
250	29	9,847	-52.7		292	17.1	28	9,942	-51.5		260	28.6
200	30	11,294	-50.7		288	17.3	28	11,390	-51.1		260	26.4
175	30	12,165	-50.2		280	18.3	28	12,259	-50.7		259	26.2
150	30	13,172	-50.0		275	19.0	28	13,263	-50.7		260	24.1
125	30	14,363	-50.0		276	19.8	28	14,446	-51.3		262	22.1
100	30	15,821	-50.1		273	21.6	28	15,897	-52.4		259	18.6
80	30	17,276	-51.0		278	22.1	28	17,339	-53.0		264	16.9
70	30	18,145	-51.6		277	22.5	28	18,196	-53.3		262	14.2
60	30	19,149	-51.9		278	22.7	28	19,189	-54.2		272	12.8
50	29	20,319	-52.5		277	24.5	27	20,359	-54.7		276	12.2
40	29	21,754	-52.9		274	23.5	27	21,785	-55.0		288	11.1
30	29	23,603	-54.2		283	27.4	25	23,629	-55.4		312	9.7
25	29	24,791	-54.8		285	29.7	25	24,791	-55.8		316	9.5
20	28	26,200	-55.3		285	30.1	25	26,210	-56.3		340	11.1
15	23	28,065	-56.1		285	35.0	22	28,037	-57.2		343	16.1
10	7	30,691	-56.4				15	30,614	-58.9		347	22.0
7							10	32,843	-58.3			

Standard pressure surface (mb.)	ATHENS, GA. 989 MB						* BARROW, ALASKA 1019 MB						BARTER IS., ALASKA 1017 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	246	6.3	85	304	2.3	30	8	-20.5	66	78	3.1	30	18	-21.4	68	270	3.1
1000	30	157					30	144	-18.9	76	72	3.5	30	140	-19.9	68	287	4.7
950	30	584	0.9	62	270	4.3	30	529	-18.4	82	59	4.1	30	522	-20.2	67	307	3.7
900	30	1,031	8.5	54	248	6.2	30	929	-17.7	77	47	4.9	30	920	-20.2	69	296	2.7
850	30	1,503	7.0	48	274	10.7	30	1,357	-17.9	72	30	5.2	30	1,343	-20.2	69	291	1.4
800	30	2,000	5.3	43	280	13.2	30	1,809	-18.9	68	18	5.1	30	1,793	-19.9	66	310	1.9
750	30	2,523	2.7		276	15.9	30	2,293	-20.0	68	8	4.3	30	2,275	-21.4	59	5	3.7
700	30	3,081	- .3	42	273	19.2	30	2,799	-22.1	64	358	6.0	30	2,778	-23.1	54	5	5.2
650	30	3,668	- 3.4	40	276	23.7	30	3,345	-24.7	60	343	7.2	30	3,318	-25.8	48	354	6.6
600	30	4,300	- 6.9	38	275	28.4	30	3,920	-27.6	56	334	10.3	30	3,894	-29.1	47	343	6.8
550	30	4,969	-11.2		276	30.3	30	4,541	-31.5	58	328	12.4	30	4,511	-32.7	47	345	8.4
500	30	5,690	-16.0		276	35.0	30	5,210	-35.9	55	321	15.2	30	5,177	-36.6		333	10.1
450	30	6,476	-21.6		277	38.1	30	5,937	-40.9		318	16.3	30	5,899	-41.2		343	8.5
400	30	7,347	-28.0		277	42.5	30	6,728	-46.2		316	18.3	30	6,691	-46.4		335	10.5
350	30	8,288	-34.6		271	46.4	30	7,604	-51.7		311	19.0	30	7,567	-51.2		344	13.8
300	30	9,348	-42.1		270	55.2	30	8,593	-56.2		303	18.5	30	8,559	-55.1		336	13.0
250	30	10,560	-49.7		269	64.9	30	9,746	-57.3		304	15.9	30	9,721	-55.0		306	10.7
200	30	11,999	-56.0		268	70.3	30	11,167	-54.1		291	17.5	30	11,155	-52.8		299	14.0
175	30	12,841	-59.2		271	68.8	30	12,025	-53.4		282	19.8	30	12,017	-52.4		294	15.3
150	30	13,801	-61.8		272	61.8	30	13,017	-53.4		279	21.4	30	13,013	-52.3		286	16.1
125	29	14,924	-64.0		270	49.5	28	14,173	-53.9		282	22.5	29	14,187	-52.8		285	17.3
100	29	16,283	-65.6		270	40.4	28	15,604	-54.5		270	25.6	26	15,622	-53.4		281	21.2
80	29	17,635	-66.2		273	29.9	28	17,030	-55.2		266	31.9	25	17,056	-54.2		280	26.2
70	29	18,451	-65.5		278	21.2	28	17,885	-55.7		265	34.4	25	17,916	-54.7		276	28.7
60	29	19,386	-63.9		280	16.9	28	18,861	-56.3		264	36.9	25	18,896	-55.2		279	32.6
50	29	20,507	-62.1		277	14.2	27	20,033	-56.5		269	42.5	24	20,075	-55.3		280	34.2
40	29	21,893	-60.0		276	15.3	26	21,434	-57.3		266	49.9	24	21,495	-56.4		276	43.3
30	29	23,704	-56.2		275	17.1	24	23,240	-58.5		270	54.4	24	23,297	-58.2		284	45.6
25	28	24,869	-54.1		276	21.6	23	24,413	-58.8		270	64.7	15	24,516	-57.5		286	43.1
20	22	26,307	-51.3		275	29.7	22	25,851	-59.1		270	64.7	12	25,914	-59.3		278	45.8
15	15	28,204	-47.6				19	27,729	-59.4		271	76.5	9	27,728	-60.3			
10							15	30,239	-60.8		275	82.9						
7							9	32,593	-59.2									

Standard pressure surface (mb.)	BETHEL, ALASKA 1006 MB						BISMARCK, N. DAK. 955 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	39	-16.4	68	15	10.7	30	505	- 3.7	74	271	1.0
1000	30	33			33	16.3	30	140				
950	30	478	- 9.6	52	35	18.5	30	552			317	3.1
900	30	892	- 9.7	45	38	16.3	30	984	2.5	50	291	8.9
850	30	1,337	-10.7	39	35	14.0	30	1,445	1.1	46	295	13.4
800	30	1,802	-12.1	37	26	15.2	30	1,931	- .5	40	297	16.1
750	30	2,288	-14.0	31	23	13.0	30	2,441	- 3.5	41	297	19.2
700	30	2,815	-16.6	35	17	10.3	30	2,987	- 6.6	45	295	22.5
650	30	3,366	-19.6	36	12	10.9	30	3,556	- 9.5	42	294	25.8
600	30	3,960	-23.2		4	11.1	30	4,178	-13.3	43	290	29.3
550	30	4,589	-27.3	39	356	9.5	30	4,828	-17.7	45	289	32.4
500	30	5,273	-31.4	40	348	8.0	30	5,542	-22.2	45	290	39.4
450	30	6,009	-36.1		330	7.6	30	6,299	-27.7	42	292	41.6
400	30	6,821	-41.4		305	6.2	30	7,146	-33.7		294	47.6
350	30	7,716	-47.0		287	9.7	30	8,060	-40.6		292	54.0
300	30	8,725	-52.1		280	13.4	30	9,103	-47.8		286	55.0
250	30	9,898	-54.0		276	18.1	30	10,286	-54.7		281	57.5
200	30	11,335	-52.1		278	19.6	30	11,702	-57.7		279	54.0
175	30	12,201	-51.3		275	19.6	30	12,546	-57.0		282	52.1
150	30	13,203	-51.0		271	20.0	30	13,527	-56.7		281	44.7
125	30	14,389	-50.7		271	19.0	30	14,676	-57.6		279	33.2
100	30	15,843	-50.8		271	21.8	29	16,083	-57.6		276	28.7
80	30	17,296	-50.9		267	22.7	29	17,490	-58.5		282	20.2
70	30	18,166	-51.1		268	24.1	29	18,327	-58.3		287	18.6
60	30	19,166	-51.8		269	23.5	29	19,297	-58.8		289	15.5
50	30	20,347	-52.1		268	23.9	29	20,441	-58.6		298	14.2
40	30	21,791	-52.4		270	25.4	29	21,844	-58.2		306	9.9
30	28	23,664	-52.6		272	25.3	28	23,653	-58.0		312	10.9
25	27	24,846	-52.9		277	27.2	26	24,807	-57.4		314	10.9
20	22	26,285	-53.5		280	31.5	24	26,226	-56.3		317	13.0
15	13	28,215	-53.5				20	28,069	-54.8		310	14.4
10							12	30,685	-53.9			
7												

Standard pressure surface (mb.)	BOISE, IDAHO 918 MB						* BROWNSVILLE, TEXAS 1016 MB						BUFFALO, N. Y. 988 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	868	4.7	77	136	6.4	30	7	17.4	86	228	.4	30	218	5.2	84	247	7.8
1000	30	164					30	140	19.8	75	119	1.0	30	113				
950	30	584					30	581	17.9	68	145	5.8	30	533	5.1	75	258	15.0
900	30	1,029	5.6	64	145	7.4	30	1,043	15.6	60	181	5.2	30	974	2.8	74	271	18.3
850	30	1,495	4.1	56	179	7.0	30	1,527	13.8	50	206	7.6	30	1,435	.7	69	273	18.5
800	30	1,987	1.8	58	229	8.5	30	2,036	11.9	44	230	8.5	30	1,921	- 1.4	70	274	21.4
750	30	2,502	- 1.2	58	253	14.2	30	2,572	9.9	36	265	8.2	30	2,433	- 3.7	66	272	24.5
700	30	3,052	- 4.1	54	255	18.1	30	3,145	6.5	34	260	9.3	30	2,976	- 6.0	61	273	25.6
650	30	3,631	- 7.2	51	256	22.5	30	3,741	2.7	33	266	12.4	30	3,550	- 8.9	57	275	27.2
600	30	4,254	-10.6	47	256	27.0	30	4,392	- 1.1	35	265	15.2	30	4,170	-12.4	54	275	27.4
550	30	4,913	-15.0	47	257	30.9	30	5,072	- 5.1	30	260	17.7	30	4,825	-16.4	52	273	29.7
500	30	5,634	-19.3	49	261	33.8	30	5,824	-10.1	29	260	22.9	30	5,540	-21.2	48	274	30.3
450	30	6,403	-24.7	50	259	39.4	30	6,620	-15.4	32	259	27.6	30	6,305	-26.4	47	272	29.9
400	30	7,258	-30.8	49	262	42.9	30	7,510	-21.8	33	258	34.4	30	7,152	-32.4	46	273	33.2
350	30	8,192	-37.8	45	265	48.4	30	8,479	-28.6	32	261	44.1	30	8,080	-38.8		274	38.9
300	30	9,237	-45.9		266	51.7	30	9,564	-36.9	35	269	53.4	30	9,123	-45.7		272	43.1
250	30	10,426	-54.5		271	56.3	30	10,803	-45.7		267	65.9	30	10,319	-52.2		268	46.0
200	30	11,836	-59.5		275	50.9	30	12,256	-55.9		267	65.3	29	11,749	-55.4		266	47.0
175	30	12,672	-59.0		273	43.1	30	13,095	-61.2		263	65.9	29	12,595	-55.2		267	45.1
150	30	13,640	-58.8		274	41.2	30	14,041	-65.9		262	67.2	29	13,577	-56.0		270	42.3
125	30	14,784	-59.1		278	35.0	30	15,137	-69.4		265	50.7	29	14,733	-57.2		268	39.2
100	29	16,180	-59.7		278	28.7	30	16,456	-72.8		270	36.3	29	16,138	-58.6		268	34.4
80	28	17,575	-59.8		276	22.3	29	17,766	-71.9		270	16.3	28	17,539	-59.2		267	28.4
70	27	18,414	-59.6		275	18.1	28	18,561	-69.5		289	6.6	27	18,379	-59.4		267	23.7
60	27	19,372	-59.6		284	14.0	28	19,484	-66.0		267	3.5	27	19,340	-59.3		274	20.4
50	25	20,511	-58.9		299	10.5	28	20,601	-61.9		238	4.3	26	20,477	-59.0		276	15.3
40	19	21,915	-58.3		307	8.9	28	21,993	-58.6		266	7.8	26	21,879	-58.5		280	11.5
30	18	23,729	-56.8		316	8.5	27	23,825	-54.0		272	10.9	26	23,694	-57.1		283	9.9
25	14	24,884	-55.9				27	25,002	-51.4		267	13.8	25	24,850	-56.3		291	12.0
20	11	26,300	-56.1				27	26,462	-48.2		265	17.1	25	26,273	-54.7		292	14.6
15							26	28,373	-44.5		270	22.1	19	28,119	-52.8		287	15.9
10							25	31,111	-40.0		265	31.7	6	30,708	-51.6			
7							19	33,577	-34.9		258	38.7						
5							15	35,922	-32.4									

Standard pressure surface (mb.)	* BURWOOD, LA. 1018 MB						*CANTON IS., PACIFIC AREA 1010 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	3	18.3	76	73	6.0	30	4	27.7	74	67	3.9
1000	30	161	17.7	70	80	6.6	30	92	26.9	73	70	4.5
950	30	587	14.3	65	95	5.4	30	543	23.2	80	76	6.8
900	30	1,044	12.4	62	138	2.1	30	1,016	20.1	70	78	6.6
850	30	1,522	10.7	53	268	3.5	30	1,509	17.6	56	81	5.6
800	30	2,027	10.0	41	270	6.2	30	2,025	15.4	42	83	4.7
750	30	2,559	7.6	41	280	8.2	30	2,566	12.9	29	81	5.2
700	30	3,126	4.5	34	286	11.3	30	3,147	9.8	30	86	6.8
650	30	3,723	1.0	36	287	13.4	30	3,753	6.2	32	91	7.6
600	30	4,368	- 2.6	36	282	18.5	30	4,411	2.5	30	91	9.3
550	29	5,045	- 6.8	31	278	22.0	30	5,104	- 1.7	36	98	10.1
500	29	5,790	-11.4	28	273	24.5	30	5,861	- 5.8	27	109	9.3
450	29	6,584	-16.6	28	272	29.9	30	6,678	-10.6	23	102	9.7
400	29	7,465	-23.1	27	270	37.5	30	7,577	-16.6	27	106	9.3
350	29	8,428	-30.2	31	270	43.9	29	8,568	-23.4	22	105	8.0
300	29	9,505	-38.1	30	273	49.0	29	9,677	-31.6	23	111	9.7
250	28	10,735	-47.2		270	59.2	29	10,941	-41.6		127	11.7
200	28	12,180	-56.6		269	69.5	29	12,414	-53.9		139	13.8
175	28	13,018	-60.9		269	70.1	29	13,258	-60.8		137	13.8
150	28	13,968	-64.3		269	60.2	29	14,200	-68.2		128	8.9
125	27	15,074	-67.3		268	52.6	29	15,273	-76.0		113	10.9
100	27	16,409	-70.0		275	41.2	27	16,538	-82.6		101	15.2
80	24	17,732	-69.4		274	26.2	24	17,795	-77.0		97	11.7
70	23	18,539	-67.8		276	19.2	24	18,576	-69.6		128	1.7
60	22	19,461	-65.8		279	12.4	24	19,508	-64.2		250	7.6
50	22	20,577	-62.0		265	11.5	24	20,635	-60.2		267	14.4
40	22	21,968	-58.5		277	12.0	24	22,039	-56.4		273	13.6
30	22	23,792	-54.3		267	20.0	23	23,884	-52.7		268	12.8
25	20	24,967	-51.3		266	24.3	23	25,066	-51.0		264	11.3
20	20	26,426	-48.1		270	28.4	23	26,521	-49.1		261	15.3
15	20	28,336	-44.9		269	33.0	23	28,422	-46.0		275	13.4
10	20	31,075	-39.6		271	35.0	19	31,144	-42.4		278	7.0
7	19	33,543	-34.8		268	43.7	17	33,575	-40.8		254	7.0
5	10	35,838	-32.3				14	35,884	-38.2		10	.4

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1963

CAPE HATTERAS, N. C. — 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	4	11.5	82	309	3.1
1000	30	134	13.2	68	281	4.7
950	30	563	11.0	62	271	9.[illegible]
900	30	1,014	8.1	64	273	10.5
850	30	1,485	6.1	58	270	12.8
800	30	1,980	4.2	50	264	16.3
750	30	2,506	1.9	44	267	19.0
700	30	3,057	-.7	39	267	22.1
650	30	3,645	-3.6	33	267	26.8
600	30	4,276	-7.0		268	30.7
550	30	4,947	-11.0	32	267	32.8
500	30	5,677	-15.6		266	37.1
450	30	6,458	-21.0		265	39.8
400	30	7,324	-27.2		264	42.2
350	30	8,273	-33.8		264	47.6
300	30	9,337	-41.2		265	54.0
250	30	10,555	-48.9		265	62.0
200	30	11,998	-55.6		265	64.5
175	30	12,844	-58.2		267	62.0
150	30	13,809	-60.2		271	54.8
125	30	14,941	-61.9		271	47.8
100	30	16,314	-64.1		270	37.5
80	30	17,680	-63.8		273	29.5
70	30	18,506	-63.0		279	23.5
60	30	19,451	-61.5		274	18.8
50	30	20,584	-60.2		273	13.4
40	30	21,981	-58.2		281	13.4
30	30	23,803	-55.4		272	15.7
25	30	24,972	-53.0		272	19.8
20	30	26,419	-50.0		272	26.2
15	27	28,315	-46.2		268	36.7
10	22	31,033	-41.6		270	58.5
7	19	33,487	-35.6		270	75.[illegible]
5	9	35,906	-29.6			

CARIBOU, ME. — 989 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	191	.9	87	222	1.7
1000	29	104				
950	29	518	.6	82	238	3.7
900	29	950	-.6	73	230	6.4
850	29	1,405	-2.7	70	240	8.9
800	29	1,884	-4.7	66	244	11.8
750	29	2,391	-6.0	65	247	14.4
700	29	2,930	-8.4	65	249	17.1
650	29	3,501	-11.3	62	250	20.4
600	29	4,113	-14.4	57	252	22.5
550	29	4,767	-18.1	53	255	23.5
500	29	5,476	-22.4	51	261	29.3
450	29	6,238	-27.0	49	260	32.1
400	29	7,083	-33.0	48	263	35.2
350	29	8,000	-39.9		267	41.0
300	29	9,047	-46.7		270	40.4
250	29	10,238	-52.8		274	46.2
200	29	11,670	-54.7		269	47.4
175	29	12,524	-55.1		270	44.1
150	29	13,508	-55.1		265	35.5
125	28	14,573	-55.7		271	36.3
100	28	16,090	-57.1		270	28.7
80	28	17,500	-57.7		270	21.2
70	28	18,344	-58.0		272	17.1
60	28	19,313	-58.5		270	14.4
50	27	20,455	-59.0		280	15.3
40	26	21,854	-59.3		279	12.0
30	26	23,659	-58.6		288	14.6
25	26	24,905	-58.1		289	14.2
20	24	26,209	-56.7		290	19.4
15	23	28,028	-55.7		280	30.7
10	19	30,601	-52.6		275	55.8
7	17	32,935	-48.2		273	72.5
5	6	35,149	-42.3			

CHARLESTON, S. C. — 1017 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	13	9.0	89	308	3.1
1000	30	151	12.7	73	346	3.9
950	30	581	11.9	61	332	4.7
900	30	1,034	9.7	53	288	6.2
850	30	1,508	7.9	44	275	10.5
800	30	2,006	6.4	36	275	13.2
750	30	2,535	4.1	36	272	16.9
700	30	3,093	1.6	31	272	19.6
650	30	3,683	-1.5		271	22.7
600	30	4,321	-5.1		272	26.0
550	30	4,993	-9.4		270	28.9
500	30	5,730	-14.4		270	32.6
450	30	6,516	-20.1		270	33.2
400	30	7,386	-26.3		269	41.0
350	29	8,342	-32.5		271	49.1
300	29	9,412	-40.4		270	55.0
250	29	10,633	-48.6		270	63.9
200	29	12,077	-55.5		271	72.3
175	29	12,921	-58.9		275	67.4
150	29	13,882	-61.5		275	60.0
125	29	15,004	-64.3		276	52.1
100	29	16,362	-66.2		275	42.3
80	29	17,715	-66.1		276	32.1
70	29	18,532	-64.8		278	23.5
60	29	19,469	-63.2		283	17.3
50	29	20,594	-61.8		282	15.0
40	29	21,984	-58.8		275	15.5
30	28	23,807	-54.6		271	16.9
25	28	24,980	-52.1		275	24.5
20	28	26,435	-49.2		272	31.9
15	22	28,336	-45.9		273	42.3
10	5	31,064	-41.7			

*** COLD BAY, ALASKA — 1002 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	-1.9	83	348	5.4
1000	30	41			12	4.5
950	30	449	-2.5	70	355	9.7
900	30	877	-5.0	71	349	8.9
850	30	1,325	-7.2	71	329	8.4
800	30	1,795	-9.9	63	319	9.9
750	30	2,290	-12.4	53	321	11.1
700	30	2,815	-15.1	49	311	13.0
650	30	3,369	-17.8	49	308	13.4
600	30	3,968	-21.1	49	297	13.8
550	30	4,602	-24.9	50	289	13.8
500	30	5,292	-29.5	52	284	13.8
450	30	6,034	-34.5	50	286	13.4
400	30	6,851	-40.1	51	286	13.4
350	30	7,751	-45.7		261	13.6
300	30	[illegible],766	-50.1		259	18.1
250	30	9,951	-52.3		264	20.8
200	30	11,393	-51.6		267	23.3
175	30	12,260	-51.3		270	22.9
150	30	13,262	-51.1		257	22.5
125	30	14,447	-50.8		268	20.2
100	30	15,898	-51.1		269	19.8
80	29	17,350	-52.1		266	17.7
70	29	18,221	-52.2		266	16.7
60	29	19,210	-53.0		271	15.9
50	29	20,385	-53.0		269	16.1
40	29	21,824	-53.4		274	15.3
30	29	23,674	-53.4		272	13.6
25	29	24,847	-53.6		289	15.0
20	29	26,280	-54.1		287	11.5
15	28	28,118	-55.1		292	12.0
10	24	30,691	-56.2		287	15.5
7	21	33,025	-56.1		293	14.4
5	10	35,090	-56.0			

COLUMBIA, MO. — 989 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	238	4.8	76	215	4.3
1000	30	143				
950	30	561	7.2	60	259	8.4
900	30	1,008	6.2	50	270	12.6
850	30	1,475	4.2	46	279	15.5
800	30	1,968	2.3	43	283	16.5
750	30	2,481	-.4	42	279	17.9
700	30	3,036	-3.1	40	284	19.6
650	30	3,613	-6.3	34	285	21.4
600	30	4,242	-9.6		283	25.6
550	30	4,902	-13.8	33	284	29.9
500	30	5,626	-18.8	33	286	34.4
450	30	6,395	-24.1		282	36.1
400	30	7,252	-30.4		283	35.7
350	30	8,188	-37.1		286	40.8
300	30	9,236	-44.5		282	42.5
250	30	10,436	-51.9		283	45.3
200	30	11,864	-56.4		273	48.0
175	30	12,708	-57.9		270	49.1
150	29	13,676	-59.3		272	49.1
125	29	14,812	-61.0		276	42.0
100	29	16,193	-62.3		274	33.6
80	29	17,570	-62.5		273	28.7
70	29	18,395	-62.3		278	23.5
60	29	19,346	-61.8		278	16.9
50	29	20,476	-61.2		277	11.8
40	29	21,863	-60.1		290	10.3
30	27	23,666	-57.7		296	12.6
25	25	24,821	-55.9		285	12.4
20	20	26,248	-54.0		290	18.3
15	14	28,083	-51.6		281	27.2

DAYTON, OHIO — 981 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	297	4.7	75	247	3.7
1000	30	142				
950	30	563	5.7	69	261	12.4
900	30	1,003	4.1	60	279	17.7
850	30	1,467	2.3	61	283	18.3
800	30	1,955	.3	54	277	17.9
750	30	2,468	-2.0	49	273	18.8
700	30	3,016	-4.8	47	273	20.2
650	30	3,593	-7.4	47	275	23.3
600	30	4,216	-11.1	44	275	27.4
550	30	4,874	-15.3	43	274	29.1
500	30	5,593	-20.0	39	273	31.1
450	30	6,359	-25.3	37	273	34.0
400	30	7,212	-31.5		272	36.3
350	30	8,143	-38.2		273	40.4
300	30	9,187	-45.2		271	45.6
250	30	10,384	-52.1		268	50.9
200	30	11,812	-56.2		270	52.3
175	30	12,657	-56.9		273	52.1
150	30	13,630	-58.0		274	48.0
125	30	14,773	-59.7		272	43.5
100	30	16,160	-61.6		272	38.1
80	30	17,541	-62.1		275	26.4
70	30	18,371	-62.3		276	22.3
60	30	19,320	-61.5		279	18.5
50	30	20,452	-60.8		282	15.9
40	29	21,844	-59.7		287	13.0
30	29	23,651	-57.9		282	13.4
25	28	24,806	-56.2		283	14.2
20	26	26,236	-54.1		280	16.9
15	21	28,096	-51.0		276	26.2
10	12	30,777	-47.9			
7	5	33,128	-44.7			

DEL RIO, TEXAS — 981 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	27	314	12.3	72	8	2.1
1000	27	148				
950	27	581	14.2	60	107	4.9
900	27	1,036	12.5	56	163	4.5
850	27	1,515	11.2	53	218	4.5
800	27	2,020	9.9	48	231	5.8
750	27	2,553	6.9	48	264	7.8
700	27	3,119	3.9	43	279	11.1
650	27	3,713	.5	39	267	10.7
600	27	4,355	-3.6		263	15.2
550	27	5,032	-7.5		266	18.8
500	27	5,774	-12.3		269	21.0
450	27	6,566	-18.0		268	27.6
400	27	7,441	-24.6		264	33.2
350	27	8,401	-31.6		265	42.2
300	27	9,475	-39.3		266	52.4
250	27	10,700	-48.0		264	63.9
200	27	12,140	-56.8		268	66.4
175	27	12,979	-60.7		264	61.8
150	27	13,931	-63.9		264	60.2
125	27	15,040	-67.0		267	47.4
100	27	16,379	-69.7		266	35.5
80	27	17,706	-70.1		271	21.4
70	27	18,510	-68.6		275	16.5
60	27	19,433	-65.6		270	9.3
50	27	20,548	-63.1		265	7.0
40	26	21,933	-60.0		255	10.7
30	26	23,746	-56.1		273	15.7
25	26	24,912	-53.6		265	16.3
20	26	26,357	-50.5		267	24.5
15	26	28,244	-47.9		270	30.9
10	15	30,948	-43.2			

DENVER, COLO. — 838 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,611	-.8	71	191	4.1
1000	30	176				
950	30	596				
900	30	1,037				
850	30	1,496				
800	30	1,988	5.9	41	268	4.3
750	30	2,517	4.0	34	305	7.0
700	30	3,073	.6	32	301	10.5
650	30	3,660	-3.6	31	303	13.4
600	30	4,291	-7.7	32	298	16.9
550	30	4,956	-12.2	35	292	22.1
500	30	5,685	-17.0	30	289	25.3
450	30	6,459	-22.9		284	25.4
400	30	7,319	-29.5		282	26.2
350	30	8,258	-36.7		288	30.3
300	30	9,307	-45.1		288	35.4
250	30	10,500	-53.7		287	38.3
200	30	11,909	-59.9		282	42.7
175	30	12,743	-60.2		278	44.9
150	30	13,702	-61.2		273	42.3
125	30	14,834	-61.4		274	36.3
100	30	16,212	-62.9		277	29.3
80	30	17,588	-62.9		277	22.0
70	30	18,420	-62.1		282	19.4
60	30	19,365	-61.6		282	14.8
50	30	20,499	-60.5		289	11.7
40	30	21,891	-59.8		296	9.9
30	29	23,697	-57.8		313	9.1
25	29	24,852	-56.2		317	9.3
20	28	26,280	-54.4		300	9.7
15	22	28,129	-52.8		294	15.3
10	8	30,776	-50.2			

DODGE CITY, KANS. — 926 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	792	2.0	69	265	3.7
1000	30	160				
950	30	578				
900	30	1,021	7.3	49	260	7.2
850	30	1,493	8.0	38	266	11.3
800	30	1,991	6.3	35	278	11.8
750	30	2,515	3.7	34	286	13.6
700	30	3,075	.6	31	288	15.3
650	30	3,664	-3.3	33	289	17.3
600	30	4,295	-7.0	31	289	19.6
550	30	4,963	-11.2	28	287	20.8
500	30	5,694	-16.4		292	22.7
450	30	6,469	-22.3		287	26.0
400	30	7,333	-28.9		285	28.9
350	30	8,273	-36.3		287	30.7
300	30	9,324	-44.6		281	30.3
250	30	10,520	-52.8		282	37.1
200	30	11,941	-58.3		278	44.9
175	30	12,778	-59.5		277	47.8
150	30	13,740	-60.4		276	43.7
125	30	14,871	-62.3		273	38.7
100	30	16,243	-63.9		275	34.6
80	30	17,611	-63.8		278	27.4
70	30	18,437	-63.0		279	20.8
60	30	19,381	-62.5		277	17.7
50	30	20,510	-61.2		287	10.7
40	30	21,898	-60.2		275	8.2
30	30	23,704	-57.7		305	11.3
25	30	24,858	-56.2		298	11.3
20	30	26,282	-54.1		288	14.4
15	22	28,152	-51.3		277	22.0

EL PASO, TEXAS — 884 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,193	7.0	63	328	2.3
1000	30	165				
950	30	595				
900	30	1,050				
850	30	1,520	9.8	46	316	2.5
800	30	2,022	7.4	47	275	4.7
750	30	2,548	4.8	45	263	8.5
700	30	3,111	2.0	40	256	10.1
650	30	3,704	-1.2	35	263	11.8
600	30	4,340	-4.9	29	272	15.2
550	30	5,012	-9.0		274	17.3
500	30	5,752	-13.9		271	19.8
450	30	6,538	-19.9		269	25.3
400	30	7,410	-26.4		268	27.4
350	30	8,360	-33.8		267	33.2
300	30	9,424	-41.7		268	38.3
250	30	10,638	-49.8		265	46.2
200	30	12,072	-56.9		265	55.2
175	30	12,913	-59.4		265	52.3
150	30	13,870	-62.1		267	50.5
125	30	14,988	-65.3		266	42.7
100	30	16,337	-67.3		268	34.8
80	29	17,680	-66.8		267	23.5
70	28	18,496	-66.2		270	17.1
60	28	19,426	-64.7		270	13.0
50	28	20,545	-62.3		277	9.7
40	28	21,929	-60.5		270	6.8
30	27	23,738	-56.4		274	9.7
25	27	24,902	-53.8		280	13.6
20	27	26,345	-51.0		276	18.5
15	21	28,230	-47.8		269	22.7
10	7	30,919	-44.4			

ELY, NEV. — 810 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,908	-3.3	80	185	6.4
1000	30	206				
950	30	625				
900	30	1,065				
850	30	1,522				
800	30	2,004	.8	63	181	6.6
750	30	2,531	1.0	47	182	6.0
700	30	3,077	-1.3	42	245	7.6
650	30	3,664	-4.1	41	264	11.7
600	30	4,293	-7.7	38	270	14.4
550	30	4,960	-11.9	33	272	18.3
500	30	5,687	-16.5	31	267	21.6
450	30	6,465	-22.3	33	266	25.3
400	30	7,325	-28.9	36	265	25.1
350	30	8,266	-36.1		268	25.3
300	30	9,318	-44.4		268	29.3
250	30	10,515	-53.4		277	33.0
200	30	11,928	-59.3		273	38.7
175	30	12,762	-60.3		272	38.7
150	30	13,723	-61.0		272	37.1
125	30	14,853	-62.1		270	33.0
100	29	16,231	-62.7		272	27.4
80	29	17,605	-62.6		273	22.0
70	29	18,445	-62.5		275	18.3
60	29	19,382	-61.7		279	14.8
50	29	20,515	-60.4		289	9.9
40	27	21,910	-59.0		294	7.6
30	22	23,717	-57.6		301	6.6
25	18	24,864	-56.4		295	8.0
20	16	26,291	-54.4		283	7.4
15	10	28,162	-52.1			
10						
7						

*** FAIRBANKS, ALASKA — 997 MB**

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	135	-24.5	71	8	1.0
1000	30	111			35	1.9
950	30	495	-17.6	72	76	4.9
900	30	898	-15.9	67	79	7.6
850	30	1,328	-15.9	68	85	8.5
800	30	1,785	-16.6	62	72	6.8
750	30	2,269	-18.1	58	41	4.7
700	30	2,782	-20.4	54	11	4.9
650	30	3,324	-23.4	50	359	6.2
600	30	3,909	-27.0	49	3	8.5
550	30	4,530	-30.5	46	6	11.5
500	30	5,205	-34.5	41	4	13.2
450	30	5,931	-39.0	42	360	15.2
400	30	6,734	-44.3		358	17.3
350	30	7,619	-49.4		350	18.8
300	30	8,618	-53.8		342	21.2
250	30	9,787	-53.4		322	19.4
200	30	11,233	-51.0		298	18.1
175	30	12,103	-50.6		287	17.5
150	30	13,107	-50.6		280	18.8
125	30	14,294	-50.7		278	19.4
100	29	15,749	-51.2		278	22.3
80	29	17,198	-51.8		277	24.7
70	29	18,066	-52.1		276	26.2
60	29	19,059	-52.8		275	27.6
50	29	20,235	-53.4		279	28.6
40	26	21,720	-52.7		280	29.1
30	25	23,567	-54.0		283	35.4
25	24	24,752	-54.1		285	33.6
20	23	26,180	-55.3		289	38.7
15	18	28,061	-56.3		290	43.1
10	16	30,660	-56.8		298	52.6
7	9	32,888	-53.9			

FLINT, MICH. — 987 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	234	4.7	83	250	6.4
1000	30	127				
950	30	546	3.9	79	271	13.0
900	30	985	2.3	73	282	17.5
850	30	1,445	.4	66	285	17.3
800	30	1,930	-1.3	62	288	20.0
750	30	2,441	-3.3	52	283	22.7
700	30	2,987	-6.0	48	280	23.3
650	30	3,558	-9.3	48	279	25.4
600	30	4,178	-13.2	46	280	27.4
550	30	4,830	-17.1	43	279	30.9
500	30	5,544	-21.9	43	278	32.8
450	30	6,298	-27.3		276	35.0
400	30	7,149	-32.9		276	39.6
350	29	8,073	-39.3		273	42.0
300	29	9,112	-46.4		274	41.8
250	29	10,306	-52.0		275	43.9
200	29	11,738	-55.2		276	48.0
175	29	12,586	-55.7		277	45.5
150	29	13,569	-56.1		276	43.7
125	29	14,725	-57.1		275	36.5
100	29	16,131	-58.5		272	31.9
80	29	17,530	-59.3		274	23.9
70	29	18,373	-59.4		277	20.6
60	29	19,332	-59.1		279	18.3
50	29	20,475	-58.9		285	16.7
40	29	21,876	-58.6		288	13.4
30	29	23,689	-57.0		289	12.8
25	29	24,846	-55.9		290	13.2
20	28	26,266	-54.8		291	17.7
15	25	28,115	-52.9		284	23.7
10	12	30,729	-50.6			

FORT WORTH, TEXAS — 998 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	180	10.2	77	274	1.6
1000	30	163			342	3.7
950	30	595	11.7	59	175	3.7
900	30	1,044	10.8	54	227	6.6
850	30	1,520	9.1	54	252	8.4
800	30	2,020	7.2	49	272	8.2
750	30	2,552	4.3	49	275	9.5
700	30	3,108	1.9	45	273	11.8
650	30	3,700	-1.5	43	271	15.0
600	30	4,337	-5.3	42	269	17.9
550	30	5,008	-9.5	39	269	21.4
500	30	5,745	-14.4		268	23.9
450	30	6,530	-20.1		270	28.0
400	30	7,399	-26.8		271	31.9
350	30	8,348	-34.1		272	39.0
300	30	9,410	-42.1		269	46.6
250	30	10,621	-50.6		268	54.2
200	30	12,053	-57.4		267	59.2
175	29	12,895	-59.5		269	55.6
150	29	13,853	-62.1		270	50.9
125	29	14,971	-65.2		266	42.2
100	29	16,322	-67.4		266	36.1
80	29	17,667	-66.9		271	24.9
70	29	18,482	-66.7		274	17.5
60	28	19,415	-64.3		272	13.6
50	27	20,532	-62.7		265	10.3
40	27	21,913	-60.4		270	10.9
30	27	23,721	-56.5		275	13.2
25	26	24,884	-53.8		273	16.7
20	25	26,326	-50.9		273	21.2
15	25	28,209	-48.1		271	35.0
10	16	30,925	-42.6		272	46.2
7	7	33,373	-37.1			

GLASGOW, MONT. — 932 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	696	-3.6	70	103	1.2
1000	30	136				
950	30	545				
900	30	978	2.2	49	272	11.1
850	30	1,440	1.7	41	281	20.0
800	30	1,926	-.9	44	281	21.6
750	30	2,432	-4.1	48	279	22.0
700	30	2,979	-7.3	49	279	23.7
650	30	3,547	-10.5	46	280	27.0
600	30	4,165	-14.2	44	283	30.7
550	30	4,814	-18.3	44	283	34.8
500	30	5,525	-22.9	44	281	39.4
450	30	6,282	-28.1	41	279	44.9
400	30	7,124	-34.5	41	285	49.7
350	30	8,044	-41.3		285	55.8
300	30	9,074	-48.5		285	64.3
250	30	10,254	-55.3		285	65.7
200	30	11,667	-57.7		281	59.4
175	30	12,510	-57.0		281	53.6
150	30	13,486	-56.6		283	45.1
125	29	14,636	-56.9		279	36.5
100	29	16,047	-57.6		283	26.8
80	28	17,458	-57.9		281	21.4
70	28	18,295	-58.0		285	17.5
60	28	19,268	-58.6		290	15.7
50	28	20,415	-58.0		294	12.4
40	27	21,819	-57.7		303	11.7
30	26	23,631	-57.5		307	11.8
25	24	24,776	-57.5		316	15.0
20	23	26,188	-56.8		309	14.2
15	20	28,020	-56.0		316	15.5
10	6	30,664	-53.6			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1963

GRAND JUNCTION, COLO. 855 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	1,474	2.5	66	116	2.7
1000	30	179				
950	30	601				
900	30	1,051				
850	30	1,519			116	4.1
800	30	2,013	4.2	50	149	4.7
750	30	2,536	1.5	51	205	3.9
700	30	3,089	- 1.6	50	251	6.8
650	30	3,674	- 4.6	46	263	11.1
600	30	4,303	- 7.9	38	273	13.8
550	30	4,967	-12.2	40	279	18.5
500	30	5,696	-16.9	39	282	22.3
450	30	6,471	-22.7	39	281	23.9
400	30	7,332	-29.3	37	281	26.0
350	29	8,269	-36.7		279	33.4
300	29	9,317	-45.2		282	33.6
250	29	10,510	-53.7		286	38.1
200	29	11,925	-58.6		288	38.1
175	29	12,761	-60.1		286	35.0
150	29	13,720	-61.4		281	34.6
125	29	14,848	-62.4		279	34.4
100	29	16,220	-63.6		285	26.2
80	26	17,590	-63.4		276	23.3
70	26	18,421	-62.7		278	17.7
60	26	19,365	-61.9		276	12.8
50	25	20,495	-60.9		284	11.1
40	24	21,887	-59.7		300	7.4
30	23	23,693	-57.5		304	8.5
25	23	24,847	-56.2		309	10.3
20	21	26,272	-54.7		300	8.2
15	20	28,119	-53.1		287	13.6
10	19	30,745	-49.8		276	25.8
7	17	33,089	-48.3		275	44.5
5	15	35,329	-45.3			

GREAT FALLS, MONT. 885 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	1,123	1.6	49	229	11.8
1000	29	123				
950	29	543				
900	29	982				
850	29	1,447	2.6	40	235	23.3
800	29	1,934	- .4	47	250	24.3
750	29	2,446	- 2.9	51	264	26.8
700	29	2,989	- 6.1	51	269	28.9
650	29	3,562	- 9.2	48	274	29.1
600	29	4,185	-13.2	45	274	30.3
550	29	4,837	-17.8	50	271	34.4
500	28	5,552	-22.3	48	271	39.2
450	28	6,313	-27.4	46	273	43.1
400	28	7,158	-33.2	44	275	47.8
350	28	8,082	-40.4		275	53.0
300	28	9,116	-48.0		273	56.7
250	28	10,299	-54.9		275	55.8
200	28	11,713	-57.7		273	47.6
175	28	12,556	-57.6		273	44.9
150	28	13,530	-57.0		273	46.4
125	28	14,685	-56.8		277	36.1
100	27	16,101	-57.3		271	28.2
80	27	17,510	-57.7		279	22.5
70	27	18,362	-58.0		279	17.7
60	26	19,327	-58.2		277	15.2
50	26	20,475	-58.2		286	15.5
40	24	21,885	-57.8		292	10.5
30	24	23,706	-56.8		299	10.9
25	24	24,862	-56.6		309	10.3
20	23	26,283	-55.8		309	11.5
15	20	28,122	-55.6		304	11.5
10	16	30,732	-54.2		289	16.7
7	11	33,041	-52.4		281	24.7
5	7	35,219	-51.3			

GREEN BAY, WIS. 988 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	210	1.1	84	266	3.9
1000	29	115				
950	29	529	2.7	73	288	11.3
900	29	966	1.1	71	294	13.6
850	29	1,425	- .4	64	294	14.0
800	29	1,909	- 2.2	57	290	16.7
750	29	2,418	- 4.6	54	292	18.6
700	29	2,960	- 7.3	48	293	20.2
650	29	3,531	-10.5	43	295	24.3
600	29	4,146	-14.3	43	291	26.6
550	29	4,797	-18.4	39	293	29.9
500	29	5,506	-23.0		293	32.2
450	29	6,264	-28.2	39	291	35.7
400	29	7,104	-34.2		292	38.9
350	29	8,027	-40.5		290	42.0
300	29	9,063	-46.8		286	44.7
250	29	10,257	-52.1		286	47.4
200	29	11,690	-54.7		281	45.3
175	29	12,544	-55.1		279	44.7
150	29	13,526	-55.6		280	42.0
125	28	14,681	-56.6		279	35.4
100	28	16,093	-57.9		284	28.9
80	28	17,499	-58.1		281	21.0
70	28	18,339	-58.3		282	18.1
60	28	19,309	-58.3		287	14.8
50	27	20,453	-58.9		289	12.8
40	26	21,851	-58.7		298	11.8
30	26	23,663	-57.5		308	10.9
25	24	24,815	-56.4		315	10.5
20	20	26,235	-55.2		306	12.4
15	10	28,086	-53.1			

GREENSBORO, N. C. 986 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	273	6.2	77	270	3.1
1000	30	151				
950	30	577	8.9	57	284	8.5
900	30	1,024	6.9	57	279	10.3
850	30	1,493	5.0	56	285	13.4
800	30	1,987	3.5	46	285	15.5
750	30	2,508	1.1	46	283	16.5
700	30	3,062	- 1.8	43	283	19.6
650	30	3,646	- 4.7	39	280	22.5
600	30	4,275	- 8.3	38	277	25.4
550	30	4,941	-12.3	38	276	28.6
500	30	5,668	-17.1		274	31.7
450	30	6,443	-22.5		272	35.0
400	30	7,306	-28.8		270	40.8
350	30	8,248	-35.6		268	45.8
300	30	9,304	-42.7		269	50.5
250	30	10,514	-50.2		270	57.7
200	30	11,950	-56.1		269	62.7
175	30	12,794	-58.2		269	63.1
150	30	13,761	-60.0		272	56.9
125	30	14,891	-62.5		270	46.8
100	30	16,262	-63.9		273	38.9
80	30	17,628	-64.4		275	29.5
70	30	18,451	-64.0		276	22.3
60	30	19,393	-62.2		274	18.8
50	28	20,522	-61.0		279	14.0
40	27	21,913	-59.2		277	13.8
30	26	23,727	-56.5		275	16.7
25	25	24,991	-54.5		273	20.6
20	25	26,329	-52.0		277	25.6
15	22	28,208	-49.0		271	40.0
10	9	30,857	-45.4			

GUAM, MARIANA IS. 1000 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	111	25.1	91	83	5.1
1000	30	107			84	5.1
950	30	556	23.6	85	82	16.3
900	30	1,030	20.7	82	87	16.3
850	30	1,524	18.5	73	90	14.0
800	30	2,043	16.0	66	89	14.6
750	30	2,585	13.7	57	88	15.2
700	30	3,169	10.8	49	88	15.2
650	30	3,784	7.3	47	87	14.4
600	30	4,439	3.3	41	90	15.5
550	30	5,136	- 1.0	41	93	16.7
500	30	5,893	- 5.7	41	89	17.7
450	30	6,709	-10.8		90	17.9
400	30	7,609	-16.5		91	16.1
350	30	8,600	-23.2		90	12.6
300	30	9,710	-31.5		99	8.2
250	30	10,974	-41.5		93	7.8
200	30	12,448	-53.9		100	7.2
175	30	13,292	-60.9		103	6.4
150	30	14,232	-68.4		97	7.0
125	30	15,305	-75.9		90	8.9
100	30	16,573	-81.3		93	13.2
80	29	17,836	-77.7		92	12.0
70	29	18,608	-73.0		104	9.9
60	28	19,531	-66.3		125	4.9
50	28	20,648	-61.5		265	2.9
40	28	22,049	-56.6		275	8.9
30	28	23,889	-53.1		272	18.5
25	27	25,072	-51.1		272	19.6
20	26	26,528	-49.1		270	22.0
15	25	28,426	-46.3		275	27.0
10	16	31,149	-42.0		264	22.9

HILO, HAWAII 1015 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	11	20.4	87	250	5.4
1000	30	143	22.3	78	248	4.7
950	30	587	19.3	60	119	4.5
900	30	1,053	16.0	82	99	6.4
850	30	1,537	13.2	79	91	6.2
800	30	2,046	10.6	71	100	6.0
750	30	2,584	9.7	42	106	5.2
700	30	3,154	7.2		108	5.4
650	29	3,759	4.9		104	5.1
600	29	4,409	1.3		96	2.5
550	29	5,098	- 3.1		352	1.2
500	29	5,853	- 7.8		314	2.5
450	29	6,660	-13.4		292	5.8
400	29	7,551	-19.8		286	10.1
350	28	8,529	-26.7		284	17.9
300	28	9,623	-35.0		282	23.9
250	28	10,868	-45.0		289	34.2
200	28	12,323	-55.9		289	34.8
175	28	13,161	-61.7		288	32.1
150	28	14,103	-67.1		287	28.7
125	28	15,187	-72.4		288	22.0
100	28	16,485	-76.5		285	13.4
80	28	17,771	-75.1		291	4.7
70	27	18,553	-71.6		347	1.6
60	27	19,472	-67.4		74	1.7
50	27	20,582	-63.1		244	1.4
40	26	21,969	-58.8		275	5.1
30	26	23,795	-54.1		266	13.4
25	26	24,970	-51.7		274	16.1
20	25	26,424	-49.2		267	17.5
15	21	28,330	-46.4		266	21.2
10	11	31,084	-42.2		269	25.1
7	5	33,546	-38.5			
5						

HUNTINGTON, W. VA. 989 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	246	4.9	79	210	3.1
1000	30	155				
950	30	576	6.6	68	256	11.7
900	30	1,018	4.6	65	276	15.2
850	30	1,483	3.0	58	280	16.5
800	30	1,973	1.0	58	280	18.1
750	30	2,490	- 1.3	55	272	20.4
700	30	3,038	- 3.8	48	279	20.8
650	30	3,620	- 6.7	45	280	23.1
600	30	4,241	-10.1	40	277	25.3
550	30	4,904	-14.1	38	273	28.6
500	30	5,625	-18.7	38	273	32.8
450	30	6,399	-24.3		273	35.2
400	30	7,250	-30.6		271	38.1
350	30	8,186	-37.4		270	40.0
300	30	9,235	-44.2		271	45.3
250	30	10,438	-51.2		271	52.6
200	30	11,869	-56.6		270	59.1
175	30	12,714	-57.4		273	55.2
150	30	13,686	-58.8		273	49.9
125	30	14,824	-60.6		272	40.0
100	29	16,207	-62.6		274	35.9
80	29	17,582	-62.7		276	27.6
70	28	18,406	-62.2		277	22.5
60	28	19,357	-61.7		277	16.9
50	28	20,488	-60.8		283	14.4
40	27	21,878	-59.4		280	14.2
30	26	23,691	-56.6		278	14.0
25	26	24,850	-55.6		275	17.7
20	26	26,278	-53.1		277	22.5
15	21	28,134	-50.3		274	32.1
10	12	30,775	-47.6			

* INTERNAT. FALLS, MINN. 970 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	360	- 2.3	85	267	2.9
1000	29	114				
950	29	522	- 1.8	81	275	5.4
900	29	954	- 2.0	70	284	11.1
850	29	1,408	- 2.5	62	293	13.6
800	29	1,888	- 3.9	56	296	15.7
750	29	2,395	- 6.1	55	301	17.9
700	29	2,933	- 8.9	54	294	19.4
650	29	3,501	-12.0	55	292	20.6
600	29	4,112	-15.6	54	289	24.7
550	29	4,761	-19.5	53	288	29.3
500	29	5,466	-24.2	53	283	29.3
450	29	6,218	-29.4	50	281	34.4
400	29	7,057	-35.6	50	279	36.1
350	29	7,974	-42.1		280	41.8
300	29	9,002	-48.6		281	43.3
250	29	10,186	-53.9		283	47.6
200	29	11,612	-55.1		286	48.6
175	29	12,468	-54.8		287	42.7
150	28	13,451	-55.0		282	38.3
125	28	14,615	-55.5		283	30.5
100	27	16,033	-56.5		287	24.9
80	26	17,447	-57.0		291	18.8
70	26	18,295	-57.7		288	17.3
60	26	19,262	-58.7		292	15.3
50	26	20,407	-58.6		295	14.4
40	25	21,809	-58.7		297	12.6
30	23	23,614	-58.0		303	12.4
25	23	24,764	-57.6		302	13.4
20	22	26,179	-56.7		303	12.8
15	21	28,001	-56.4		307	15.7
10	18	30,599	-55.6		297	19.6
7	14	32,896	-53.3		285	28.7

JACKSON, MISS. 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	94	9.8	85	127	1.2
1000	30	158	11.2	74	146	2.1
950	30	583	11.6	64	184	3.5
900	30	1,039	10.1	58	262	3.7
850	30	1,514	8.5	46	296	5.4
800	30	2,014	7.1	42	275	8.5
750	30	2,540	4.8	42	287	13.0
700	30	3,104	2.1	41	284	15.5
650	30	3,693	- 1.1	40	281	19.8
600	30	4,334	- 4.9	37	280	22.9
550	30	5,006	- 8.9		275	25.6
500	30	5,747	-13.7		277	28.7
450	30	6,531	-19.3		272	30.9
400	30	7,407	-25.5		270	34.2
350	30	8,361	-32.5		268	42.3
300	30	9,428	-40.7		268	49.0
250	30	10,644	-49.5		267	57.5
200	30	12,075	-57.2		264	63.7
175	30	12,913	-60.0		262	59.8
150	30	13,869	-62.5		264	52.8
125	30	14,986	-65.3		266	44.7
100	30	16,337	-67.1		270	36.9
80	30	17,681	-67.2		268	22.9
70	30	18,494	-66.0		268	16.9
60	30	19,427	-63.8		273	14.6
50	29	20,547	-62.1		269	12.2
40	28	21,933	-59.9		272	12.2
30	28	23,747	-55.6		274	17.5
25	28	24,916	-53.0		267	22.7
20	27	26,366	-49.9		274	30.3
15	25	28,268	-46.3		275	42.9
10	8	30,983	-43.7			

JACKSONVILLE, FLA. 1019 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	11.7	92	328	3.1
1000	30	159	14.3	76	357	4.5
950	30	590	13.1	68	7	2.9
900	30	1,046	11.4	60	272	3.7
850	30	1,524	10.3	45	262	6.8
800	30	2,027	8.4	47	266	10.5
750	30	2,553	5.7	40	266	13.8
700	30	3,120	3.1		272	15.9
650	30	3,711	- .2		271	19.2
600	30	4,354	- 3.8		275	22.3
550	30	5,025	- 7.9		275	25.3
500	30	5,771	-12.6		276	31.7
450	30	6,560	-17.8		277	35.5
400	30	7,441	-24.0		274	40.6
350	30	8,402	-31.0		273	46.8
300	30	9,478	-39.2		269	56.3
250	29	10,702	-47.7		270	65.3
200	28	12,152	-56.3		275	73.6
175	27	12,994	-60.4		276	73.6
150	27	13,946	-63.7		278	63.5
125	27	15,057	-66.4		278	52.8
100	27	16,400	-68.4		276	40.8
80	25	17,736	-67.9		276	24.9
70	25	18,550	-66.0		283	19.2
60	25	19,481	-63.7		286	13.4
50	25	20,606	-61.1		284	11.8
40	25	22,001	-57.9		279	9.1
30	25	23,834	-53.0		270	17.9
25	24	25,019	-49.9		266	26.4
20	24	26,486	-47.1		268	31.9
15	22	28,394	-44.5		269	38.9
10	18	31,149	-38.7		271	47.8
7	15	33,647	-33.7		266	60.8
5	6	35,893	-30.5			

JOHNSTON IS., PACIFIC AREA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	3	25.9	83	98	10.3
1000	29	123	24.7	82	93	12.6
950	29	570	20.9	82	92	15.3
900	29	1,038	17.9	82	92	15.3
850	29	1,526	15.1	76	92	12.8
800	29	2,038	13.0	67	89	10.1
750	29	2,577	10.6	54	91	9.5
700	29	3,151	7.4	51	95	7.8
650	29	3,756	4.1	42	107	5.6
600	29	4,405	.5	38	118	3.1
550	29	5,093	- 3.4	37	75	2.7
500	29	5,847	- 7.9	33	21	.8
450	29	6,654	-13.0		251	1.7
400	29	7,547	-19.2		263	6.8
350	29	8,527	-26.1		245	17.1
300	29	9,624	-34.3		257	19.2
250	29	10,874	-43.8		250	30.7
200	29	12,335	-55.1		257	34.0
175	29	13,175	-61.4		266	32.4
150	29	14,115	-67.9		270	27.8
125	29	15,194	-74.1		264	21.6
100	29	16,478	-79.0		269	9.3
80	29	17,756	-76.0		350	1.7
70	29	18,534	-72.0		354	2.3
60	28	19,453	-66.9		36	1.9
50	28	20,565	-63.2		255	2.1
40	27	21,951	-59.5		262	10.7
30	26	23,774	-54.0		274	16.7
25	26	24,954	-50.8		271	18.6
20	26	26,416	-48.7		269	19.0
15	26	28,319	-46.1		259	25.8
10	21	31,038	-42.6		258	28.6
7	8	33,440	-40.5			

KING SALMON, ALASKA 1004 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	15	-14.6	74	348	10.1
1000	30	45			358	11.5
950	30	441	-10.1	58	18	18.1
900	30	857	- 9.6	50	19	16.5
850	30	1,298	- 9.2	43	8	13.6
800	30	1,767	-10.2	38	3	12.2
750	30	2,260	-12.6	39	357	11.1
700	30	2,786	-15.2	37	350	9.7
650	30	3,339	-18.4	33	348	9.1
600	30	3,936	-22.0	34	341	8.7
550	30	4,567	-25.9		337	8.7
500	30	5,255	-30.1	37	331	7.6
450	30	5,993	-35.2		310	8.9
400	30	6,810	-40.9		302	11.5
350	30	7,707	-46.1		294	14.4
300	30	8,720	-50.9		298	17.1
250	30	9,899	-52.9		292	21.6
200	30	11,342	-51.4		291	21.8
175	30	12,210	-50.7		290	20.4
150	29	13,223	-50.7		284	21.2
125	29	14,412	-50.1		282	19.6
100	29	15,868	-50.4		277	19.6
80	29	17,321	-51.1		279	19.8
70	29	18,191	-51.3		277	19.2
60	29	19,191	-51.5		277	19.4
50	29	20,372	-52.0		278	18.3
40	29	21,816	-52.6		276	19.0
30	29	23,672	-52.7		283	19.0
25	29	24,848	-53.1		288	17.1
20	26	26,312	-53.1		300	18.1
15	22	28,190	-53.7		306	20.0
10	11	30,902	-54.6			

‡ KOROR, CAROLINE IS. 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	30	28.5	81	62	4.5
1000	30	101	27.6	80	64	4.9
950	30	553	23.6	79	75	7.2
900	30	1,027	20.9	76	81	8.5
850	30	1,521	18.6	66	85	9.5
800	30	2,040	15.8	63	83	10.5
750	30	2,585	13.0	58	84	12.0
700	30	3,164	9.9	55	88	13.2
650	30	3,775	6.4	52	86	15.9
600	30	4,430	2.7	47	89	17.3
550	30	5,124	- 1.3	45	88	17.7
500	30	5,884	- 5.6	40	89	19.2
450	30	6,698	-10.4		92	19.0
400	30	7,602	-16.2		89	17.9
350	30	8,595	-22.7		93	18.3
300	30	9,707	-31.1		99	17.7
250	30	10,973	-41.4		90	20.6
200	30	12,447	-53.8		90	21.0
175	30	13,291	-61.1		90	21.0
150	29	14,232	-68.5		89	21.2
125	29	15,304	-76.3		84	18.3
100	29	16,572	-81.3		90	18.5
80	29	17,837	-75.6		87	13.8
70	29	18,621	-69.6		68	3.1
60	28	19,550	-64.2		280	11.5
50	27	20,682	-58.6		279	16.7
40	27	22,099	-54.7		278	23.7
30	26	23,954	-52.3		267	26.8
25	25	25,140	-50.3		271	24.1
20	24	26,604	-47.3		266	30.1
15	20	28,510	-45.5		257	33.2
10	13	31,259	-40.5			

KOTZEBUE, ALASKA 1016 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	-19.9	69	67	5.4
1000	30	125			75	5.8
950	30	513	-13.3	58	54	4.1
900	30	925	-13.7	54	1	4.5
850	30	1,359	-14.3	51	351	6.2
800	30	1,818	-15.2	46	347	7.0
750	30	2,301	-16.8	47	346	8.9
700	30	2,820	-19.7	44	349	8.2
650	30	3,359	-22.6	43	345	8.5
600	30	3,950	-26.3	46	323	7.8
550	30	4,567	-30.3	49	309	8.9
500	30	5,246	-34.6	46	295	8.5
450	30	5,970	-39.6		289	10.7
400	30	6,771	-44.8		285	15.0
350	30	7,653	-50.4		275	17.5
300	30	8,647	-55.6		274	19.0
250	30	9,804	-56.4		273	20.4
200	30	11,230	-53.8		272	19.8
175	30	12,089	-53.1		270	20.8
150	30	13,084	-52.6		268	21.8
125	30	14,261	-52.4		266	23.5
100	30	15,703	-52.7		264	24.7
80	30	17,142	-53.3		264	28.0
70	30	18,007	-53.5		263	29.7
60	30	18,991	-54.0		266	31.7
50	30	20,161	-54.2		265	34.6
40	30	21,589	-55.0		264	37.7
30	28	23,437	-55.8		266	42.3
25	27	24,618	-56.1		267	45.1
20	26	26,055	-56.7		269	48.8
15	21	27,959	-56.7		272	57.7
10	6	30,409	-56.2			

LAKE CHARLES, LA. 1018 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	29	5	12.4	85	71	3.1
1000	29	155	15.4	66	90	5.1
950	29	589	14.3	56	114	4.9
900	29	1,046	12.7	48	204	1.2
850	29	1,525	11.2	47	284	6.2
800	29	2,030	8.9	46	287	9.9
750	29	2,562	6.6	43	285	11.1
700	29	3,127	3.7	39	282	12.8
650	29	3,721	.8	30	276	15.3
600	29	4,364	- 3.2		275	13.4
550	29	5,040	- 7.2		275	20.2
500	29	5,786	-11.9		270	24.5
450	29	6,583	-17.8		269	30.3
400	29	7,456	-24.0		267	34.8
350	29	8,417	-31.0		270	45.3
300	29	9,492	-39.1		265	51.9
250	29	10,718	-48.1		266	60.8
200	29	12,158	-56.8		266	68.6
175	29	12,995	-60.6		269	68.2
150	28	13,947	-63.3		270	63.1
125	28	15,059	-66.4		268	49.5
100	28	16,401	-68.8		271	35.7
80	28	17,736	-68.7		271	23.5
70	28	18,550	-67.1		272	16.9
60	28	19,477	-64.0		264	12.0
50	28	20,600	-61.8		275	9.9
40	28	21,992	-58.7		271	10.5
30	28	23,818	-54.1		266	15.0
25	28	24,995	-51.5		269	21.4
20	28	26,456	-48.1		266	26.0
15	23	28,370	-44.1		263	35.2

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1963

Standard pressure surface (mb.)	LANDER, WYO. 828 MB				Wind		LAS VEGAS, NEV. 941 MB				Wind		* LIHUE, HAWAII 1013 MB				Wind		LITTLE ROCK, ARK. 1010 MB				Wind		MCGRATH, ALASKA 1000 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	1,696	- 1.9	69	276	1.7	30	660	8.9	55	265	3.7	30	36	22.8	78	47	5.4	30	79	7.8	81	346	1.6	29	103	-22.8	60	338	3.1
1000	30	176					30	155					30	153	22.9	77	63	7.2	30	161	9.1	69	354	2.1	29	100			10	4.3
950	30	594					30	581					30	590	19.1	83	77	10.7	30	590	9.6	59	264	2.7	29	485	-16.7	58	30	11.3
900	30	1,027					30	1,036	11.4	41	337	3.9	30	1,062	15.7	82	83	8.7	30	1,036	8.5	53	259	6.8	29	890	-13.8	59	47	15.3
850	30	1,489					30	1,511	8.8	42	359	5.1	30	1,545	12.9	75	84	8.4	30	1,508	7.3	46	276	9.7	29	1,326	-13.0	52	47	15.9
800	30	1,975	2.0	47	278	.4	30	2,001	5.9	44	338	3.5	30	2,054	11.3	57	89	7.0	30	2,005	5.0	43	304	12.0	29	1,788	-13.0	49	33	15.0
750	30	2,495	.4	44	276	3.7	30	2,532	3.4	42	284	2.3	30	2,593	9.5	29	91	6.8	30	2,529	2.5	42	297	13.8	29	2,276	-14.3	40	26	14.6
700	30	3,046	- 2.3	41	270	13.0	30	3,094	1.1	34	293	4.3	30	3,161	7.2	25	91	3.7	30	3,086	.2	40	296	18.1	29	2,800	-17.0	36	21	13.6
650	30	3,624	- 6.0	41	276	21.8	30	3,678	- 2.2	34	276	6.2	30	3,744	4.4	21	100	2.5	30	3,676	- 2.9	36	286	21.2	29	3,348	-20.3	35	21	12.6
600	30	4,254	- 9.6	38	283	28.8	30	4,319	- 5.9		269	10.3	30	4,416	1.0	20	76	1.4	30	4,308	- 6.4	35	286	24.5	29	3,943	-23.5		12	13.2
550	30	4,909	-13.6	37	280	32.2	30	4,986	-10.3		272	13.4	30	5,102	- 3.4	20	275	2.7	30	4,978	-10.4		287	28.6	29	4,567	-27.3		4	12.4
500	30	5,640	-18.5	39	277	34.6	30	5,722	-15.6		264	16.9	30	5,857	- 8.3	27	275	6.6	30	5,712	-15.2		278	30.1	29	5,255	-31.6		356	11.7
450	30	6,409	-24.5	42	272	37.9	30	6,490	-21.6		266	18.6	30	6,662	-13.8	24	270	9.3	30	6,491	-20.9		279	34.8	29	5,981	-36.3		347	13.4
400	30	7,267	-30.8	43	275	41.8	30	7,366	-28.2	39	263	20.2	30	7,553	-20.3	25	269	11.3	30	7,361	-27.2		278	37.5	29	6,802	-41.8		336	12.8
350	30	8,201	-37.8		277	42.5	30	8,310	-35.4		268	22.1	30	8,528	-27.3	34	266	16.7	30	8,309	-34.3		271	41.0	29	7,695	-47.8		327	12.2
300	30	9,245	-46.2		281	46.6	30	9,365	-43.4		275	26.0	30	9,620	-35.7	29	271	24.1	30	9,369	-42.5		274	47.6	29	8,699	-53.3		314	13.8
250	30	10,432	-54.9		278	49.3	30	10,571	-51.4		282	32.2	29	10,861	-45.3		281	28.4	30	10,578	-51.0		267	51.3	29	9,866	-54.5		300	17.3
200	30	11,840	-59.5		275	49.1	30	11,999	-57.1		278	37.3	29	12,314	-56.0		282	35.9	30	12,008	-57.0		267	58.7	29	11,304	-51.8		291	19.4
175	30	12,674	-59.9		276	47.4	30	12,840	-58.9		274	37.9	29	13,153	-61.3		282	35.0	30	12,849	-59.1		271	56.7	29	12,171	-50.9		287	20.0
150	30	13,638	-59.9		276	44.7	30	13,804	-60.6		270	35.9	29	14,097	-66.8		279	32.6	30	13,807	-62.2		273	52.3	29	13,174	-50.8		283	21.0
125	30	14,775	-60.3		274	38.9	30	14,934	-62.6		269	35.5	28	15,186	-71.6		280	27.0	30	14,929	-63.9		278	45.8	29	14,361	-50.5		279	19.0
100	30	16,166	-60.5		275	32.6	30	16,305	-64.3		270	31.9	28	16,488	-75.7		281	16.1	29	16,290	-64.8		280	35.2	29	15,818	-50.8		273	22.0
80	30	17,555	-60.7		273	27.0	29	17,668	-64.2		272	21.4	28	17,779	-74.6		294	6.6	28	17,647	-65.6		277	23.9	29	17,266	-51.4		270	23.5
70	30	18,389	-60.4		274	18.3	29	18,488	-63.4		271	15.5	28	18,561	-71.5		327	2.3	27	18,466	-64.8		276	18.3	29	18,131	-51.5		272	24.5
60	30	19,347	-59.8		279	12.8	28	19,434	-62.0		278	12.2	28	19,480	-67.3		10	1.8	26	19,401	-63.7		277	13.8	29	19,132	-51.9		272	24.7
50	30	20,488	-59.4		269	8.0	27	20,568	-60.7		286	7.6	28	20,589	-63.7		299	1.2	24	20,522	-62.1		277	11.1	29	20,313	-52.3		273	26.6
40	30	21,885	-58.9		320	5.2	27	21,960	-59.3		282	4.9	27	21,967	-59.9		270	4.5	24	21,909	-59.7		282	8.2	29	21,752	-53.0		272	27.0
30	27	23,701	-57.3		323	4.9	22	23,768	-56.7		316	5.1	27	23,781	-55.6		260	12.2	22	23,720	-56.5		280	10.9	27	23,594	-54.1		272	32.2
25	26	24,854	-56.3		350	5.2	22	24,929	-54.8		306	7.2	27	24,949	-53.2		270	15.2	22	24,881	-54.0		275	12.2	26	24,757	-54.9		273	34.6
20	22	26,276	-55.3		326	6.6	21	26,362	-52.6		297	8.4	27	26,394	-50.5		261	16.3	20	26,313	-52.3		275	16.1	25	26,204	-55.4		280	34.6
15	17	28,124	-53.7		318	10.1	13	28,208	-50.2				24	28,284	-46.2		258	25.4	9	28,171	-48.7				17	28,135	-54.9			
10													22	31,004	-42.3		261	33.4											
7													22	33,448	-38.0		260	36.7											
5													17	35,777	-33.1		251	32.4											
4													7	37,380	-29.0														

Standard pressure surface (mb.)	‡ MAJURO, MARSHALL IS. 1010 MB						MARCUS IS., N. PACIFIC 1015 MB						MEDFORD, OREG. 971 MB						* MIAMI, FLA. 1017 MB						* MIDLAND, TEXAS 917 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	30	7	28.8	77	78	7.2	30	9	24.9	77	82	7.2	30	401	4.1	84	170	1.6	29	4	19.4	79	41	1.7	30	874	6.4	74	300	1.9
1000	30	92	27.6	75	79	8.7	30	143	24.1	76	80	8.2	30	454	6.1	79			29	145	20.2	75	59	4.5	30	155				
950	30	597	23.8	74	81	11.5	30	591	20.5	79	79	9.1	30	578	6.0	81	218	1.4	29	584	17.5	74	86	4.9	30	582				
900	30	1,017	21.0	75	78	10.9	30	1,057	17.2	77	78	9.5	30	1,018	5.6	72	185	6.0	29	1,047	14.6	71	124	2.3	30	1,030	10.5	53	213	1.2
850	30	1,511	18.2	74	81	9.7	30	1,545	15.2	67	77	3.3	30	1,485	3.9	67	218	10.3	29	1,529	12.3	61	211	2.7	30	1,507	10.8	46	258	6.4
800	30	2,029	15.5	71	84	8.9	30	2,057	13.3	52	360	1.2	30	1,975	1.3	68	230	15.2	29	2,037	10.5	51	267	5.4	30	2,011	9.0	45	274	9.9
750	30	2,566	12.8	66	85	9.9	30	2,601	11.0	44	265	2.5	30	2,490	- 1.5	62	238	20.6	29	2,575	9.0	36	267	7.6	30	2,542	5.9	41	277	11.7
700	30	3,153	9.9	64	87	8.9	30	3,171	8.5	31	278	5.1	30	3,040	- 4.0	55	245	24.5	29	3,142	6.4	36	255	11.1	30	3,104	2.8	40	270	13.8
650	30	3,763	6.5	62	91	9.7	30	3,781	5.3	26	272	9.3	30	3,618	- 6.9	54	249	26.2	29	3,745	3.1	33	255	12.4	30	3,698	- .7	38	258	16.5
600	30	4,420	2.9	58	85	8.9	30	4,430	1.5	26	271	12.2	30	4,242	-10.6	51	254	29.5	29	4,301	- .3	32	258	16.7	30	4,335	- 4.5	35	258	18.8
550	30	5,117	- .8	53	80	10.7	30	5,123	- 2.7	25	272	17.1	30	4,904	-14.4	51	258	33.6	29	5,074	- 4.7	30	259	20.6	30	5,011	- 9.1	35	262	22.3
500	30	5,877	- 4.7	44	74	12.6	30	5,875	- 7.5	21	266	20.0	30	5,624	-19.2	54	261	34.8	29	5,826	- 9.4	29	265	23.1	30	5,745	-14.0	33	266	25.3
450	30	6,698	- 9.6	41	71	12.8	30	6,688	-12.9		268	23.1	30	6,395	-24.8	54	261	38.5	29	6,627	-15.1	32	265	27.2	30	6,491	-19.6	34	269	30.7
400	30	7,602	-15.0	36	79	10.3	30	7,575	-19.3		271	26.6	30	7,247	-30.6	49	258	43.9	29	7,513	-21.4	31	264	31.9	30	7,401	-25.8	33	269	37.7
350	30	8,598	-21.7	34	91	6.2	30	8,555	-26.6		274	32.2	30	8,184	-37.4		254	46.8	29	8,484	-28.2	33	265	39.6	30	8,354	-33.1	33	269	44.7
300	30	9,716	-29.7		100	5.2	30	9,650	-34.6		275	37.7	30	9,231	-45.1		240	49.3	29	9,573	-36.0	30	271	48.8	30	9,421	-41.2		268	53.4
250	30	10,989	-40.1		109	6.0	30	10,901	-43.8		278	44.3	30	10,426	-53.2		258	50.3	29	10,814	-45.6		272	54.6	30	10,636	-49.6		265	68.0
200	30	12,472	-52.7		117	8.2	30	12,366	-54.3		275	46.0	30	11,842	-58.7		259	42.3	28	12,266	-56.9		274	60.2	30	12,071	-57.0		272	70.7
175	30	13,320	-59.4		142	7.6	30	13,211	-60.1		277	44.1	30	12,679	-59.0		261	41.8	28	13,101	-62.4		274	56.5	30	12,911	-59.9		269	68.2
150	30	14,265	-67.7		134	6.4	30	14,159	-66.3		277	41.6	29	13,651	-59.1		261	38.3	28	14,042	-67.1		272	55.2	29	13,866	-62.1		270	68.9
125	30	15,341	-75.1		99	5.4	30	15,246	-72.6		275	33.2	29	14,792	-60.1		265	34.2	28	15,131	-70.8		272	43.7	29	14,987	-65.3		273	52.4
100	30	16,613	-80.5		84	10.7	30	16,542	-76.8		270	23.9	29	16,183	-60.0		268	30.7	28	16,443	-73.4		273	31.7	28	16,339	-67.7		274	42.0
80	29	17,885	-74.5		89	12.0	27	17,820	-75.4		266	10.7	29	17,574	-67.2		272	22.0	28	17,761	-72.3		273	18.1	28	17,679	-68.0		272	27.4
70	29	18,673	-68.6		100	9.7	27	18,610	-71.7		240	4.5	29	18,411	-60.3		270	18.3	28	18,553	-69.6		274	10.0	28	18,492	-67.0		273	18.8
60	29	19,611	-62.7		254	9.9	26	19,520	-67.5		180	2.7	29	19,369	-60.0		278	14.4	27	19,468	-66.3		286	7.8	26	19,417	-65.0		276	12.2
50	29	20,743	-59.4		259	21.4	26	20,629	-63.7		82	3.5	28	20,509	-59.6		282	9.5	27	20,584	-62.4		290	7.0	26	20,533	-63.1		278	8.5
40	29	22,154	-55.1		268	27.6	25	22,009	-59.8		55	4.7	27	21,907	-58.8		282	8.0	27	21,976	-58.4		279	9.1	26	21,913	-61.1		280	6.4
30	28	24,009	-52.1		267	33.4	25	23,828	-55.0		316	4.1	27	23,720	-57.1		290	7.2	27	23,809	-59.0		271	11.7	23	23,717	-57.5		274	10.0
25	23	25,197	-48.9		266	28.6	25	24,099	-52.7		312	6.4	26	24,877	-56.2		286	5.4	26	24,993	-60.2		263	14.6	23	24,877	-54.8		273	15.2
20	19	26,667	-47.0		258	26.8	24	26,449	-50.3		282	9.3	23	26,293	-56.0		288	7.0	26	26,440	-47.1		264	19.2	23	26,313	-52.2		274	21.6
15	14	28,576	-43.8		266	26.4	22	28,330	-48.1		288	12.6	23	28,126	-55.2		279	10.3	25	28,379	-44.2		267	21.2	21	28,199	-48.2		277	29.1
10	12	31,329	-40.2				20	31,029	-44.1		285	15.9	19	30,719	-52.9		271	17.3	23	31,127	-39.2		262	26.2	21	30,897	-44.0		271	46.6
7							19	33,462	-37.0		278	20.0	13	33,048	-50.1				16	33,599	-35.1		259	27.0	20	33,337	-39.0		270	65.9
5							17	35,891	-31.9				9	35,259	-49.0				6	35,953	-30.3				11	35,633	-35.3			

Standard pressure surface (mb.)	MONTGOMERY, ALA. 1012 MB				Wind		NANTUCKET, MASS. 1012 MB				Wind		NASHVILLE, TENN. 997 MB				Wind		N. Y. INT. AP., IDLEWILD 1014 MB				Wind		NOME, ALASKA 1014 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	29	61	8.1	86	16	1.4	30	14	8.4	82	300	1.9	30	177	6.6	83	256	.8	30	5	8.6	73	302	6.4	28	7	-15.5	66	9	4.5
1000	29	159	10.5	74	59	1.7	30	111			272	5.2	30	153			132	2.3	30	118			283	8.4	28	110			30	4.1
950	29	587	11.1	62	47	2.3	30	532	6.8	75	256	9.5	30	573	7.5	65	240	5.2	30	540	6.5	66	289	10.5	28	499	-11.8	55	31	6.8
900	29	1,038	9.4	56	271	1.9	30	978	4.5	71	253	14.0	30	1,028	6.0	59	264	8.0	30	993	4.3	64	282	12.4	28	917	-12.5	54	32	8.4
850	29	1,512	8.7	39	274	8.0	30	1,442	2.5	65	257	16.5	30	1,487	4.6	53	273	11.3	30	1,447	2.3	62	278	15.3	28	1,353	-13.0	54	23	11.5
800	29	2,012	6.9	37	278	10.3	30	1,931	.5	61	254	17.5	30	1,979	2.7	47	278	13.4	30	1,936	.6	57	278	15.5	28	1,814	-14.1	52	8	10.5
750	29	2,539	4.7		278	13.2	30	2,445	- 1.5	54	256	18.6	30	2,498	.6	43	277	15.0	30	2,455	- 1.6	54	270	18.3	28	2,299	-16.4	47	11	9.3
700	29	3,100	1.8	38	282	16.1	30	2,995	- 4.1	50	261	19.2	30	3,051	- 2.3	43	277	18.6	30	3,000	- 4.1	50	270	21.4	28	2,819	-18.7	41	353	8.0
650	29	3,691	- 1.0	38	281	19.4	30	3,571	- 7.5	48	254	22.1	30	3,632	- 5.2	37	279	22.3	30	3,579	- 7.2	48	272	24.1	28	3,365	-21.6	38	350	9.3
600	29	4,326	- 5.5		278	22.1	30	4,196	-11.0	48	257	27.4	30	4,261	- 8.5		281	25.1	30	4,201	-11.1	46	272	26.2	28	3,955	-25.3	37	330	8.7
550	29	5,000	- 9.3		275	27.4	30	4,857	-14.9	45	266	29.9	30	4,926	-12.4		279	26.8	30	4,862	-15.3		273	28.6	28	4,576	-29.4	38	334	12.4
500	29	5,734	-14.1		277	30.9	30	5,575	-19.6	43	267	34.2	30	5,652	-17.2		276	31.3	30	5,578	-19.8	43	268	30.7	28	5,256	-33.7		332	15.5
450	29	6,523	-19.3		281	36.7	30	6,343	-24.8	41	268	35.2	30	6,429	-22.6		273	32.4	30	6,349	-25.1	41	267	31.9	28	5,984	-38.2		322	15.0
400	29	7,392	-26.0		276	36.3	30	7,198	-30.9	44	268	39.4	30	7,289	-29.0		270	34.0	30	7,199	-30.9	41	263	37.9	28	6,791	-43.6		317	18.5
350	29	8,344	-33.3		273	46.4	30	8,132	-37.5		266	42.5	30	8,230	-36.0		269	36.5	30	8,133	-37.4		263	41.6	28	7,677	-49.3		320	17.7
300	29	9,411	-41.1		274	53.2	30	9,180	-44.7		268	47.8	30	9,284	-43.3		268	43.3	30	9,181	-44.8		267	45.5	28	8,675	-54.4		312	20.6
250	29	10,628	-49.9		272	62.5	30	10,381	-51.2		270	52.6	30	10,489	-50.9		264	50.9	30	10,383	-51.7		266	46.4	28	9,836	-56.0		298	17.5
200	29	12,068	-56.6		270	65.3	30	11,813	-56.0		269	50.5	29	11,924	-56.3		266	52.6	30	11,812	-56.1		267	51.7	28	11,262	-53.7		290	17.7
175	28	12,908	-59.7		272	65.5	30	12,660	-56.0		270	46.4	29	12,767	-58.5		269	53.6	30	12,660	-56.7		270	50.7	28	12,123	-52.5		277	17.5
150	28	13,866	-62.4		272	61.6	30	13,634	-58.2		268	45.1	29	13,733	-59.8		268	53.2	30	13,635	-57.7		269	44.9	28	13,120	-52.0		278	17.7
125	28	14,984	-65.8		272	47.0	30	14,710	-59.4		268	39.4	29	14,865	-62.2		268	41.8	30	14,781	-59.2		271	37.9	28	14,301	-51.9		278	20.2
100	28	16,335	-67.3		273	38.5	30	16,174	-60.1		268	30.5	29	16,237	-64.1		273	35.7	30	16,169	-60.9		272	30.7	28	15,747	-52.0		268	24.6
80	28	17,680	-67.3		275	27.6	30	17,564	-60.8		274	25.1	28	17,600	-64.3		272	29.5	29	17,556	-61.0		273	23.1	28	17,190	-52.6		267	27.6
70	28	18,493	-65.9		276	21.6	30	18,394	-60.9		271	19.4	28	18,425	-64.2		276	23.7	29	18,397	-61.0		271	18.6	28	18,054	-52.7		269	27.6
60	28	19,424	-64.1		278	15.9	29	19,352	-60.5		271	18.8	28	19,362	-63.0		278	15.2	29	19,344	-60.6		271	15.7	28	19,046	-53.3		268	29.3
50	28	20,545	-62.2		276	13.0	29	20,490	-59.6		269	13.8	28	20,486	-61.9		287	15.7	29	20,481	-59.9		272	14.8	27	20,215	-53.7		267	31.3
40	28	21,931	-59.3		280	12.6	29	21,887	-58.7		278	12.2	28	21,871	-60.0		278	17.1	29	21,877	-58.9		273	15.2	27	21,648	-54.3		268	32.1
30	26	23,750	-55.1		271	15.3	28	23,699	-57.4		276	12.4	26	23,680	-56.9		283	15.2	29	23,688	-57.5		278	13.8	26	23,470	-55.2		268	38.1
25	24	24,916	-52.6		270	20.8	28	24,853	-56.3		276	15.0	26	24,839	-55.2		283	16.5	27	24,947	-56.1		271	15.9	25	24,636	-55.8		268	41.4
20	22	26,364	-49.4		270	26.2	26	26,274	-54.1		276	18.1	26	26,270	-52.9		281	20.8	25	26,271	-54.4		274	17.9	23	26,071	-56.2		267	47.2
15	16	28,260	-45.3				25	28,132	-50.9		275	27.6	25	28,139	-49.9		275	29.5	19	28,124	-51.6		275	22.9	15	27,826	-58.8		266	49.7
10							24	30,794	-45.8		273	54.8	22	30,819	-44.4		276	36.3												
7							15	33,172	-42.6		270	77.7	17	33,248	-41.1		275	49.0												
5							7	35,472	-35.8				17	35,547	-37.6															

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb.)	NORFOLK, VA. 1016 MB						NORTH PLATTE, NEBR. 918 MB						* OAKLAND, CALIF. 1018 MB						OKLAHOMA CITY, OKLA. 972 MB						OLYMPIA, WASH. 1006 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	9	7.8	83	258	3.1	30	848	- 2.8	80	344	3.1	30	6	9.6	84	108	3.5	30	392	7.0	72	190	2.7	30	58	6.2	93	198	5.8
1000	30	139	10.8	70	263	4.3	30	158					30	151	11.5	71	129	2.9	30	155					30	108			198	6.4
950	30	563	9.4	65	284	7.4	30	572					30	575	10.9	63	208	2.7	30	581	9.7	57	198	5.6	30	526	5.4	80	197	13.8
900	30	1,013	7.1	64	277	12.6	30	1,002	2.1	68	321	6.4	30	1,029	9.1	58	232	4.9	30	1,028	9.4	50	230	9.3	30	970	3.4	77	212	18.8
850	30	1,482	5.1	57	274	13.8	30	1,467	5.0	43	315	8.9	30	1,502	7.3	54	244	9.3	30	1,501	8.0	44	257	11.1	30	1,432	1.0	77	223	21.6
800	30	1,976	2.9	54	274	15.3	30	1,961	4.0	34	304	11.8	30	2,000	5.2	48	247	10.1	30	2,000	6.1	41	270	12.8	30	1,918	- 1.4	72	229	23.3
750	30	2,493	.4	49	269	16.7	30	2,481	1.9	33	302	16.8	30	2,519	3.0	44	258	13.2	30	2,524	3.4	36	280	15.5	30	2,428	- 4.3	67	234	25.6
700	30	3,047	- 2.5	53	267	19.4	30	3,037	- 1.3	35	303	18.6	30	3,081	.1	37	267	16.7	30	3,083	.6	36	282	16.5	30	2,971	- 5.4	56	238	28.2
650	30	3,628	- 5.3	47	269	23.7	30	3,618	- 5.1	35	301	20.8	30	3,664	- 3.0	36	271	16.2	30	3,674	- 2.7	33	268	20.0	30	3,540	-10.7	51	241	31.9
600	30	4,257	- 8.8	44	270	28.6	30	4,248	- 9.1	34	299	24.1	30	4,302	- 6.6	31	274	21.8	30	4,305	- 6.5		276	21.2	30	4,157	-14.2	47	244	30.9
550	30	4,921	-12.7	40	268	32.4	30	4,908	-13.5	35	295	27.0	30	4,968	-10.8	32	268	24.5	30	4,975	-10.7		276	22.3	30	4,808	-17.8	43	248	32.1
500	30	5,648	-17.2		269	35.7	30	5,634	-18.2	34	295	29.1	30	5,703	-16.1	34	265	28.2	30	5,707	-15.6		272	25.4	30	5,521	-22.5	41	250	35.4
450	30	6,425	-22.5		267	37.3	30	6,403	-23.9	34	295	32.2	30	6,482	-21.5	36	266	33.0	30	6,485	-21.3		276	27.6	30	6,278	-27.9	44	254	38.7
400	30	7,285	-28.8		261	39.0	30	7,262	-30.4	36	295	35.2	30	7,349	-27.8	35	267	36.7	30	7,351	-28.1		278	32.2	30	7,124	-33.5	43	258	46.6
350	30	8,227	-35.4		262	42.9	30	8,196	-37.7		295	37.1	30	8,294	-35.3	38	268	36.3	30	8,294	-35.7		273	35.9	30	8,049	-39.8		262	52.4
300	30	9,284	-42.4		264	48.0	30	9,240	-44.0		293	39.4	30	9,350	-43.4		272	42.2	30	9,348	-43.7		273	43.9	30	9,086	-46.8		268	45.6
250	30	10,496	-49.7		265	53.8	30	10,430	-54.2		293	46.0	30	10,552	-52.5		274	39.4	30	10,553	-51.3		276	49.0	30	10,276	-53.1		266	46.0
200	30	11,993	-55.9		266	61.6	30	11,840	-58.8		287	47.8	30	11,970	-59.1		276	45.8	30	11,979	-57.7		280	56.3	30	11,701	-56.3		271	37.5
175	30	12,777	-57.6		270	61.8	30	12,676	-59.5		284	48.6	30	12,805	-60.6		276	39.4	30	12,818	-59.4		274	54.8	30	12,549	-56.3		267	39.6
150	30	13,746	-59.3		271	52.8	30	13,639	-59.9		284	43.9	30	13,764	-60.9		274	38.5	30	13,779	-61.3		276	51.7	30	13,530	-55.9		268	37.7
125	30	14,881	-61.5		270	45.8	30	14,773	-61.3		280	39.4	29	14,900	-62.4		266	37.1	30	14,904	-63.5		273	44.7	29	14,686	-56.6		272	33.4
100	30	16,260	-62.6		272	37.9	30	16,155	-62.1		277	30.5	29	16,275	-63.4		269	31.9	30	16,268	-65.1		271	36.3	29	16,103	-56.5		271	28.6
80	30	17,634	-63.4		270	28.2	30	17,537	-62.2		281	22.0	27	17,640	-63.4		269	23.3	30	17,627	-65.3		275	29.7	29	17,518	-56.0		269	20.2
70	30	18,463	-62.7		273	23.1	30	18,365	-61.7		281	19.2	27	18,469	-62.7		271	18.3	30	18,447	-65.0		277	22.5	29	18,368	-57.0		271	17.3
60	29	19,408	-61.5		274	16.7	30	19,316	-61.2		289	15.2	27	19,413	-62.1		271	13.8	29	19,382	-63.7		286	15.9	28	19,342	-56.9		277	16.5
50	29	20,543	-60.2		274	14.2	30	20,450	-60.3		288	11.8	27	20,543	-60.8		278	10.9	27	20,503	-67.2		274	11.1	28	20,496	-56.9		284	11.1
40	29	21,740	-58.6		274	12.6	29	21,844	-59.8		294	8.7	27	21,935	-59.7		287	8.5	27	21,896	-60.6		274	13.4	26	21,911	-56.9		288	8.5
30	29	23,759	-56.1		270	14.8	28	23,650	-58.1		305	9.1	25	23,743	-57.7		277	7.0	26	23,687	-57.9		285	11.8	22	23,737	-55.7		295	8.7
25	27	24,920	-54.5		277	18.3	27	24,805	-56.6		311	8.4	24	24,901	-56.0		281	7.0	26	24,842	-55.9		283	16.1	18	24,698	-55.9		295	6.4
20	24	26,357	-51.3		270	27.0	27	26,224	-55.1		302	11.7	24	26,325	-54.5		283	11.3	24	26,265	-53.4		279	20.4	15	26,311	-56.0		274	10.9
15	14	28,243	-48.7		269	36.9	26	28,068	-53.3		292	17.5	22	28,174	-52.7		270	17.5	21	28,128	-50.8		273	29.1	7	28,131	-55.9			
10							24	30,690	-51.2		282	32.6	16	30,831	-49.9		262	34.0	5	30,802	-44.3									
7							23	33,016	-48.5		282	46.4	11	33,181	-46.6															
5							19	35,252	-46.0				5	35,467	-43.0															

Standard pressure surface (mb.)	OMAHA, NEBR. 968 MB						PEORIA, ILL. 994 MB						PITTSBURGH, PA. 972 MB						‡ PONAPE, CAROLINE IS. 1005 MB						PORTLAND, ME. 1011 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	403	2.2	76	270	2.1	30	200	2.7	84	246	2.7	30	353	4.9	81	240	4.1	30	39	29.3	74	55	4.5	30	20	3.7	85	339	2.1
1000	30	141					30	148					30	138					30	87	28.5	74	64	4.9	30	111			319	3.9
950	30	559	4.6	65	280	5.8	30	566	5.8	64	356	10.5	30	554	5.3	74	245	11.5	30	534	24.2	77	77	8.0	30	531	3.5	72	275	3.5
900	30	990	5.2	52	296	11.7	30	1,010	4.4	59	276	14.8	30	999	3.2	72	272	17.9	30	1,014	21.1	78	80	10.1	30	966	1.8	74	264	8.7
850	30	1,465	3.8	48	297	12.8	30	1,474	2.5	52	282	14.8	30	1,461	1.5	65	278	18.5	30	1,508	18.3	74	76	11.3	30	1,426	.3	71	270	10.7
800	30	1,956	2.1	44	293	13.2	30	1,963	.6	47	283	15.3	30	1,948	- .6	64	279	18.6	30	2,027	15.7	68	78	10.1	30	1,911	- 1.3	65	272	14.0
750	30	2,473	- .4	39	291	15.5	30	2,478	- 1.5	43	284	17.9	30	2,462	- 2.8	59	280	19.6	30	2,568	13.1	60	79	10.5	30	2,426	- 3.6	65	272	13.1
700	30	3,024	- 2.0	35	291	18.5	30	3,026	- 4.4	43	285	20.6	29	3,010	- 5.4	54	278	22.3	30	3,152	11.3	53	84	11.8	30	2,967	- 6.1	64	267	21.4
650	30	3,600	- 6.2	32	295	20.8	30	3,602	- 7.7	44	285	21.8	29	3,588	- 8.3	48	276	24.3	30	3,759	7.0	47	81	13.2	30	3,542	- 9.2	61	276	24.5
600	30	4,231	- 9.9		297	23.9	30	4,225	-11.6	45	284	23.8	29	4,207	-11.7	43	277	27.8	30	4,420	3.2	48	79	17.3	30	4,160	-12.5	57	264	27.4
550	30	4,886	-14.1		298	28.9	30	4,884	-15.6	41	285	27.2	29	4,863	-15.9	45	277	31.7	30	5,113	- .5	46	80	17.9	30	4,816	-16.3	52	268	30.5
500	30	5,615	-18.9	35	294	34.2	30	5,600	-20.2	36	282	30.5	29	5,581	-20.6	46	277	32.1	30	5,878	- 4.9	35	82	18.8	30	5,532	-20.8	48	269	32.2
450	30	6,381	-24.5	37	299	35.2	30	6,365	-25.5		278	34.4	29	6,348	-26.0	43	276	33.0	30	6,695	- 9.7	32	83	20.4	30	6,297	-26.0	47	269	34.4
400	30	7,239	-31.0	36	297	37.7	30	7,216	-31.6		277	38.7	29	7,196	-32.1		274	37.9	30	7,601	-15.1		81	20.0	30	7,147	-32.0	45	265	36.9
350	30	8,172	-38.1		295	39.2	30	8,147	-38.4		278	38.9	29	8,127	-38.4		274	42.9	30	8,598	-21.9		82	18.1	30	8,077	-38.9		265	41.2
300	30	9,216	-46.1		291	41.4	30	9,191	-45.3		279	43.5	29	9,171	-45.2		270	41.2	30	9,714	-30.3		90	17.1	30	9,119	-45.7		268	43.1
250	30	10,407	-53.8		291	44.1	30	10,389	-52.1		279	48.2	29	10,370	-52.0		268	48.4	30	10,983	-40.6		96	16.9	30	10,318	-51.9		268	52.1
200	29	11,820	-57.1		284	50.5	30	11,818	-56.0		271	48.2	29	11,799	-56.0		271	50.9	30	12,462	-53.2		98	19.8	29	11,749	-55.6		272	49.3
175	29	12,665	-57.5		284	46.8	30	12,676	-56.8		271	49.3	29	12,637	-56.4		275	50.1	30	13,308	-60.4		100	19.0	29	12,599	-55.6		270	45.5
150	29	13,634	-59.0		280	42.3	30	13,639	-58.1		274	47.2	29	13,624	-57.6		273	44.5	30	14,251	-67.8		91	18.3	29	13,580	-56.4		269	40.2
125	29	14,776	-59.5		279	38.5	30	14,784	-59.2		277	40.2	29	14,771	-59.0		272	39.8	30	15,326	-75.5		88	16.9	29	14,733	-57.7		269	35.7
100	29	16,166	-61.4		280	33.2	30	16,175	-61.1		272	31.7	29	16,165	-60.4		273	32.4	30	16,600	-80.1		81	15.9	28	16,138	-58.2		268	29.7
80	29	17,548	-61.2		286	27.6	30	17,561	-61.2		278	28.4	29	17,550	-61.7		273	24.9	30	17,871	-75.2		90	15.2	28	17,543	-58.8		272	22.5
70	29	18,377	-61.0		282	18.5	30	18,394	-61.1		276	20.8	29	18,382	-60.9		274	22.9	30	18,656	-69.1		109	5.6	28	18,385	-58.8		270	17.1
60	29	19,336	-60.6		286	15.5	30	19,348	-60.8		278	16.1	29	19,338	-60.2		281	17.1	29	19,501	-63.4		257	10.9	28	19,348	-59.0		272	13.8
50	29	20,472	-60.6		293	13.6	30	20,483	-60.2		282	12.6	29	20,475	-60.1		278	13.4	28	20,721	-59.1		269	20.2	28	20,494	-58.8		278	12.8
40	28	21,860	-59.8		295	11.3	30	21,878	-59.2		292	11.8	29	21,870	-59.2		287	13.2	27	22,135	-55.2		273	27.6	28	21,895	-58.6		284	11.3
30	26	23,669	-57.8		305	12.2	30	23,690	-57.1		300	10.1	28	23,680	-57.1		282	11.3	25	23,980	-52.3		266	32.1	25	23,700	-57.6		287	12.2
25	26	24,821	-56.8		309	12.0	30	24,847	-55.5		295	12.4	27	24,836	-55.5		276	14.2	24	25,164	-49.6		261	29.7	22	24,849	-56.7		280	15.2
20	26	26,240	-55.3		302	15.0	29	26,275	-53.9		291	15.5	27	26,263	-54.2		284	14.7	21	26,632	-47.3		261	28.6	19	26,259	-55.1		278	15.5
15	22	28,078	-53.6		296	19.2	29	28,130	-51.4		291	22.9	26	28,119	-51.5		283	23.9	13	28,552	-45.3		264	24.3	6	28,135	-52.3			
10	8	30,707	-49.2				27	30,780	-48.2		275	36.5	24	30,767	-47.4		276	43.7	9	31,284	-41.0									
7							24	33,166	-44.2		271	60.8	23	33,138	-44.4		272	58.7												
5							17	35,422	-39.7				22	35,412	-40.1															

Standard pressure surface (mb.)	RAPID CITY, S. DAK. 904 MB						ST. CLOUD, MINN. 976 MB						ST. PAUL IS., ALASKA 1008 MB						SALEM, OREG. 1008 MB						SALT LAKE CITY, UTAH 875 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	966	.2	62	315	4.1	30	316	- .2	83	280	1.6	30	10	- 1.0	84	47	9.5	30	61	6.5	89	183	6.8	30	1,288	1.1	82	165	4.9
1000	30	146					30	120					30	72			66	10.3	30	128			188	7.4	30	190				
950	30	564					30	536	1.9	72	293	5.1	30	475	- 4.0	74	55	11.5	30	550	6.7	76	199	16.5	30	619				
900	30	1,002			311	5.6	30	968	1.7	59	301	12.4	30	904	- 6.2	70	64	8.0	30	994	4.9	73	211	19.6	30	1,063				
850	30	1,463	4.1	39	310	12.4	30	1,428	.6	53	303	13.8	30	1,349	- 8.6	67	50	7.4	30	1,458	2.4	71	222	22.7	30	1,523	4.2	66	169	7.8
800	30	1,956	2.1	38	309	15.0	30	1,914	- 1.3	43	290	16.7	30	1,818	-10.9	59	41	6.4	30	1,946	- .3	69	228	24.1	30	2,015	2.9	57	182	9.9
750	30	2,469	- .3	38	301	16.5	30	2,423	- 3.7	39	286	19.4	30	2,308	-13.4	52	32	5.6	30	2,459	- 2.9	64	232	26.2	30	2,538	.2	54	207	8.0
700	30	3,024	- 3.3	36	284	19.8	30	2,968	- 6.9	42	286	21.6	30	2,834	-16.0	56	6	5.2	30	3,005	- 6.0	58	237	28.7	30	3,086	- 2.5	49	255	8.5
650	30	3,598	- 6.9	37	287	23.7	30	3,540	- 9.9	44	288	25.3	30	3,382	-18.9	48	345	5.4	30	3,579	- 9.0	55	240	30.3	30	3,670	- 5.5	43	275	14.8
600	30	4,226	-10.7	37	289	30.5	30	4,158	-13.3	40	291	26.8	30	3,982	-22.1	46	327	8.5	30	4,198	-12.4	50	245	31.7	30	4,295	- 9.7	43	269	16.9
550	30	4,882	-15.2	38	288	30.1	30	4,809	-17.7	39	290	28.6	30	4,612	-25.8	46	319	9.3	30	4,854	-16.2	46	250	34.8	30	4,959	-13.0	43	271	21.2
500	30	5,602	-20.0	38	284	34.4	30	5,521	-22.6	38	287	31.5	30	5,302	-30.2	45	310	9.9	30	5,570	-20.6	49	255	39.4	30	5,684	-17.9	44	269	25.6
450	30	6,367	-25.7	37	284	38.9	30	6,278	-28.3	38	287	34.2	30	6,041	-35.2		303	11.8	30	6,337	-25.7	51	255	43.3	30	6,461	-23.3	43	271	28.9
400	30	7,216	-31.9	38	285	39.4	30	7,120	-34.6	44	284	39.0	30	6,857	-40.7		301	13.4	30	7,185	-31.9	53	256	46.6	30	7,317	-29.4	40	274	32.8
350	30	8,146	-38.9		286	44.5	30	8,061	-41.2		287	42.3	30	7,756	-46.2		298	14.8	30	8,115	-38.6	49	257	49.3	30	8,256	-36.7		277	35.7
300	30	9,185	-47.3		285	52.3	30	9,073	-47.8		285	47.4	30	8,767	-51.9		286	15.3	30	9,157	-46.1		256	50.5	30	9,305	-45.2		273	39.8
250	30	10,369	-55.2		285	57.1	30	10,260	-53.7		286	51.9	30	9,940	-54.0		276	20.2	30	10,349	-53.3		261	51.7	30	10,497	-54.1		278	40.4
200	29	11,778	-59.1		286	51.9	30	11,682	-56.5		284	46.6	30	11,375	-52.9		280	19.2	30	11,767	-57.6		260	46.4	30	11,907	-58.9		276	41.4
175	29	12,615	-59.2		282	46.2	30	12,531	-56.1		282	44.1	30	12,238	-52.0		264	20.4	29	12,611	-57.7		261	42.2	30	12,743	-60.2		277	42.3
150	29	13,582	-59.1		280	45.1	30	13,508	-56.8		281	41.6	30	13,238	-51.3		260	18.5	29	13,579	-57.0		261	40.0	30	13,704	-60.5		274	38.7
125	29	14,727	-59.6		280	38.9	30	14,662	-57.5		281	34.8	30	14,422	-51.0		260	18.8	28	14,731	-57.5		265	35.7	30	14,837	-61.2		275	35.7
100	29	16,116	-60.6		282	31.9	30	16,068	-58.9		280	26.6	30	15,873	-51.3		262	20.0	28	16,139	-58.0		266	27.2	30	16,220	-61.2		276	28.9
80	29	17,506	-60.2		281	24.5	30	17,467	-59.1		281	23.9	30	17,322	-51.6		266	21.2	27	17,543	-57.8		268	21.6	30	17,602	-62.1		273	22.0
70	28	18,345	-60.1		281	20.2	30	18,306	-59.2		280	19.4	30	18,192	-51.8		265	19.8	27	18,388	-57.7		269	18.5	30	18,437	-61.7		277	19.6
60	28	19,302	-60.0		284	14.4	30	19,269	-59.4		282	15.5	30	19,187	-52.0		265	19.8	27	19,358	-58.1		272	16.4	29	19,383	-61.1		284	14.2
50	27	20,444	-59.6		291	11.8	29	20,411	-59.3		296	12.8	30	20,367	-52.3		267	19.8	27	20,505	-58.1		280	10.5	28	20,521	-60.1		293	9.7
40	25	21,840	-59.4		307	9.9	29	21,807	-59.5		302	10.5	30	21,810	-52.7		272	20.0	27	21,911	-57.5		292	8.7	27	21,920	-59.0		307	8.0
30	25	23,649	-57.8		331	8.5	27	23,610	-58.7		316	12.0	29	23,677	-52.8		268	19.8	23	23,735	-56.2		304	7.4	27	23,730	-57.5		315	6.6
25	23	24,796	-57.4		336	8.0	27	24,757	-57.9		314	12.2	29	24,853	-53.0		271	20.6	22	24,896	-55.8		302	7.2	22	24,884	-56.1		315	7.0
20	20	26,211	-56.2		322	7.2	27	26,167	-56.6		316	14.0	28	26,296	-53.2		276	19.0	14	26,330	-54.8		322	8.4	20	26,305	-55.1		313	6.2
15	5	28,119	-51.3				19	28,040	-54.3		310	14.2	28	28,187	-53.4		283	13.6	6	28,127	-56.0				17	28,147	-53.7		291	12.8
10							6	30,664	-53.2				14	30,888	-53.1									11	30,767	-50.9			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1963

Standard pressure surface (mb)	SAN ANTONIO, TEXAS 989 MB						SAN DIEGO, CALIF. 1002 MB						SAN JUAN, P. R. 1014 MB						SANTA MONICA, CALIF. 1012 MB						SAULT STE. MARIE, MICH. 985 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	243	13.6	76	10	3.3	30	124	11.4	86	38	1.2	30	6	23.2	90	146	3.1	30	38	13.6	66	26	5.2	30	221	1.9	90	352	3.1
1000	30	152					30	137		68	1.9		30	125	24.4	85	120	6.8	30	137	15.4	58	30	4.7	30	99				
950	30	586	14.5	64	90	4.5	30	576	14.3	58	325	1.7	30	572	22.0	82	99	11.3	30	569	14.5	51	48	2.5	30	511	1.7	84	302	6.2
900	30	1,042	12.8	61	165	4.3	30	1,024	12.5	50	309	2.1	30	1,044	19.1	79	93	11.8	30	1,027	12.7	44	336	.6	30	949	- .1	79	295	10.5
850	30	1,521	10.7	62	200	5.6	30	1,504	10.8	41	294	3.9	30	1,534	16.2	77	90	11.7	30	1,505	10.2	44	313	2.9	30	1,405	- 1.7	69	293	13.4
800	30	2,025	8.8	55	232	6.2	30	2,006	8.4	37	286	5.4	30	2,049	13.7	68	88	9.7	30	2,007	7.6	40	311	4.7	30	1,887	- 3.3	55	294	16.3
750	30	2,555	6.3	49	258	7.2	30	2,530	5.8	36	283	7.6	30	2,584	11.0	61	83	8.0	30	2,533	5.5	40	306	6.8	30	2,395	- 5.3	49	290	18.1
700	30	3,120	3.6	42	271	10.9	30	3,100	3.2	31	284	11.5	30	3,164	8.0	51	79	5.2	30	3,098	2.4	37	293	10.3	30	2,935	- 8.2	46	291	21.0
650	30	3,714	.5	32	269	14.6	30	3,689	- .1		285	14.2	30	3,768	4.6	46	81	3.5	30	3,688	- .8	30	293	13.8	30	3,503	-11.6	44	289	23.9
600	30	4,357	- 3.6		268	16.5	30	4,334	- 4.0		285	15.2	30	4,421	1.0	40	92	1.6	30	4,329	- 4.7	28	281	15.5	30	4,116	-15.2	42	286	24.7
550	30	5,035	- 7.8		269	20.6	30	5,004	- 8.6		284	17.5	30	5,106	- 2.9	32	303	1.7	30	5,001	- 8.9		282	18.6	30	4,763	-19.4	42	285	27.6
500	30	5,776	-12.6		268	24.1	30	5,747	-14.1	27	286	19.8	30	5,864	- 7.6		289	3.9	30	5,740	-14.1		286	21.2	30	5,470	-24.2	42	283	30.3
450	30	6,564	-18.4		267	29.1	30	6,530	-20.0		287	22.7	30	6,670	-13.0		272	5.6	30	6,521	-20.1		290	24.1	30	6,225	-29.5	43	282	32.2
400	30	7,441	-25.1		267	39.4	30	7,401	-26.6		293	25.3	30	7,563	-19.0		280	7.8	30	7,394	-26.6		293	25.8	30	7,060	-35.5	42	279	35.4
350	30	8,398	-32.1		262	42.9	30	8,352	-33.5		295	29.3	29	8,541	-26.3		295	11.7	30	8,346	-34.0		294	28.6	30	7,977	-41.5		275	40.2
300	30	9,469	-39.7		264	50.9	30	9,417	-41.7		292	32.1	29	9,637	-34.7		295	13.4	30	9,407	-42.5		292	31.9	30	9,007	-47.7		273	43.3
250	30	10,693	-48.3		266	62.7	30	10,631	-50.0		288	35.2	29	10,883	-44.7		302	15.9	30	10,616	-51.2		291	35.9	30	10,197	-52.7		273	45.8
200	30	12,133	-57.1		266	66.4	30	12,064	-56.7		276	41.4	29	12,340	-55.6		299	26.0	30	12,045	-58.0		281	38.9	30	11,627	-54.8		274	44.7
175	30	12,970	-60.9		263	66.4	29	12,914	-58.7		271	43.5	29	13,181	-60.9		293	27.4	30	12,883	-59.7		274	40.6	30	12,481	-54.7		277	41.8
150	30	13,921	-63.9		262	59.8	29	13,878	-60.5		272	41.2	29	14,127	-66.6		288	26.4	30	13,844	-61.1		270	42.7	30	13,466	-54.8		276	38.9
125	30	15,029	-67.3		264	48.0	28	15,005	-63.8		270	38.9	29	15,215	-71.8		281	22.1	30	14,971	-63.5		272	38.5	30	14,629	-55.8		276	32.2
100	30	16,363	-70.6		269	38.1	28	16,367	-66.3		268	29.9	29	16,518	-75.5		281	15.0	30	16,334	-65.9		270	32.2	30	16,044	-57.3		275	25.8
80	30	17,687	-70.4		269	24.7	27	17,716	-66.2		270	20.6	29	17,812	-73.6		298	8.0	30	17,689	-65.6		274	24.5	29	17,465	-57.4		278	21.0
70	30	18,494	-68.4		268	17.3	27	18,539	-65.3		270	16.1	29	18,611	-70.2		321	4.5	30	18,507	-64.9		268	20.0	29	18,300	-57.9		278	17.1
60	29	19,414	-66.2		268	13.4	27	19,468	-63.4		279	10.9	29	19,524	-66.0		360	3.1	30	19,445	-63.3		270	15.2	29	19,268	-58.7		278	14.4
50	29	20,526	-63.5		268	10.5	26	20,595	-61.4		278	7.8	29	20,644	-60.7		360	1.9	29	20,573	-61.9		279	8.4	27	20,408	-58.5		288	12.4
40	29	21,907	-60.6		262	11.1	26	21,987	-59.2		286	6.2	29	22,049	-55.4		285	4.7	28	21,961	-59.9		286	8.4	26	21,812	-58.5		289	11.8
30	29	23,716	-55.9		265	15.3	24	23,801	-55.8		292	7.4	29	23,905	-50.1		270	3.9	28	23,772	-56.8		301	10.3	25	23,631	-57.3		294	10.7
25	25	24,882	-53.4		271	18.6	23	24,968	-53.8		289	9.1	27	25,099	-47.5		273	5.1	28	24,934	-54.6		293	10.7	25	24,785	-56.7		306	12.2
20	22	26,328	-50.4		268	26.6	20	26,411	-51.4		283	12.6	27	26,579	-45.2		258	5.6	27	26,369	-52.8		278	13.4	25	26,204	-55.4		305	15.0
15	10	28,198	-46.8				12	28,038	-48.2				27	28,508	-43.0		272	6.0	26	28,242	-50.1		280	21.2	25	28,047	-53.7		292	18.6
10													27	31,251	-40.9		256	6.4	6	30,831	-49.4				25	30,664	-51.6		285	28.6
7													24	33,700	-35.8		266	4.5							17	33,046	-49.3		281	34.6
5													15	36,082	-29.5										15	35,279	-45.1			

Standard pressure surface (mb)	SHEMYA, ALASKA 1004 MB						* SHREVEPORT, LA. 1010 MB						SPOKANE, WASH. 931 MB						SWAN ISLAND, W. I. 1012 MB						TAMPA, FLA. 1018 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	29	38	3.2	81	337	3.7	30	79	10.5	83	21	.6	30	722	1.9	86	164	4.7	30	10	26.0	80	53	6.8	30	8	14.9	85	52	4.9
1000	29	68			48	5.1	30	145	11.6	70	29	1.6	30	135					30	115	25.4	81	47	9.5	30	156	17.0	79	71	6.4
950	29	481	- .1	76	303	3.9	30	538	12.1	57	170	3.7	30	554					30	564	22.2	82	56	11.1	30	584	15.1	72	104	3.7
900	29	917	- 3.3	80	285	4.9	30	1,046	11.0	51	246	3.3	30	991	2.7	77	199	11.3	30	1,035	19.1	82	65	8.7	30	1,061	12.9	67	222	3.9
850	29	1,363	- 5.8	75	285	7.0	30	1,522	9.4	48	274	7.4	30	1,453	1.2	70	221	18.3	30	1,525	16.3	79	74	6.6	30	1,530	11.5	54	246	7.0
800	29	1,837	- 7.6	68	279	7.4	30	2,023	7.7	47	281	10.3	30	1,939	- 1.4	64	235	21.6	30	2,040	13.4	75	87	6.2	30	2,026	10.0	45	258	8.5
750	29	2,339	- 9.9	46	273	6.6	30	2,552	4.4	48	287	11.7	30	2,448	- 4.1	62	242	23.3	30	2,580	11.2	64	95	6.1	30	2,565	7.8	42	264	10.7
700	29	2,867	-12.8	42	275	8.5	30	3,111	1.0	40	278	14.4	30	2,993	- 7.2	59	244	25.6	30	3,157	8.7	57	111	4.3	30	3,138	4.8	40	265	11.8
650	29	3,427	-16.0	38	276	10.7	30	3,703	- .9	36	271	17.3	30	3,561	-10.6	55	248	26.2	30	3,762	5.6	57	92	2.5	30	3,735	1.9	31	265	13.8
600	29	4,028	-19.9	37	276	11.3	29	4,342	- 4.5	31	275	22.3	30	4,179	-14.3	53	253	29.7	30	4,417	1.9	51	76	1.6	30	4,381	- 1.8	30	266	19.2
550	29	4,666	-24.3	42	272	12.0	29	5,017	- 9.2	28	277	25.6	30	4,833	-18.2	51	256	34.8	30	5,109	- 2.1	41	304	1.6	30	5,053	- 6.0	30	270	22.1
500	29	5,357	-29.0	43	270	12.8	29	5,752	-14.1	29	271	27.8	30	5,541	-22.6	50	256	39.8	30	5,866	- 6.4	37	294	1.7	30	5,810	-10.8		270	26.4
450	29	6,098	-34.2		277	15.2	29	6,539	-19.4	32	265	32.4	30	6,300	-27.6	49	256	43.7	30	6,679	-11.3		290	2.9	30	6,604	-16.2		269	29.7
400	29	6,918	-40.7		277	18.1	29	7,410	-25.9	32	266	37.9	30	7,144	-33.5	47	258	49.0	30	7,578	-17.3		299	6.6	30	7,490	-22.3		270	36.9
350	29	7,818	-45.6		280	20.4	29	8,363	-32.9	31	267	46.6	30	8,068	-40.0		260	55.8	30	8,565	-24.4		296	9.7	30	8,457	-29.5		270	42.7
300	29	8,840	-50.7		271	24.9	29	9,429	-41.1		266	53.4	30	9,103	-47.5		266	59.6	30	9,670	-33.0		290	12.4	30	9,539	-37.5		270	51.3
250	29	10,008	-54.2		265	28.0	29	10,544	-49.8		266	65.5	30	10,287	-54.8		271	61.2	30	10,923	-43.4		277	13.6	30	10,771	-46.5		270	60.4
200	29	11,444	-52.1		262	29.1	29	12,077	-51.0		263	69.8	30	11,705	-56.6		267	49.9	30	12,383	-55.0		286	17.9	30	12,221	-56.2		272	66.4
175	29	12,339	-51.5		262	28.4	29	12,916	-59.9		264	63.9	30	12,551	-56.8		270	44.3	30	13,221	-62.4		287	21.4	30	13,059	-60.8		271	66.2
150	29	13,309	-51.4		254	27.4	29	13,872	-63.0		266	56.7	30	13,530	-56.0		268	39.2	30	14,156	-69.4		283	21.4	30	14,007	-65.0		270	59.6
125	29	14,492	-51.3		254	27.0	29	14,987	-65.1		267	50.1	30	14,688	-56.8		268	35.9	30	15,226	-75.9		286	18.1	30	15,108	-68.3		272	51.9
100	29	15,942	-51.4		251	25.3	29	16,338	-67.3		267	38.5	30	16,101	-56.8		266	31.9	29	16,502	-78.6		308	8.0	30	16,438	-70.5		272	36.1
80	28	17,391	-51.8		249	22.3	29	17,681	-67.6		269	25.4	29	17,512	-56.8		267	22.9	29	17,781	-75.7		331	1.6	30	17,762	-70.0		277	24.7
70	28	18,257	-52.0		251	23.1	29	18,498	-66.8		274	17.5	29	18,356	-57.1		270	19.6	29	18,570	-72.3		21	1.6	30	18,571	-67.7		276	16.9
60	28	19,253	-52.2		251	20.0	27	19,421	-64.7		273	14.0	29	19,334	-57.4		272	15.2	29	19,477	-68.1		7	1.7	29	19,495	-64.8		278	9.3
50	28	20,432	-52.4		248	18.3	26	20,538	-63.2		277	11.5	29	20,485	-57.4		279	12.2	29	20,587	-62.8		310	1.6	29	20,515	-61.8		281	10.1
40	27	21,880	-52.1		248	18.1	25	21,921	-60.3		279	12.6	27	21,897	-57.1		281	10.7	29	21,982	-57.0		279	5.6	26	22,009	-57.9		284	9.3
30	27	23,744	-51.9		256	17.3	22	23,725	-56.9		272	17.9	26	23,726	-55.6		302	8.0	28	23,829	-52.0		275	8.5	24	23,843	-52.4		270	13.8
25	26	24,919	-52.3		258	15.9	22	24,886	-54.6		270	20.4	25	24,889	-55.6		296	9.7	28	25,016	-49.4		273	10.3	24	25,031	-48.8		267	19.4
20	25	26,373	-52.6		255	10.1	22	26,323	-51.7		271	27.2	23	26,311	-55.4		286	10.3	23	26,483	-47.5		270	12.2	20	26,504	-46.0		272	23.9
15	18	28,252	-52.3		241	9.3	18	28,204	-47.8		274	33.8	5	28,202	-51.4				18	28,382	-44.7		252	8.4	9	28,408	-43.4			
10	7	31,051	-50.1				13	30,887	-42.5		272	47.6																		
7							13	33,327	-38.3		273	57.7																		
5							8	38,666	-34.9																					

Standard pressure surface (mb)	* TATOOSH IS., WASH 1007 MB						TOPEKA, KANS. 995 MB						# TRUK, CAROLINE IS. 1010 MB						TUCSON, ARIZ. 925 MB						* WAKE IS., PACIFIC AREA 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	30	31	8.7	79	185	4.9	30	269	4.1	79	241	3.3	30	2	28.9	77	13	2.3	30	789	10.5	63	140	7.0	30	5	26.6	74	68	8.4
1000	30	91			177	7.2	30	148					30	92	28.1	77	39	3.9	30	136					30	120	25.6	75	70	12.0
950	30	512	5.3	75	206	11.3	30	569	7.2	55	271	6.4	30	543	24.3	80	77	8.0	30	570					30	577	22.0	79	72	14.2
900	30	953	2.2	82	218	14.0	30	1,013	7.0	46	271	10.9	30	1,020	21.4	78	82	8.7	30	1,022	13.7	52	137	9.5	30	1,048	18.6	79	75	12.0
850	30	1,412	- .5	74	231	15.9	30	1,482	5.3	44	281	13.6	30	1,515	18.5	77	83	10.3	30	1,502	11.6	49	148	7.2	30	1,538	15.9	76	80	10.5
800	30	1,895	- 3.2	77	233	19.8	30	1,975	3.3	40	286	15.7	30	2,034	15.9	74	78	10.7	30	2,007	8.5	50	180	7.2	30	2,052	14.2	58	77	8.5
750	30	2,402	- 6.2	67	235	23.5	30	2,492	.7	36	285	15.9	30	2,579	13.3	69	83	10.5	30	2,535	6.2	42	211	7.4	30	2,591	12.0	42	74	8.7
700	30	2,941	- 9.1	56	239	24.1	30	3,048	- 1.6	38	286	20.2	30	3,161	10.5	56	80	13.0	30	3,101	3.6	33	241	8.7	30	3,171	9.5	37	70	7.4
650	30	3,511	-12.4	51	239	26.4	30	3,628	- 5.0		286	21.0	30	3,770	7.0	51	83	15.9	30	3,695	.1		255	11.1	30	3,776	6.4	32	67	5.8
600	30	4,119	-15.9	50	243	31.3	30	4,260	- 8.5		289	25.3	30	4,420	3.1	45	84	16.7	30	4,336	- 3.9		262	12.8	30	4,434	2.8	30	58	6.4
550	30	4,768	-20.1	45	246	33.8	30	4,921	-12.6		289	27.0	30	5,126	- .7	41	86	18.8	30	5,009	- 8.2		264	14.8	30	5,128	- 1.3	25	35	4.7
500	30	5,470	-24.5	47	247	38.1	30	5,652	-17.4		288	28.4	30	5,887	- 4.9	35	85	20.2	30	5,752	-13.4		264	16.9	30	5,886	- 6.3	26	19	5.6
450	30	6,224	-29.8	45	249	41.8	30	6,428	-23.2		290	30.3	30	6,703	-10.0	30	87	22.0	30	6,537	-19.6		261	20.0	30	6,697	-11.8	24	352	7.6
400	30	7,061	-35.6	43	250	47.4	30	7,285	-29.7		292	30.5	30	7,609	-15.5		87	19.8	30	7,410	-26.5		260	24.5	30	7,595	-17.8	23	337	10.1
350	30	7,978	-41.9		253	49.0	30	8,228	-37.0		289	34.4	30	8,606	-21.9		84	17.3	30	8,359	-34.1		260	28.4	30	8,579	-25.1	23	328	14.8
300	30	9,006	-48.5		249	57.1	30	9,271	-45.1		290	36.5	30	9,721	-30.7		93	17.9	30	9,419	-42.4		264	31.7	30	9,680	-33.4	23	320	18.3
250	30	10,190	-53.7		256	61.2	30	10,466	-53.1		286	40.6	30	10,991	-40.5		106	18.5	29	10,633	-49.9		264	37.9	30	10,934	-42.9		319	22.9
200	30	11,614	-56.6		253	53.0	30	11,887	-57.3		281	48.2	30	12,472	-53.0		102	19.8	29	12,068	-56.2		262	46.8	30	12,402	-54.0		309	25.4
175	29	12,454	-55.7		254	49.0	30	12,729	-58.4		281	46.4	30	13,319	-60.0		99	20.0	29	12,911	-58.9		266	45.8	30	13,247	-60.6		303	22.5
150	29	13,436	-55.1		254	44.1	30	13,695	-59.9		278	44.9	30	14,264	-67.4		95	20.0	29	13,873	-61.3		266	44.7	30	14,189	-67.8		295	22.7
125	29	14,600	-55.5		259	36.7	30	14,828	-61.3		277	41.4	29	15,344	-74.5		92	15.5	29	14,995	-64.7		267	39.6	29	15,268	-74.4		299	19.0
100	29	16,021	-56.1		262	29.3	30	16,208	-63.1		279	32.4	29	16,622	-79.6		89	15.0	29	16,348	-67.2		266	34.4	28	16,540	-79.0		307	9.5
80	28	17,438	-56.4		257	25.4	30	17,581	-62.8		276	26.0	29	17,895	-75.3		100	13.8	29	17,696	-66.7		265	26.2	28	17,820	-77.3		352	2.7
70	27	18,286	-56.4		258	22.0	30	18,406	-62.3		276	21.2	29	18,681	-68.8		121	4.9	29	18,508	-65.8		269	19.0	28	18,593	-73.6		59	3.9
60	26	19,264	-57.0		261	18.8	29	19,360	-62.1		280	15.3	29	19,615	-63.7		264	7.0	29	19,445	-64.0		270	13.6	28	19,505	-68.4		70	5.1
50	25	20,416	-56.9		276	13.2	29	20,490	-61.2		285	11.3	29	20,746	-58.6		274	16.1	29	20,568	-62.1		271	9.9	27	20,609	-64.6		99	2.5
40	25	21,827	-57.4		272	13.0	29	21,879	-59.9		287	9.7	29	22,160	-54.8		277	21.6	29	21,955	-59.9		282	7.2	24	21,986	-60.4		267	5.6
30	23	23,648	-56.8		276	9.7	27	23,685	-57.9		305	9.5	27	24,009	-51.8		274	29.7	27	23,770	-55.9		280	8.4	23	23,806	-54.4		292	10.5
25	23	24,806	-56.3		280	9.1	27	24,839	-56.1		294	10.5	27	25,196	-49.6		269	27.0	27	24,938	-53.2		276	11.8	23	24,982	-51.7		282	13.8
20	20	26,222	-55.9		283	8.5	23	26,276	-54.3		296	12.4	27	26,663	-47.4		265	26.8	26	26,388	-50.2		276	17.1	23	26,436	-49.3		262	19.0
15	20	28,048	-56.0		285	10.3	18	28,108	-51.9		287	19.0	26	28,578	-44.6		271	31.3	26	28,276	-47.9		271	26.4	22	28,335	-46.2		270	23.1
10	17	30,642	-54.9		301	12.8	7	30,765	-48.5				19	31,320	-40.4				23	30,978	-43.3		269	40.6	22	31,054	-42.3		263	24.9
7	12	32,925	-54.0		292	16.7													15	33,444	-38.1				18	33,499	-36.6		257	22.1
5																			5	35,845	-33.8				11	35,870	-30.4			
4																									6	37,500	-26.7			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

NOVEMBER 1963

Standard pressure surface (mb.)	WALLOPS IS., VA., NASA 1016 MB						WASHINGTON, D. C. 1006 MB						WINNEMUCCA, NEV. 871 MB						WINSLOW, ARIZ. 854 MB						YAKUTAT, ALASKA 999 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	18	3	9.3	80	277	1.6	29	84	4.3	82	287	3.9	30	1,310	.3	76	162	2.5	30	1,492	2.[illegible]	81	189	2.3	30	12	- 2.2	75	90	6.4
1000	18	134	11.2	64	252	4.1	29	131			260	4.7	30	181					30	199					30	2			84	7.8
950	18	561	9.3	64	266	9.3	29	556	7.0	65	282	11.7	30	600					30	616					30	408	- 2.4	61	94	14.2
900	18	1,008	7.1	63	269	13.6	29	997	4.7	64	293	15.2	30	1,043					30	1,059					30	839	- 4.9	61	98	13.0
850	18	1,477	5.0	62	262	15.0	29	1,462	3.0	60	294	15.7	30	1,505	4.3	58	188	4.1	30	1,526			208	1.0	30	1,286	- 7.6	62	111	10.9
800	18	1,970	2.8	58	263	16.5	29	1,952	1.4	56	293	17.1	30	1,998	3.3	50	206	8.9	30	2,022	5.5	54	239	2.7	30	1,756	-10.6	62	126	10.1
750	18	2,487	.8	51	264	16.7	29	2,470	- 1.0	52	283	19.0	30	2,517	.8	48	235	11.8	30	2,549	3.4	49	232	6.6	30	2,250	-13.8	62	138	11.1
700	18	3,043	- 2.2	49	270	16.7	29	3,017	- 3.8	46	280	21.0	30	3,071	- 2.3	48	243	15.3	30	3,105	1.4	49	237	7.0	29	2,768	-17.4	59	151	10.1
650	18	3,628	- 5.9	48	275	16.5	29	3,601	- 7.0	45	273	21.4	30	3,655	- 5.3	42	248	19.6	30	3,697	- 1.9	35	250	8.4	29	3,315	-21.3	58	165	8.5
600	18	4,251	- 9.3	45	278	19.8	29	4,219	-10.7	42	277	23.9	30	4,281	- 9.2	44	253	22.7	30	4,331	- 5.6		259	9.7	29	3,906	-25.1	55	183	7.4
550	18	4,919	-13.0	39	278	21.4	29	4,882	-14.5		278	28.0	30	4,943	-13.3	44	255	25.1	30	5,007	- 9.8		271	12.0	29	4,527	-29.2	52	207	8.4
500	18	5,641	-17.4	35	270	24.9	29	5,600	-18.7		273	33.2	30	5,669	-17.7	42	262	29.3	30	5,737	-15.0		272	16.3	29	5,208	-33.6	47	224	9.5
450	18	6,417	-23.0	36	273	28.4	29	6,373	-24.0		274	36.5	30	6,442	-23.0	40	260	30.1	30	6,520	-21.0		275	19.2	29	5,936	-38.2		245	9.9
400	18	7,275	-29.2	36	276	35.0	29	7,227	-30.1	39	275	38.9	30	7,302	-29.4	41	259	32.8	30	7,384	-27.9		270	21.4	29	6,745	-42.5		258	12.8
350	18	8,215	-36.4		277	38.1	29	8,163	-37.1		269	42.3	30	8,241	-36.5	40	264	35.4	30	8,328	-35.4		268	25.3	29	7,637	-47.1		266	16.3
300	18	9,266	-43.3		271	48.6	29	9,212	-44.2		269	45.6	30	9,291	-44.8		269	38.7	30	9,382	-43.7		267	29.5	29	8,648	-50.6		268	21.6
250	18	10,476	-50.3		276	52.1	29	10,416	-50.9		264	55.0	30	10,486	-53.9		279	38.7	30	10,583	-52.0		270	34.0	29	9,837	-50.1		273	21.2
200	18	11,913	-55.6		275	60.4	29	11,848	-56.4		269	56.3	30	11,897	-59.6		280	36.9	30	12,004	-57.9		271	40.6	29	11,299	-48.7		282	22.7
175	18	12,760	-57.0		278	59.6	29	12,695	-56.9		266	55.2	30	12,731	-59.5		277	37.1	30	12,845	-59.5		271	39.2	29	12,176	-49.2		275	20.4
150	18	13,733	-58.8		280	55.2	29	13,668	-58.2		268	49.3	30	13,695	-60.0		276	35.0	30	13,805	-61.4		269	39.6	29	13,185	-49.7		269	[illegible].6
125	18	14,871	-60.8		277	43.9	29	14,810	-60.2		267	42.7	29	14,828	-61.0		274	33.4	30	14,928	-63.9		271	36.7	29	14,376	-50.0		264	[illegible].7
100	18	16,254	-62.9		280	39.0	28	16,191	-62.0		272	36.7	29	16,212	-61.4		275	27.2	30	16,289	-65.5		270	29.5	29	15,835	-50.1		271	22.1
90	18	17,627	-63.1		277	30.7	28	17,568	-62.4		271	26.8	29	17,597	-61.1		270	18.8	30	17,544	-65.7		272	20.4	29	17,289	-51.1		271	21.8
80	18	18,447	-62.8		282	23.9	28	18,405	-62.2		271	21.6	29	18,432	-61.2		274	15.7	30	18,463	-65.0		270	18.1	29	18,155	-52.1		269	22.1
70	18	19,401	-61.5		282	17.9	28	19,346	-61.4		276	16.7	29	19,384	-60.6		279	12.0	29	19,[illegible]01	-63.7		272	15.0	29	19,151	-52.5		[illegible]0	22.3
60	18	20,534	-60.4		280	14.6	27	20,478	-60.3		274	15.5	29	20,521	-59.7		285	7.8	29	20,525	-62.2		272	11.7	29	[illegible]0	-52.1		[illegible]7	21.4
50	18	21,927	-59.0		281	14.4	27	21,872	-59.1		280	12.8	27	21,919	-58.2		291	4.7	29	21,909	-60.8		285	8.7	29	21,764	-53.5		[illegible]8	21.7
40	18	23,743	-56.8		272	15.7	26	23,658	-57.3		272	15.3	25	23,736	-56.4		328	3.9	27	23,715	-57.2		298	9.5	29	23,609	-54.6		[illegible]6	[illegible].0
30	16	24,991	-55.4		278	19.6	26	24,836	-55.4		273	17.1	23	24,899	-55.5		366	6.0	26	24,876	-55.0		288	11.7	29	24,775	-54.8		288	[illegible].1
25	16	26,333	-52.8		279	22.9	22	26,264	-53.7		270	21.4	18	26,337	-54.3		394	5.8	19	26,305	-53.0		279	17.5	28	26,208	-55.3		295	25.3
20	15	27,707	-49.6		274	34.2	19	27,626	-50.4		268	31.5	12	27,701	-52.2				5	27,704	-48.8				21	28,064	-56.2		300	[illegible].[illegible]
15	14	28,891	-44.1		273	45.6	8	28,786	-49.0																16	30,623	-58.4		298	[illegible].7
10	5	30,274	-43.3																						9	32,956	-56.6			
7																														

Standard pressure surface (mb.)	‡ YAP, CAROLINE IS. 1009 MB						YUCCA FLAT, NEV. 883 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed
SURFACE	30	17	28.4	81	58	5.8	30	1,196	1.2	68	344	1.9
1000	30	96	27.4	81	64	6.8	30	182				
950	30	541	23.4	80	75	11.1	30	601				
900	30	1,020	20.6	76	81	13.6	30	1,043				
850	30	1,516	18.0	74	78	14.2	30	1,510	7.6	45	16	3.9
800	30	2,032	15.4	68	79	13.4	30	2,008	5.4	42	88	2.9
750	30	2,575	12.6	59	80	15.2	30	2,530	3.1	41	154	1.9
700	30	3,155	9.6	52	82	16.1	30	3,090	1.0	36	244	3.5
650	30	3,764	6.2	48	81	15.7	30	3,676	- 2.2	33	269	8.0
600	30	4,420	2.4	46	83	18.1	30	4,316	- 6.1		268	12.8
550	30	5,107	- 1.8	44	79	18.6	30	4,982	-10.7		270	15.3
500	30	5,872	- 5.8	40	80	17.9	30	5,715	-15.8		275	16.1
450	30	6,689	-10.7	36	85	19.0	30	6,492	-21.6		271	20.6
400	29	7,588	-16.4		85	17.9	30	7,358	-28.1		269	22.7
350	29	8,579	-23.2		83	16.5	30	8,302	-35.3		269	25.6
300	29	9,689	-31.5		84	16.9	30	9,357	-43.5		284	28.2
250	29	10,952	-41.6		83	17.3	30	10,546	-52.1		288	32.8
200	29	12,425	-54.0		86	18.3	30	11,982	-58.1		280	37.1
175	29	13,269	-61.1		88	18.1	30	12,820	-59.4		278	38.1
150	29	14,208	-68.5		87	15.5	30	13,782	-60.8		276	37.1
125	29	15,279	-76.2		81	13.2	30	14,912	-62.6		272	33.8
100	29	16,546	-81.7		83	13.4	30	16,283	-63.8		276	29.9
80	29	17,810	-76.7		88	11.5	29	17,653	-63.8		279	20.0
70	29	18,589	-70.9		90	4.1	29	18,478	-62.9		271	17.5
60	29	19,515	-64.5		307	3.7	29	19,424	-62.2		274	14.0
50	29	20,643	-59.5		278	10.7	28	20,552	-60.8		275	11.3
40	28	22,053	-55.7		274	13.0	27	21,994	-59.1		286	8.0
30	26	23,898	-52.1		256	18.3	23	23,759	-56.9		297	6.6
25	26	25,086	-49.9		256	21.2	21	24,919	-55.5		319	8.5
20	25	26,552	-46.8		254	23.7	17	26,348	-53.5		309	8.4
15	22	28,467	-44.4		254	28.2	10	28,205	-51.1			
10	9	31,242	-39.8									

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface and 10 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

‡ Observations for these stations are scheduled at 0000 G.C.T.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. NOVEMBER 1963

OMAHA, NEBR.

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Nov.									
1----	----	----	----	----	HS1.38	HS1.36	HS1.19	----	----
6----	HS1.01	HS1.09	HS1.23	HS1.36	----	----	----	----	----
8----	----	----	----	----	HS1.15	HM1.11	----	----	----
10----	M .76	HS .86	HS1.16	HS1.34	HS1.34	HM1.31	----	----	----
11----	----	----	----	HS1.37	HS1.37	HS1.36	----	HS1.05	----
12----	HS1.00	HS1.05	----	----	----	----	----	----	----
18----	HS1.00	HS1.11	HS1.23	----	HS1.37	----	HS1.21	----	----
23----	----	----	----	----	HS1.35	----	HS1.17	HS1.01	HS0.92
26----	----	----	----	----	HM1.32	----	----	----	----
27----	HS1.04	HS1.13	HS1.24	----	HS1.34	----	HS1.15	HS1.02	----
28----	----	----	----	----	HI1.32	----	----	----	----
30----	HS1.01	HS1.10	HS1.24	----	HS1.34	HS1.24	----	----	----
Averages	0.97	1.06	1.22	1.36	1.33	1.28	1.18	1.03	0.92

BLUE HILL OBS., MASS.

	Air mass: 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Nov.									
3----	----	----	----	----	----	1.21	1.00	0.94	0.86
4----	0.77	0.87	1.05	1.25	1.27	1.21	----	----	----
13----	.67	.79	.93	----	1.12	----	----	----	----
15----	.86	.98	1.11	----	1.28	----	1.12	.99	.87
24----	----	----	----	----	1.32	----	1.17	1.06	.94
25----	.90	1.07	1.18	----	1.33	----	1.21	1.07	.98
Averages	0.80	0.93	1.07	1.25	1.26	1.21	1.13	1.02	0.91

ALBUQUERQUE, N. MEX.

	Air mass: 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Nov.									
1----	----	----	----	----	----	----	----	0.89	0.99
2----	----	----	----	1.17	1.27	----	----	----	----
4----	----	----	----	1.18	----	----	1.09	.94	----
5----	0.85	0.98	1.10	1.25	1.32	1.25	1.11	.96	.87
6----	.93	1.03	1.14	1.28	1.37	1.31	1.15	1.01	.92
9----	.91	.99	1.12	1.22	1.25	1.26	1.13	1.01	.93
10----	.96	1.06	1.17	1.31	1.37	----	----	----	----
11----	----	----	----	----	----	----	1.11	.99	.83
12----	.89	1.00	1.12	1.24	H 1.24	1.22	1.12	1.01	----
13----	.84	.96	1.06	----	----	----	----	----	----
14----	.84	.94	1.08	1.23	1.31	1.25	1.09	.95	.84
15----	.89	----	----	----	----	----	1.14	----	----
17----	.87	.95	1.05	1.17	1.21	1.17	1.05	.91	.83
19----	D(.83)	D(.93)	D(1.03)	D(1.17)	1.27	1.26	1.12	.97	.86
20----	.90	1.01	1.15	----	1.34	1.32	----	----	----
22----	----	----	(1.13)	(1.26)	(1.30)	(1.27)	1.11	1.01	.91
23----	----	----	----	----	----	1.30	1.16	1.03	.94
24----	.93	1.03	1.15	1.29	1.31	1.26	----	----	----
25----	----	----	----	----	(1.22)	1.27	(1.03)	(.98)	----
26----	.94	1.05	1.18	1.31	1.34	1.32	1.13	.99	.87
27----	.94	1.07	1.17	1.32	1.35	1.27	1.14	.97	.88
28----	(.92)	----	(1.15)	(1.28)	(1.12)	(1.23)	(1.11)	(.96)	(.84)
29----	.97	1.07	1.19	(1.21)	1.33	1.31	(.95)	(.62)	----
30----	.97	1.07	1.18	1.31	1.37	----	----	----	----
Averages	0.91	1.02	1.13	1.25	1.31	1.27	1.12	0.97	0.89

GUAM, M. I.

	Air mass: 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observation due to cloudiness								

MAUNA LOA OBS., HAWAII

Date	Sun's zenith distance: A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass: 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Nov.									
1----	1.10	1.20	1.30	1.42	----	----	----	----	----
2----	1.09	1.20	1.30	1.44	1.53	----	----	----	----
3----	1.09	1.19	1.32	1.44	1.54	----	----	----	----
4----	1.11	1.20	1.32	----	1.55	----	----	1.16	1.07
5----	1.08	1.17	1.27	1.40	1.54	1.41	1.28	1.19	1.09
6----	1.14	1.24	----	----	1.60	1.46	1.33	1.24	1.15
7----	1.06	1.17	1.28	1.42	----	----	1.27	1.16	1.06
8----	1.06	1.16	1.28	1.42	----	----	----	----	----
10----	HS1.10	HS1.20	HS1.31	HS1.44	HS1.60	HS1.49	HS1.36	HS1.25	HS1.15
11----	HS1.17	HS1.26	HS1.35	HS1.48	HS1.56	----	----	----	----
12----	HS1.13	HS1.21	HS1.32	HS1.46	HS1.55	----	----	----	----
13----	1.21	1.28	1.38	1.50	1.59	1.43	1.29	1.16	1.09
14----	1.20	1.29	1.38	1.52	1.60	1.46	1.32	1.22	1.13
15----	1.21	1.31	1.40	1.52	1.58	----	----	----	----
16----	1.20	1.29	1.40	1.51	HS1.54	----	----	----	----
17----	HS1.17	HS1.27	HS1.36	HS1.48	----	----	----	----	----
19----	1.21	1.30	1.40	1.52	HS1.60	----	----	----	----
20----	1.26	1.34	1.42	1.53	1.63	----	1.38	1.29	1.19
21----	1.26	1.34	1.43	1.54	1.59	1.45	1.32	1.22	1.13
22----	1.23	1.32	1.41	1.52	1.60	----	----	----	----
23----	1.18	1.28	1.39	1.50	1.60	----	----	----	----
25----	----	----	----	1.50	1.59	1.48	1.37	1.28	1.20
26----	1.23	1.32	1.41	1.52	1.61	1.46	1.34	1.26	1.17
27----	1.22	1.31	----	----	----	----	----	----	----
29----	1.22	1.30	1.39	1.52	1.57	----	----	----	----
30----	1.18	1.26	1.35	1.46	1.56	1.45	1.32	1.21	1.12
Averages	1.16	1.26	1.36	1.48	1.58	1.45	1.33	1.22	1.13

MADISON, WIS.

	Air mass: 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Nov.									
1-----	S 0.94	S 1.03	S 1.12	1.28	----	----	----	----	----
7-30--	No observations - instrument malfunction								

TUCSON, ARIZ.

	Air mass: 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Nov.									
1-----	Recorder out of order								
3-----	----	----	----	----	----	----	0.65	----	----
4-----	0.82	----	----	----	----	----	1.08	----	----
5-----	----	----	----	1.29	----	----	1.20	1.00	0.89
6-----	----	1.01	----	----	----	----	1.17	1.04	.95
8-----	----	----	----	----	----	----	----	.95	.87
9-----	.91	1.01	1.13	----	----	1.31	1.12	.98	.85
10-11-	Pyrheliometer out of order								
14----	.88	.97	----	1.27	----	----	----	.96	.87
17----	----	.95	1.14	----	----	----	----	----	----
18----	----	----	----	----	----	----	----	.97	.86
19----	.88	----	----	----	----	1.32	1.14	----	.86
22----	----	1.11	----	----	----	----	----	----	.85
23----	----	----	----	1.37	----	1.35	1.18	1.05	.96
24-25-	Pyrheliometer out of order								
26----	----	----	----	----	----	----	----	.94	.86
27----	.93	1.02	1.14	----	----	.94	----	----	----
Averages	0.88	1.01	1.13	1.31	----	1.23	1.07	0.98	0.88

* Values corresponding to true solar noon
S Slight haze - indeterminable
M Moderate haze - indeterminable
( ) Clouds present

D Dust
H Haze
HS Slight haze
HM Moderate haze
HI Intense haze

Langley is the unit used to denote one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63 of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

NOVEMBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	344	348	194	303	401	403	271	361	386	387	296	397	332	372	355	209	390	276	363	360	152	334	---	350	293	359	360	348	347	344		332
ANNETTE ALASKA	28	43	91	71	100	113	51	35	27	45	42	59	83	61	57	58	41	41	74	53	103	19	95	13	36	24	14	10	5	20		50
APALACHICOLA FLORIDA	354	487	447	312	250	398	420	428	117	66	40	423	431	430	426	401	400	394	377	316	347	370	46	261	147	56	170	41	360	379		303
ARGONNE NAT. LAB.	331	327	255	19	47	101	256	214	131	239	282	126	89	258	173	110	57	159	219	31	169	23	226	210	155	217	214	201	234	123		173
ASTORIA OREGON	27	180	67	162	88	163	10	50	175	217	104	12	18	109	140	56	49	48	42	79	67	119	66	97	46	21	148	194	197	183		98
ATLANTA GEORGIA	149	438	398	339	109	289	387	379	139	266	280	395	268	339	379	369	352	347	325	257	226	245	113	344	277	60	64	44	93	309		266
BARROW ALASKA	7	13	7	10	2	1	0	0	0	0	2	0	0	0	0	2	0	0	---	---	---	---	---	---	---	---	---	---	---	---		---
BETHEL ALASKA	88	57	53	50	75	65	---	---	42	127	107	48	29	64	73	73	63	52	60	55	40	46	61	---	53	46	64	70	73	19		61
BISMARCK N.DAK.	272	196	247	247	182	247	134	106	200	226	211	186	141	216	154	56	213	203	197	71	41	197	172	51	98	148	134	181	151	152		168
BLUE HILL MASS.	29	19	276	275	179	80	15	80	28	44	45	125	218	197	261	---	---	---	---	139	49	180	79	238	254	128	116	66	41	72		124
BOISE IDAHO	304	145	121	100	64	256	146	67	79	231	223	168	119	59	158	220	143	192	32	33	244	66	42	136	179	186	135	231	227	173		149
BOSTON MASSACHUSETTS	33	30	277	293	161	63	14	36	33	50	40	87	224	199	268	174	129	152	27	124	38	168	89	241	256	119	161	47	26	68		121
BROWNSVILLE TEXAS	196	338	195	237	439	425	431	299	425	405	433	430	370	416	366	375	404	331	258	353	410	336	419	384	173	92	35	408	419	422		341
BURLINGTON VERMONT	27	51	148	162	104	67	42	48	58	96	25	86	97	57	---	26	82	42	705	240	200	109	42	218	241	165	29	68	43	25		114
CANTON ISLAND P.I.	661	632	524	672	682	612	686	615*	596*	616	665	669	---	679	691*	691	677	631	674*	---	635	658	666	633	604	628*	598	545	---	550		637*
CAPE HATTERAS N.C.	336	---	396	331	291	70	66	352	347	194	336	340	238	326	345	338	318	325	299	314	255	237	126	268	255	293	216	280	46	312		271
CARIBOU MAINE	113	30	121	87	175	16	63	26	70	57	79	77	118	125	99	152	206	53	---	208	60	61	15	121	105	42	50	168	39	61		90
CHARLESTON S.C.	---	449	437	311	140	186	400	410	363	102	362	393	387	411	407	406	399	382	361	292	156	276	90	354	347	221	112	176	130	372		304
CLEVELAND OHIO	33	103	266	91	9	41	20	12	216	51	158	55	29	52	139	134	109	34	201	115	97	47	10	183	184	150	202	189	5	64		100
COLUMBIA MISSOURI	359	362	110	61	126	308	116	237	250	302	178	302	114	303	95	141	136	294	92	67	202	47	292	283	188	175	279	259	284	260		207
CORVALLIS OREGON	43	259	75	171	74	170	31	30	195	189	206	117	49	112	142	70	73	60	---	102	96	35	62	137	160	58	192	218	141	85		116
DAVIS CALIFORNIA	354	187	201	72	61	273	268	105	315	340	203	160	161	77	306	327	193	288	29	224	262	128	71	230	238	249	187	173	86	77		195
DODGE CITY KANSAS	343*	314	243	327	340	335	274	300	319	318	309	238	314	236	314	294	182	293	98	187	54	234	292	278	281	299	286	284	283	282		272*
E. LANSING MICHIGAN	256	238	331	142	50	121	102	---	196	160	60	88	61	133	196	207	90	58	---	100	139	---	33	239	163	184	68	218	87	87		141
EL PASO TEXAS	369	399	478	464	463	451*	356	416	426	436	412	427*	416	371	433	195	413	344	398	281	193	412	406	399	61	164	389	382	359	276		366*
ELY NEVADA	398	366	332	254	220	148	336	161	348*	328	341	245	223	307	118	368	336	342	262	120	181	278	239	262	314	295	292	180	284	290		272*
EPPLEY,NEWPORT R.I.	56	51	280	289	238	105	51	61	53	81	83	226	253	189	264	151	136	183	66	231	74	200	115	238	230	136	163	102	51	52		147
FAIRBANKS ALASKA	36	29	37	62	95	76	34	19	47	17	35	51	8	24	40	48	21	47	52	32	41	37	39	40	5	25	12	31	29	11		36
FORT WORTH TEXAS	429*	409	81	333	394	383	372	152	---	365	349	287	368	305	151	262	140	149	64	339	116	271	367	357	318	301	221	184	350	343		281*
FRESNO CALIFORNIA	340	268	247	158	92	175	216	321	292	227	295	194	257	199	138	215	239	222	120	84	256	234	76	113	236	255	54	59	79	61		191
GAINESVILLE FLORIDA	384	525	484	274	103	368	483	451	256	196	215	495	470	490	425	405	444	---	---	---	---	397	172	366	131	103	316	72	252	398		334
GLASGOW MONTANA	230	84	236	245	236	59	205	159	222	149	233	202	207	165	56	206	190	162	186	59	110	204	185	165	154	110	158	162	134	174		168
GRAND JUNCTION COLO.	395	498	200	265	294	---	349	328	349	336	346	311	209	307	304	36	380	322	320	180	140	309	303	176	300	293	297	304	301	272		291
GREAT FALLS MONTANA	180	143	205	151	117	169	166	113	177	59	208	117	158	138	131	179	139	153	161	85	190	142	90	95	71	102	167	107	152	65		138
GREENSBORO N.C.	189	385	395	340	175	31	118	370	342	321	338	377	252	214	343	346	329	302	309	267	203	213	30	328	316	147	232	57	102	177		252
GRIFFIN EXP.STA.GA.	205	521	495	410	183	436	565	456	147	250	362	491	410	460	465	463	439	440	412	370	307	342	77	428	319	104	98	50	175	435		344
INDIANAPOLIS INDIANA	350	373	299	---	84	108	250	318	314	232	335	296	109	215	293	190	89	193	211	67	312	16	69	281	231	205	254	208	92	100		210
ITHACA NEW YORK	18	149	198	111	75	30	8	18	15	126	218	106	81	80	97	46	34	43	67	216	12	129	15	98	152	73	125	154	8	72		86
LAKE CHARLES LA.	216	459	305	186	232	429	425	71	254	100	410	371	420	400	295	265	328	328	304	281	94	114	408	400	---	263	96	59	380	367		285
LAKELAND FLORIDA	403	575	487	256	250	400	470	375	405	62	162	---	---	---	420*	500*	415	362	350	261	352	327	308	167	230	217	266	188	313	377		329*
LANDER WYOMING	298	308	249	277	252	171	238	220	226	276	244	154	135	218	283	133	201	270	183	252	246	250	219	113	250	243	227	237	214	226		227
LARAMIE WYOMING	316	319	264	242	260	268	278	205	126	274	234	252	200	248	176	81	265	237	256	222	156	239	196	70	222	220	223	244	216	230		225
LAS VEGAS NEVADA	397	345	178	330	377	---	361	364	370	337	362	308	178	340	296	359	328	353	341	45	250	337	333	283	326	316	320	286	237	320		309
LITTLE ROCK ARKANSAS	323	356	262	69	139	326	318	241	257	294	297	313	312	302	83	189	127	42	86	218	38	69	307	300	268	195	234	30	287	278		219
LOS ANGELES CALIF.WB	368	290	173	321	359	179	387	333	337	291	306	255	132	201	85	345	249	323	276	220	290	325	329	309	320	330	297	244	278	295		282
LOS ANGELES CALIF. U	383	270	209	322	354	119	392	331	346	310	332	273	122	206	42	344	258	320	280	226	283	324	313	297	313	313	297	243	282	298		280
MANHATTAN KANSAS	343	339	191	78	328	339	302	185	326	329	177	335	326	317	259	279	89	309	71	265	60	2	295	283	94	290	279	268	278	278*		244*
MATANUSKA ALASKA	106	29	43	34	15	60	40	29	---	---	---	79	---	---	---	---	---	51	39	---	---	---	---	---	---	---	---	---	---	---		---
MAUNA LOA OB.HAWAII	643	544	564	624	612	627	527	364	348	618	567	591	608	605	597	537	549	515	576	595	580	572	563	553	572	576	493	343	533	543		551
MEDFORD OREGON	130	194	110	153	123	162	60	25	137	154	126	58	120	126	131	228	77	118	99	149	150	74	79	216	149	50	208	140	170	63		126
MIAMI FLORIDA	417	400	414	257	228	304	---	---	---	---	---	---	---	---	---	222	209	314	316	199	391	387	363	272	369	363	406	272	280	428		324
MIDLAND TEXAS	370	322	393	400	301	394	365	354	377	371	361	368	363	339	355	279	347	103	223	340	199	356	361	354	307	169	60	333	313	301		316
NASHVILLE TENNESSEE	77	378	309	89	39	129	235	320	161	286	320	321	85	273	319	227	98	13	43	50	158	114	22	287	263	59	118	90	46	---		170
NEW YORK N.Y. U									118	137	189	255	230	194	167	137	277	180	266	205	86	143	43	258	251	161	193	176	14	60		170
NORTH OMAHA NEBRASKA	360	349	325	178	224	329	298	296	186	317	289	191	189	304	250	96	76	295	227	177	95	49	285	229	57	255	254	252	259	262		232

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

NOVEMBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
OAK RIDGE TENNESSEE	19	343	272	229	31	124	271	295	153	281	297	309	123	49	266	182	257	156	192	119	160	213	136	269	259	23	79	119	28	113		179
OKLAHOMA CITY OKLA.	404	365	164	337	353	356	335	215	320	327	276	304	336	255	132	254	286	327	29	274	77	110	330	325	207	303	301	300	311	304		274
PHOENIX ARIZONA	404	343	388	394	405	407	216	398	385	374	379	357	321	364	319	371	389	371	366	357	177	365	358	299	350	362	352	338	296	200		347
PORTLAND MAINE	14	38	126	198	121	35	19	25	35	57	39	107	120	161	235	64	192	129	81	232	28	120	56	245	244	198	148	71	25	57		107
RAPID CITY S.DAK.	273	259	230	234	251	224	113	149	204	244	244	247	212	226	133	49	224	206	220	133	29	220	196	73	203	167	155	205	193	197		191
RIVERSIDE CALIFORNIA	242	393	290	388	411	107	424	399	399	382	410	348	114	245	99	398	316	386	372	99	312	384	372	335	384	380	356	271	332	354		323
SAINT CLOUD MINN.	246	255	255	222	214	253	182	29	220	248*	234	37	51	137	171	176	162	229	203	26	29	62	135	79	71	159	169	94	105	141		153*
SALT LAKE CITY UTAH	367	356	112	234	210	129	262	152	184	320	295	265	190	297	36	284	325	322	193	97	60	296	147	104	280	265	252	237	192	29		216
SAN ANTONIO TEXAS	341	434	97	117	461	435	420	88	83	418	419	409	416	237	274	291	297	194	225	330	228	384	417	404	112	80	38	318	394	371		291
SANTA MARIA CALIF.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	318	309		---
SAULT STE MARIE MICH	194	208	189	236	90	102	158	234	65	148	89	97	157	---	149	120	20	31	179	51	23	15	89	140	70	93	112	25	---	---		114
SEATTLE WASH. UNIV.	43	204	168	172	196	52	56	96	157	150	120	30	30	48	148	50	44	48	26	130	43	57	100	14	46	28	142	157	159	120		94
SEATTLE TACOMA WASH.	33	175	154	172	204	47	31	124	131	202	96	30	31	51	90	51	94	58	24	162	71	72	99	40	27	23	157	165	160	138		97
SHREVEPORT LOUISIANA	315	403	323	164	271	375	366	136	328	352	353	340	373	347	187	171	158	38	311	171	106	56	352	354	301	254	292	63	336	316		264
SPOKANE WASHINGTON	153	202	184	51	154	54	64	59	---	---	---	120	57	14	174	69	62	72	---	---	---	---	---	---	---	---	---	---	---	---		---
STATE COLLEGE PENN.	21	126	171	226	127	16	28	42	84	195	299	146	115	70	54	133	155	86	232	198	77	146	20	97	260	78	88	154	11	148		120
STERLING VIRGINA	33	284	353	242	158	27	46	112	258	260	317	239	270	281	236	229	275	235	286	233	191	174	18	270	301	68	241	161	39	222		202
STILLWATER OKLAHOMA	410	392	164	---	---	369	357	252	329	336	281	336	329	266	146	266	225	345	32	288	82	88	330	328	194	261	319	---	309	309		272
SWAN ISLAND W.I.	390	441	517	510	513	356	443	484	489	353	223	442	215	490	432	327	---	373	378	---	420	---	---	---	---	---	---	---	---	---		---
TAMPA FLORIDA	421	504	465	187	214	381	450	430	359	49	177	335	451	458	442	390	422	378	400	283	367	397	316	175	237	203	288	150	314	400		335
TUCSON ARIZONA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---		---

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont. during the month

NOVEMBER 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	9	-14	37	57	17	10	36	20	-1	-43	11	-9	33	21	-8	-1	-31	-35	-17	-20	14	-27	8	-6	-16	-23	-88	-61	-21	-40		-6

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. **The value represents the total incoming minus the total outgoing radiation of all wave lengths.**

These data are of an experimental nature and are published as received from the Huntley Exp. Station. **The instrument with which they were measured has not been checked by the Weather Bureau.**

TOTAL OZONE DATA

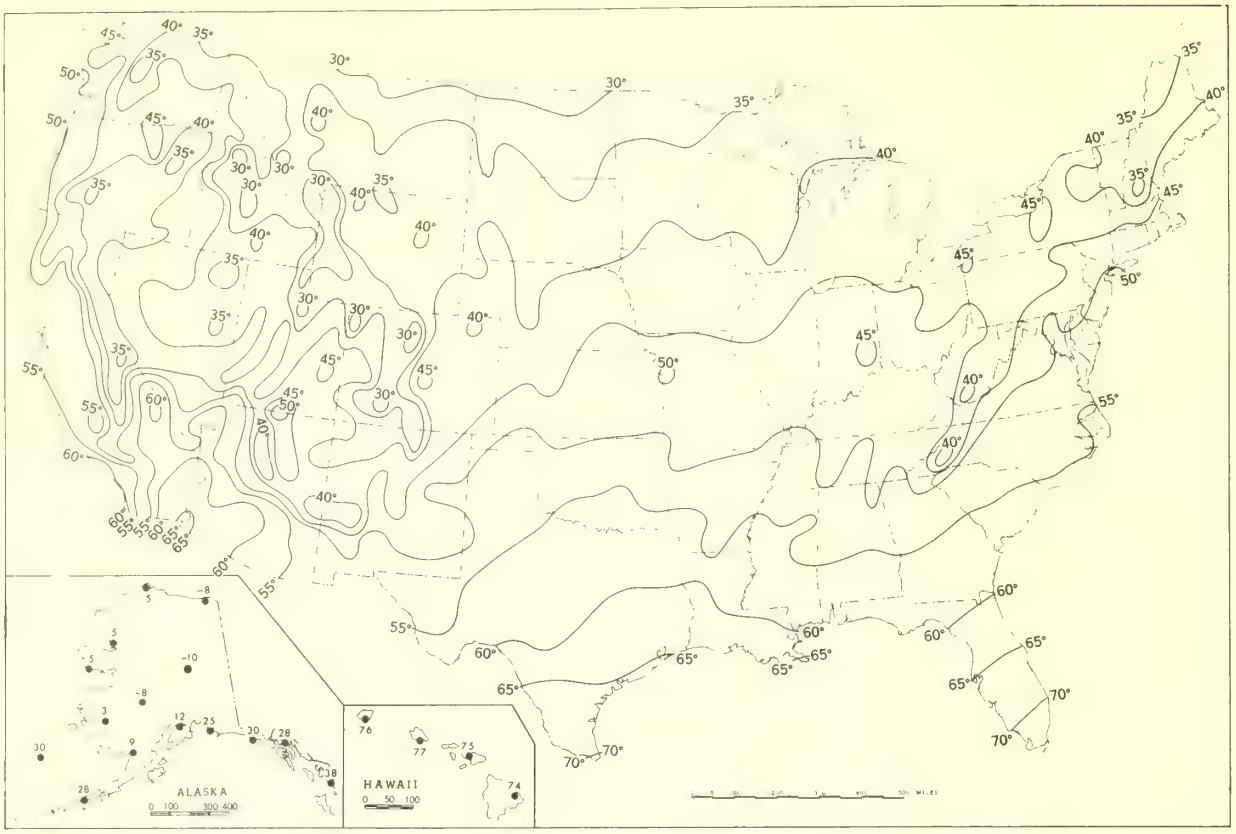
These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code $A S Q Q Q$ defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units: Milli-atmo-cms.

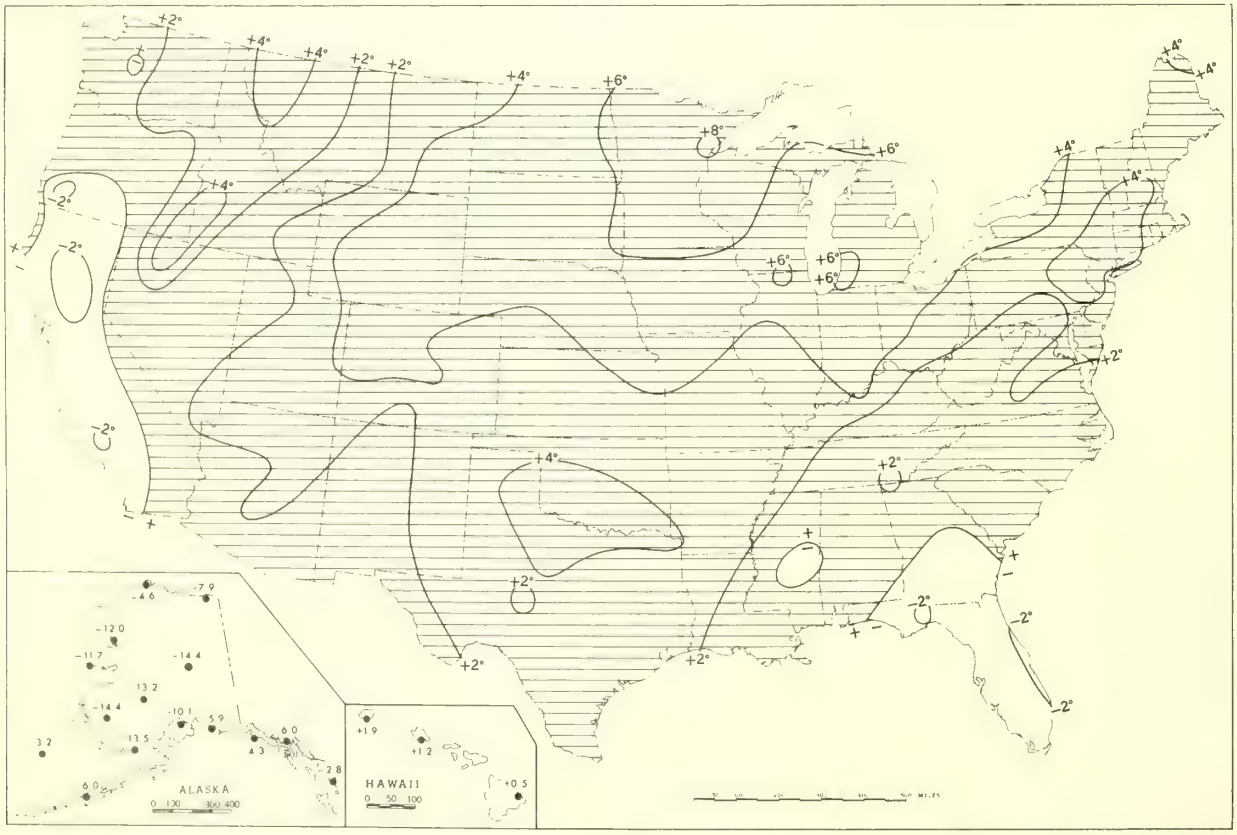
Station	Day of month																															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean O_3
Bismarck, N Dak	00314	05299	05316	00323	00299	00287	06313	06313	00311	00281	00299	00299	34302	00288	04270	35311	00321	00313	00301	35319	35325	00329	00317	36324	35343	34303	00307	00353	00339	35315		311
Caribou, Maine	04334	-----	06371	35335	03315	36343	36304	05305	-----	-----	-----	-----	- --	05341	05356	35345	00280	-----	33312	02300	35321	36317	-----	35324	32319	00333	02333	00315	35319	-----		325
Green Bay, Wis.	00370	00312	00318	03325	05347	05315	05314	07323	35333	00329	05352	05352	05339	05335	05330	00280	07316	00305	00313	05326	04322	-----	00317	-----	04334	05344	00322	04359	00383	00365		331
Mauna Loa, Hawaii	00262	00268	00266	00267	00264	00263	00271	00271	-----	00260	00260	00267	00258	00268	00274	00273	00261	00254	00258	00262	00264	00262	00258	-----	00257	00252	00250	-----	00252	00260		262
Nashville, Tenn	04346	00296	00291	06298	05305	00267	00260	00283	04261	00278	00267	00277	05335	00334	00294	00274	04263	05297	05280	04271	00250	04255	05295	00284	00289	05326	05316	04317	05343	05367		294
Sterling, Va.	06292	00347	00311	03296	04288	- ---	05307	04285	00285	00278	00263	00278	00321	00314	00303	00287	00248	05254	-----	00281	-----	04258	-----	00293	00286	04322	-----	00310	-----	00362		295

The spectrophotometer measures the total amount of ozone in the atmosphere, i. e., the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column (coded $Q Q Q$) is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure, e. g., 350 milli-atmo-cm ozone implies an ozone layer 0.350 centimeter thick. The code $A S$ designates the type of measurement made.

Chart I. A. Average Temperature (°F.) at Surface, November 1963.



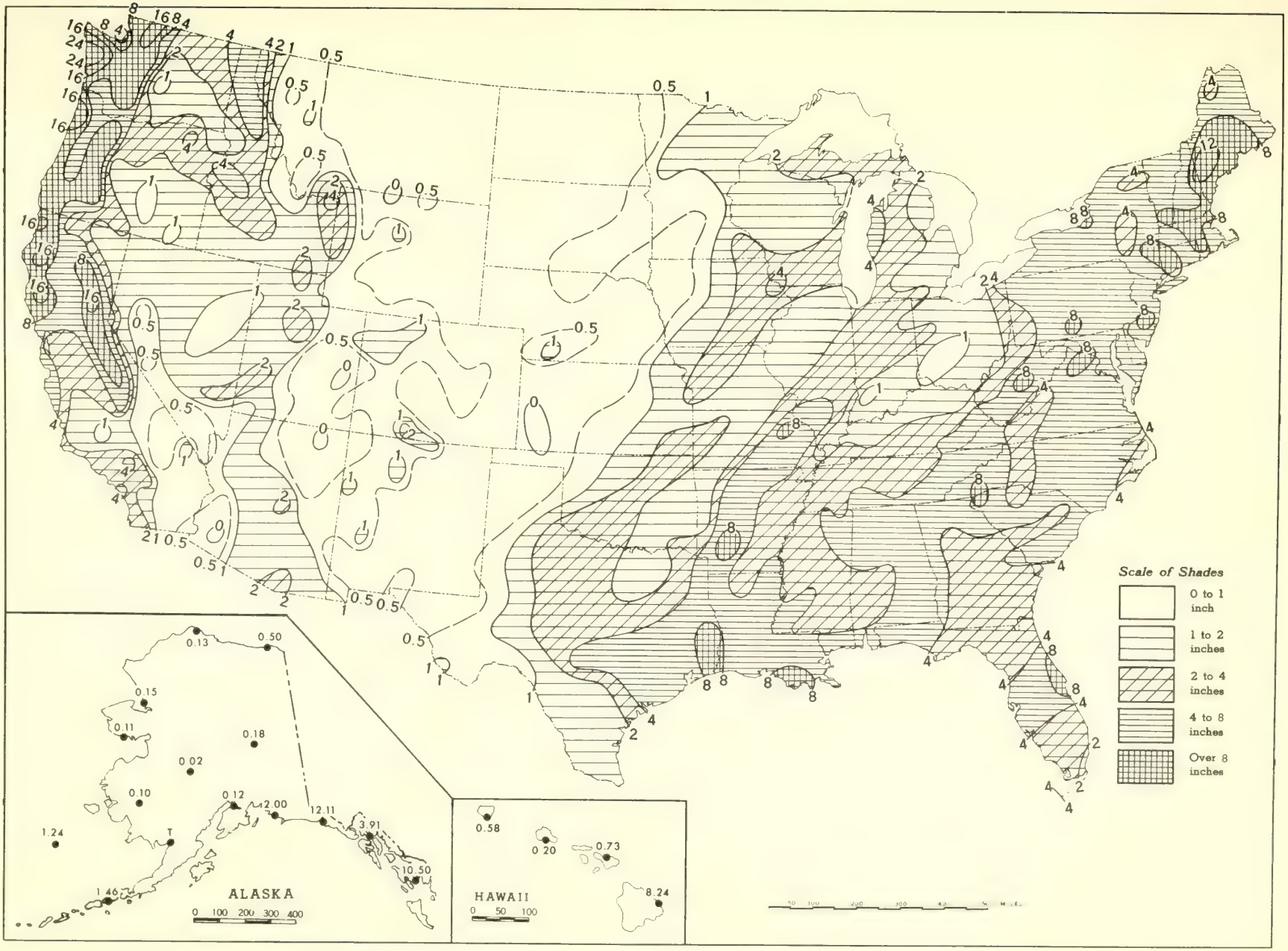
B. Departure of Average Temperature from Normal (°F.), November 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

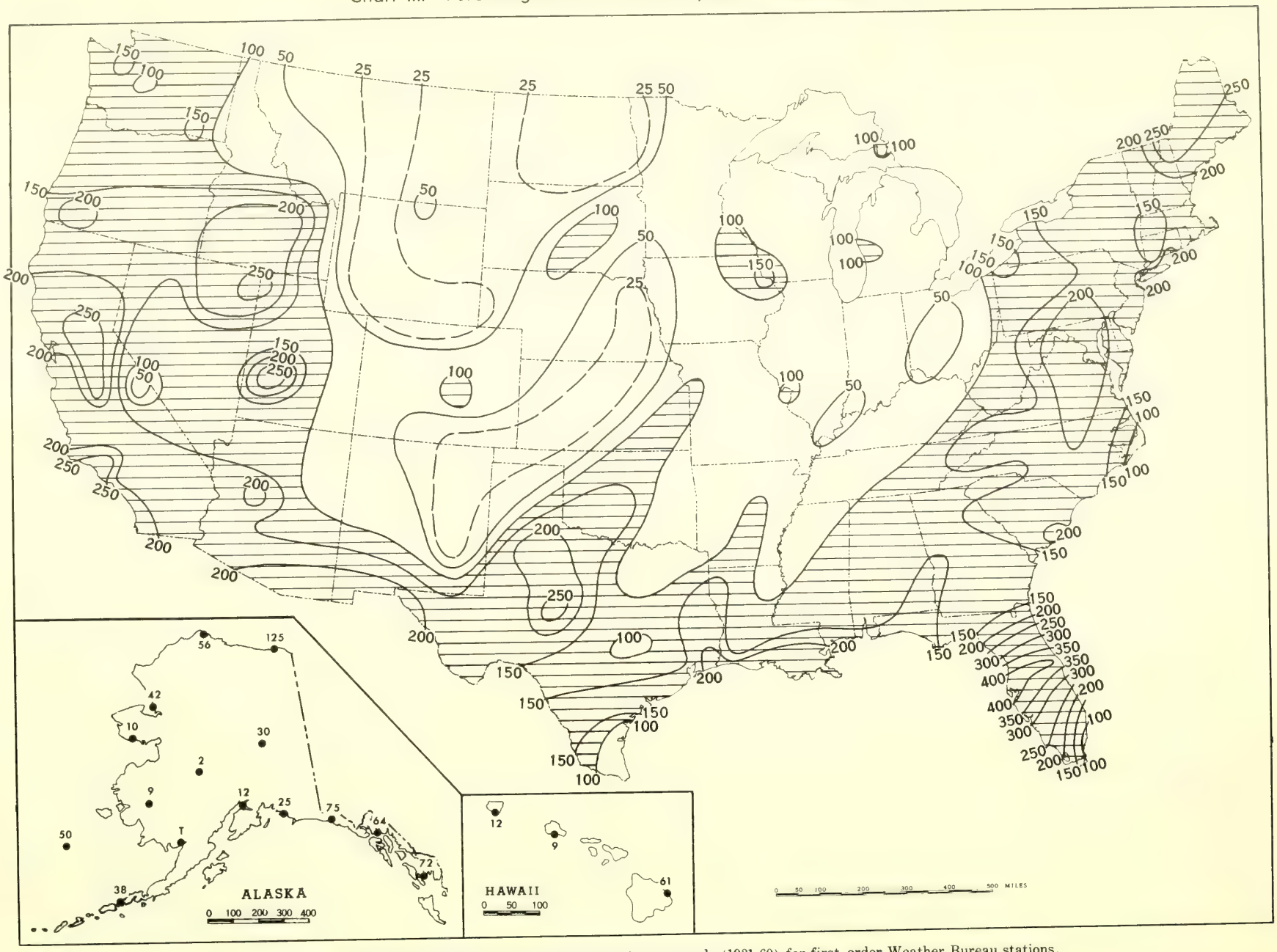
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), November 1963.



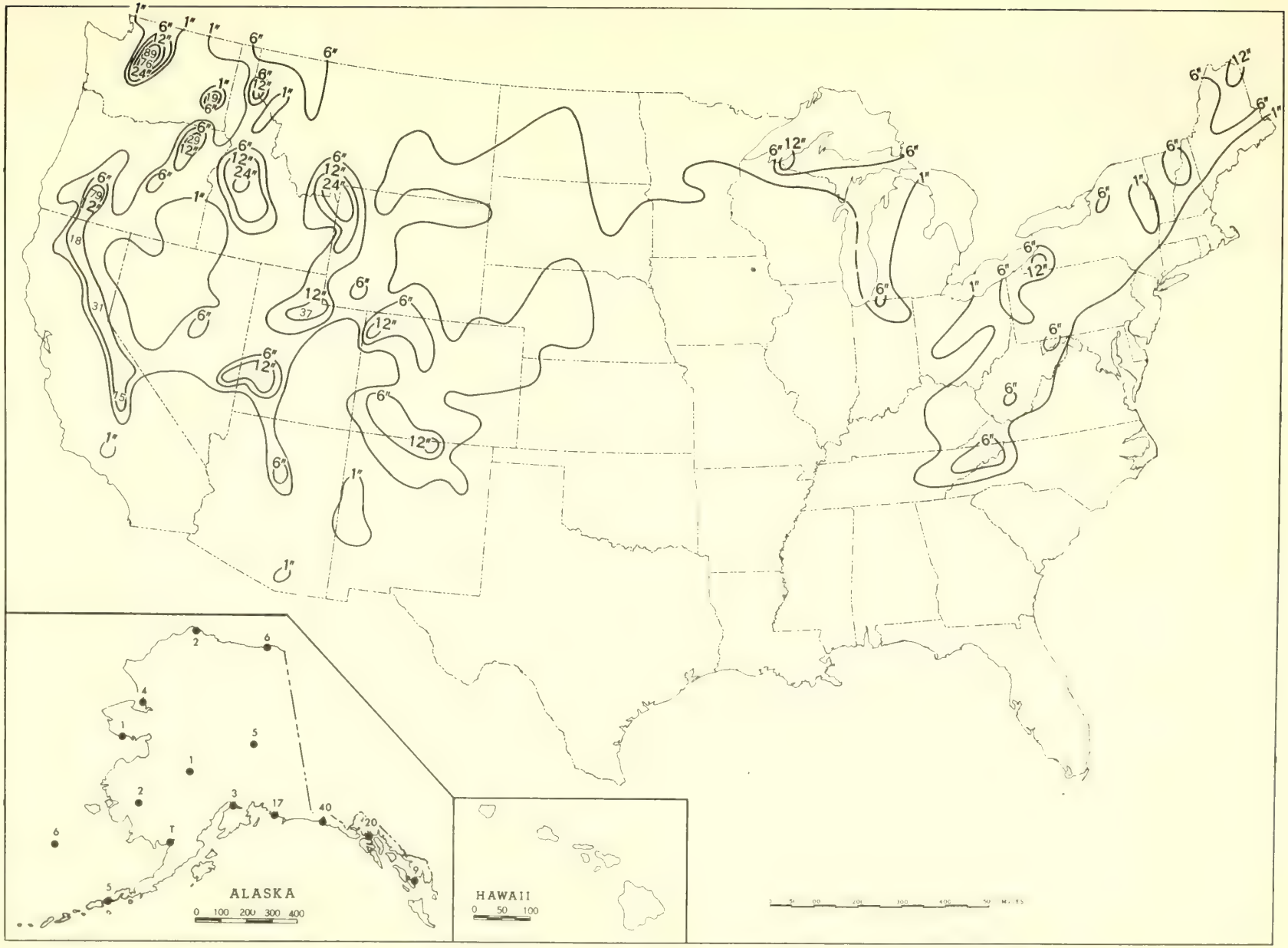
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, November 1963.



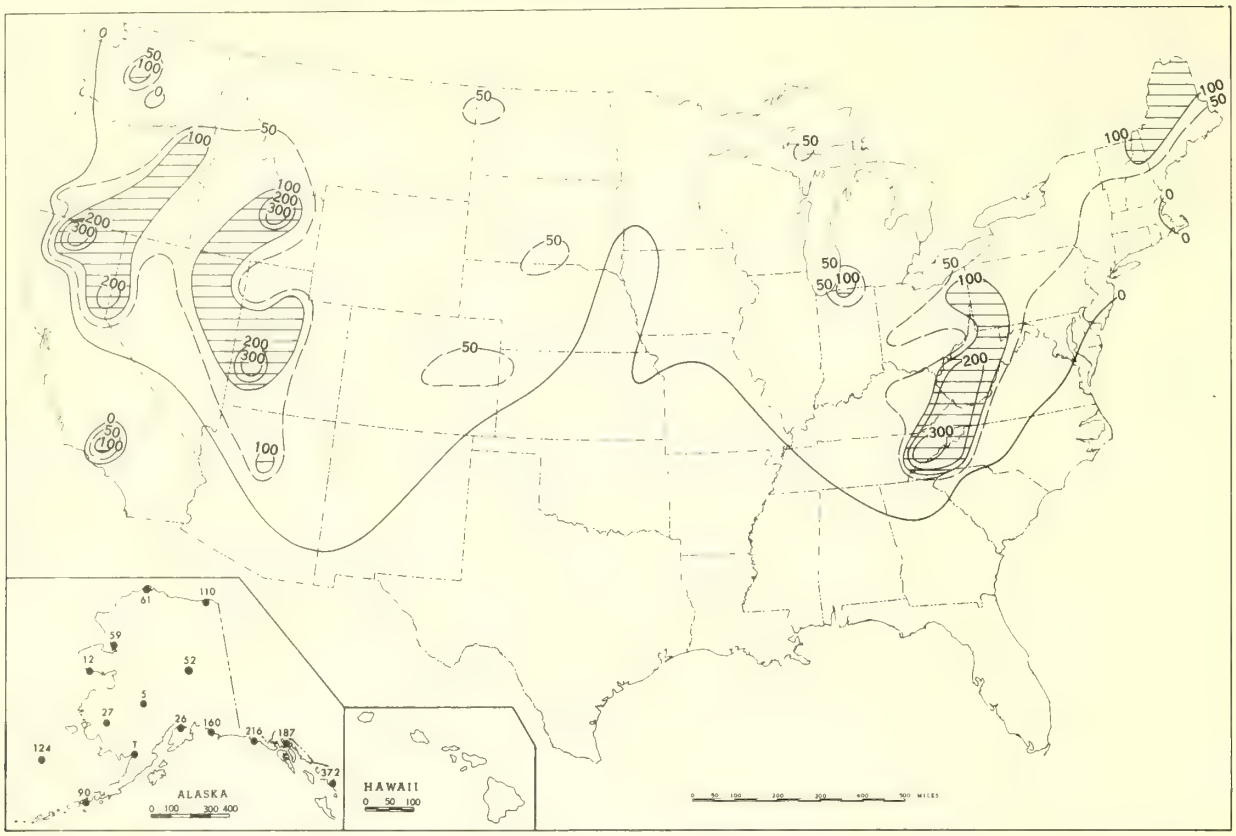
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), November 1963.

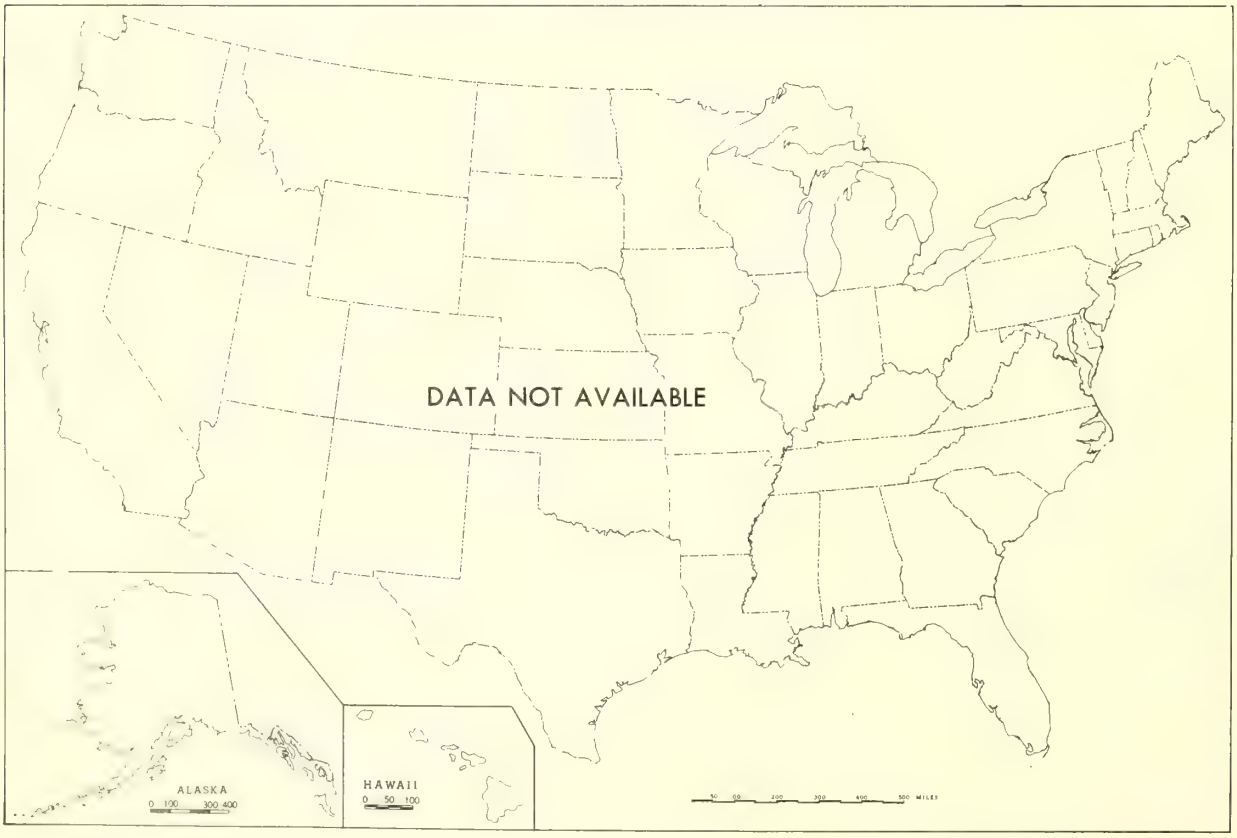


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, November 1963.

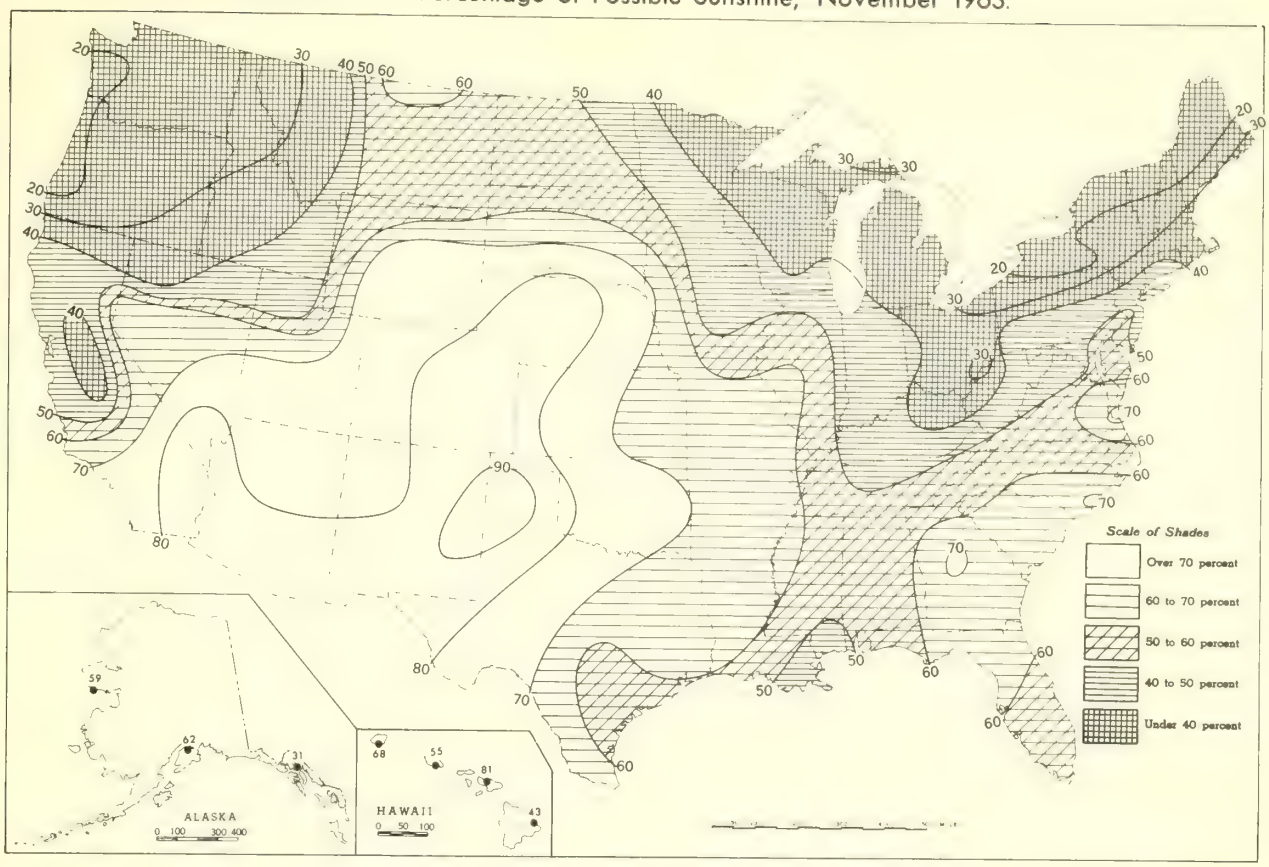


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T., November 1963.

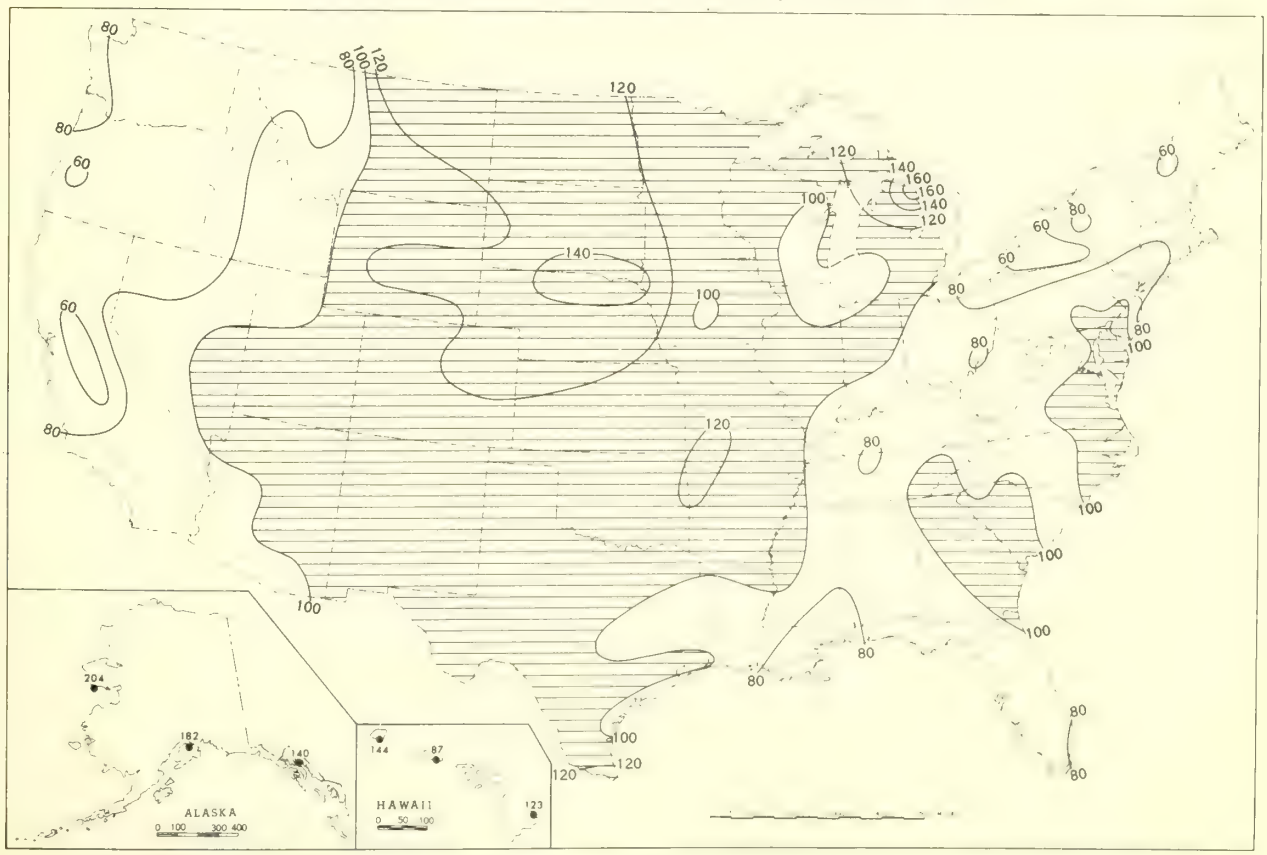


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, November 1963.

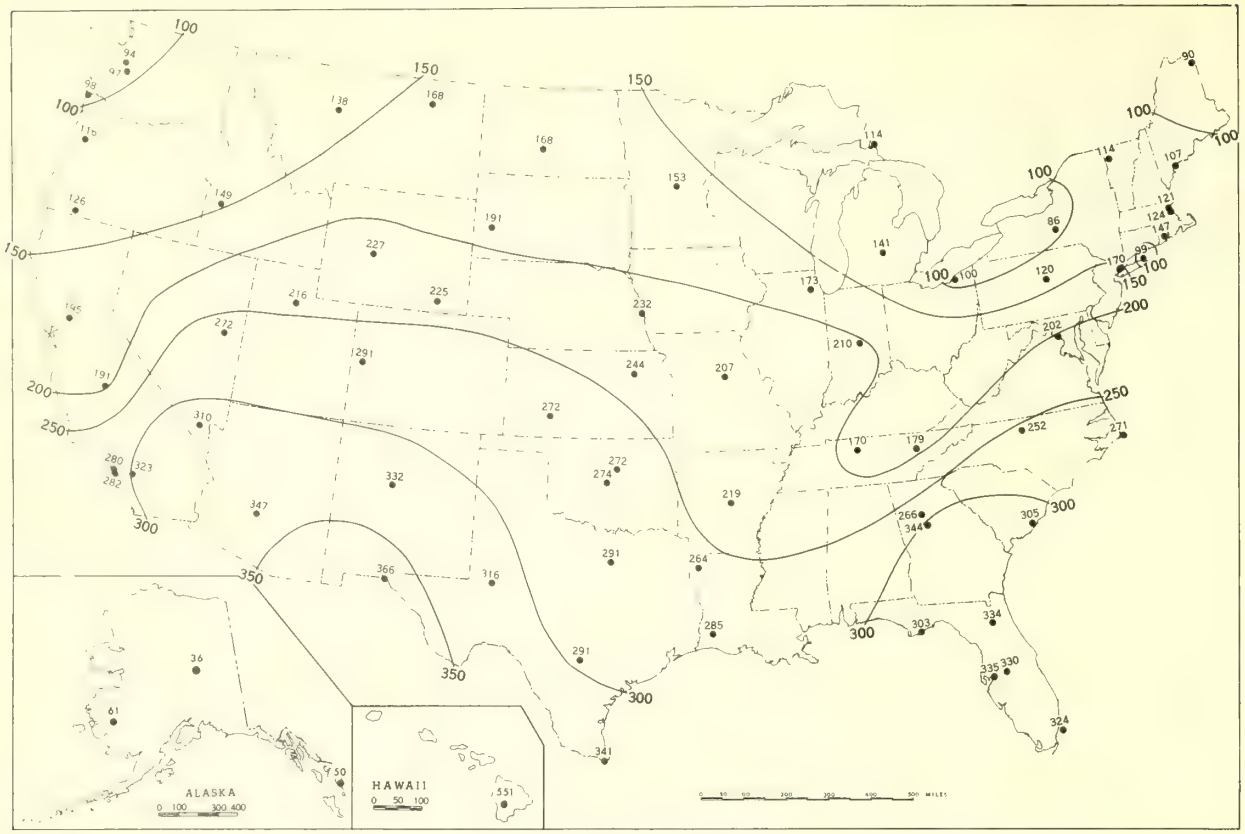


B. Percentage of Mean Monthly Sunshine, November 1963.



A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, November 1963.

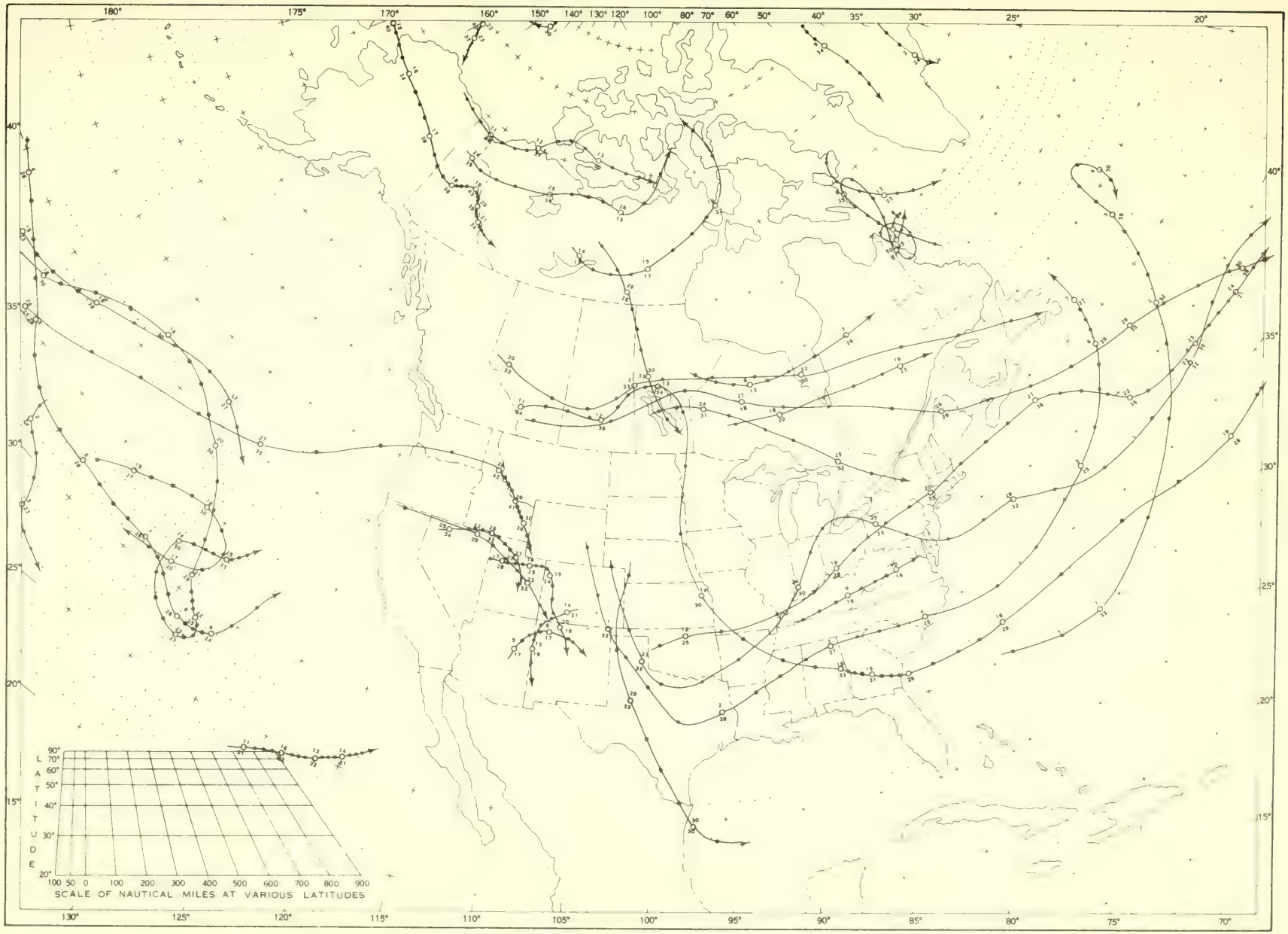


B. Percentage of Mean Daily Solar Radiation, November 1963.



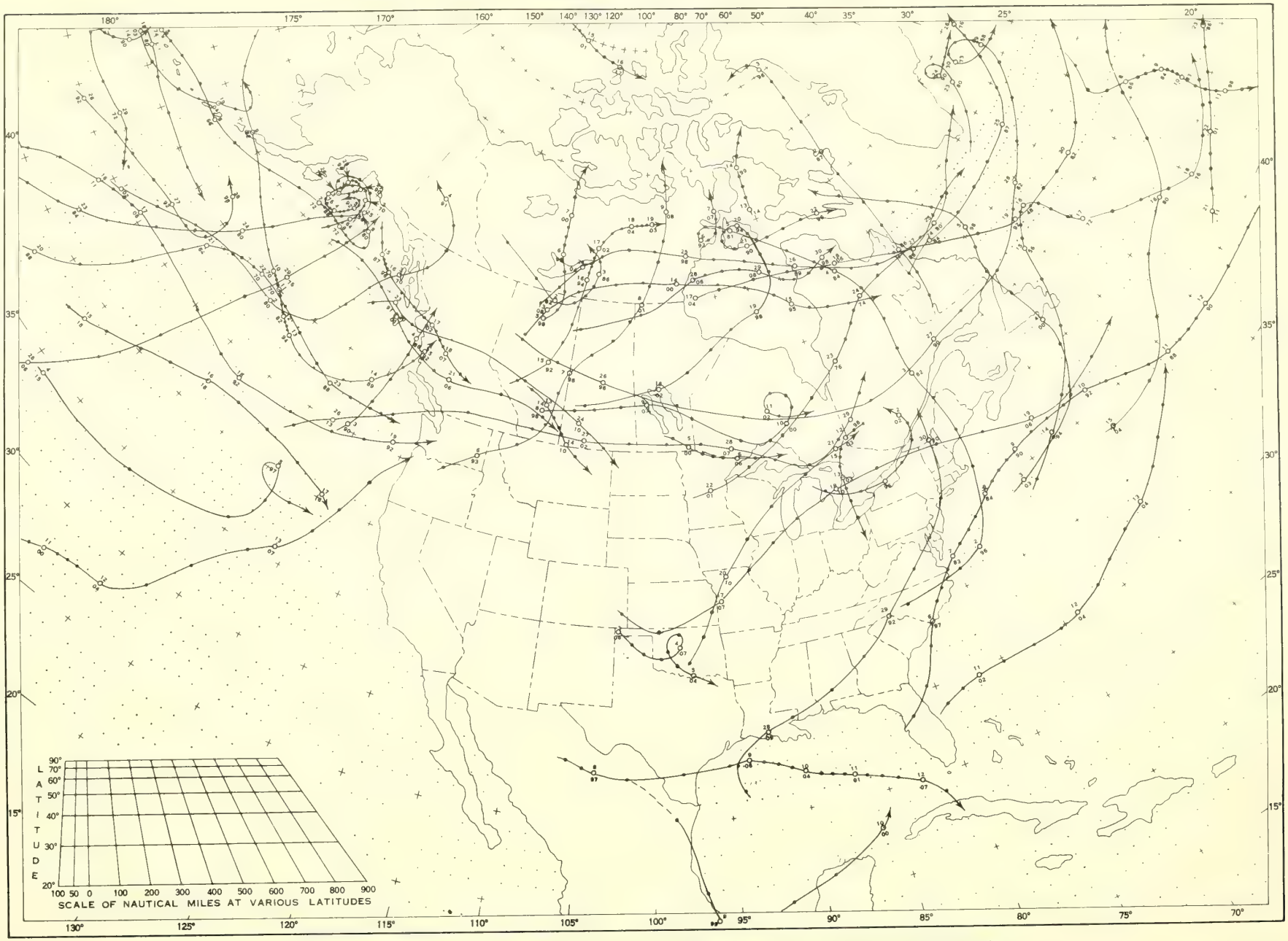
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. cm.$^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, November 1963.



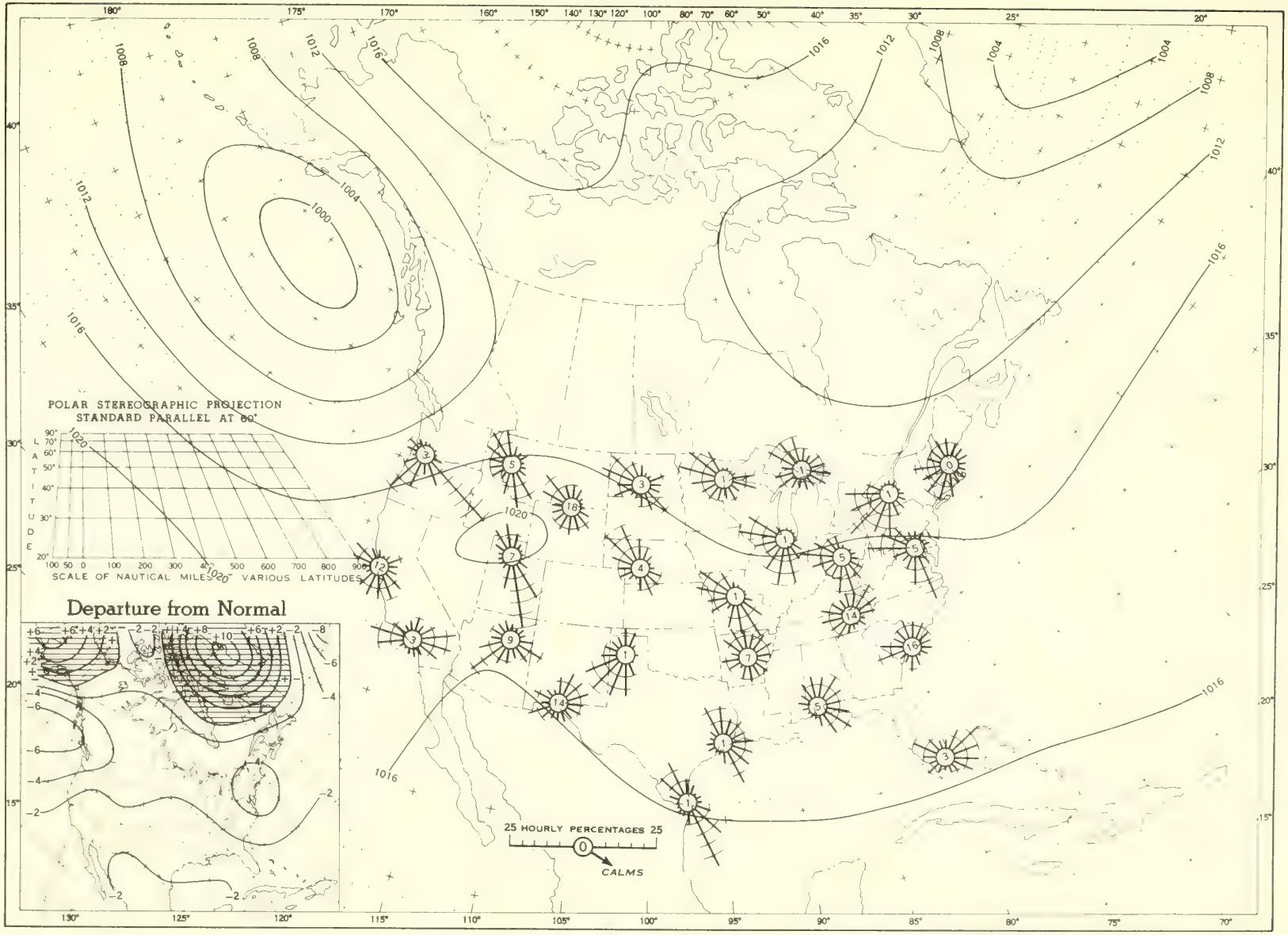
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, November 1963.



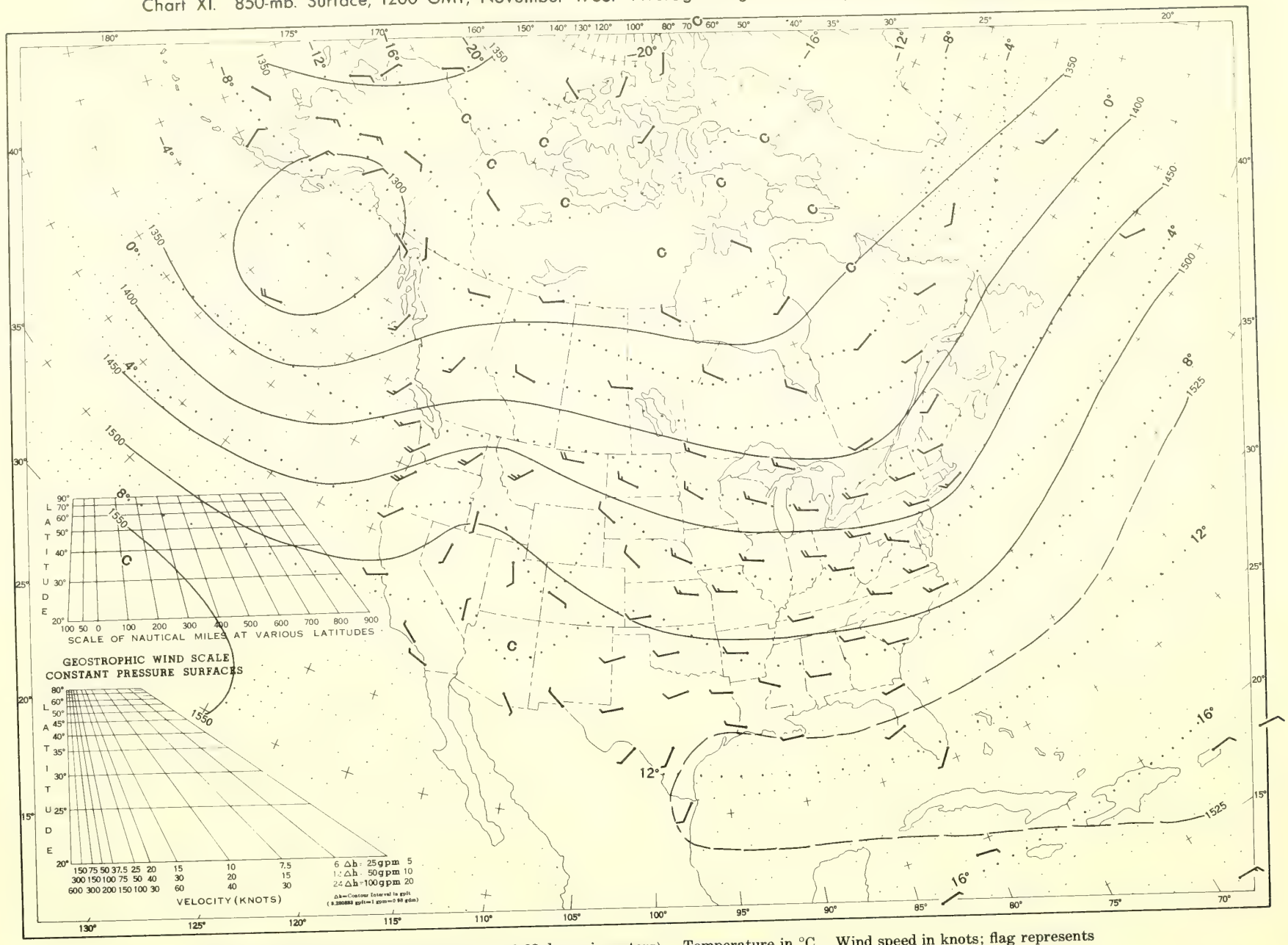
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, November 1963. Inset: Departure of Average Pressure (mb.) from Normal, November 1963.



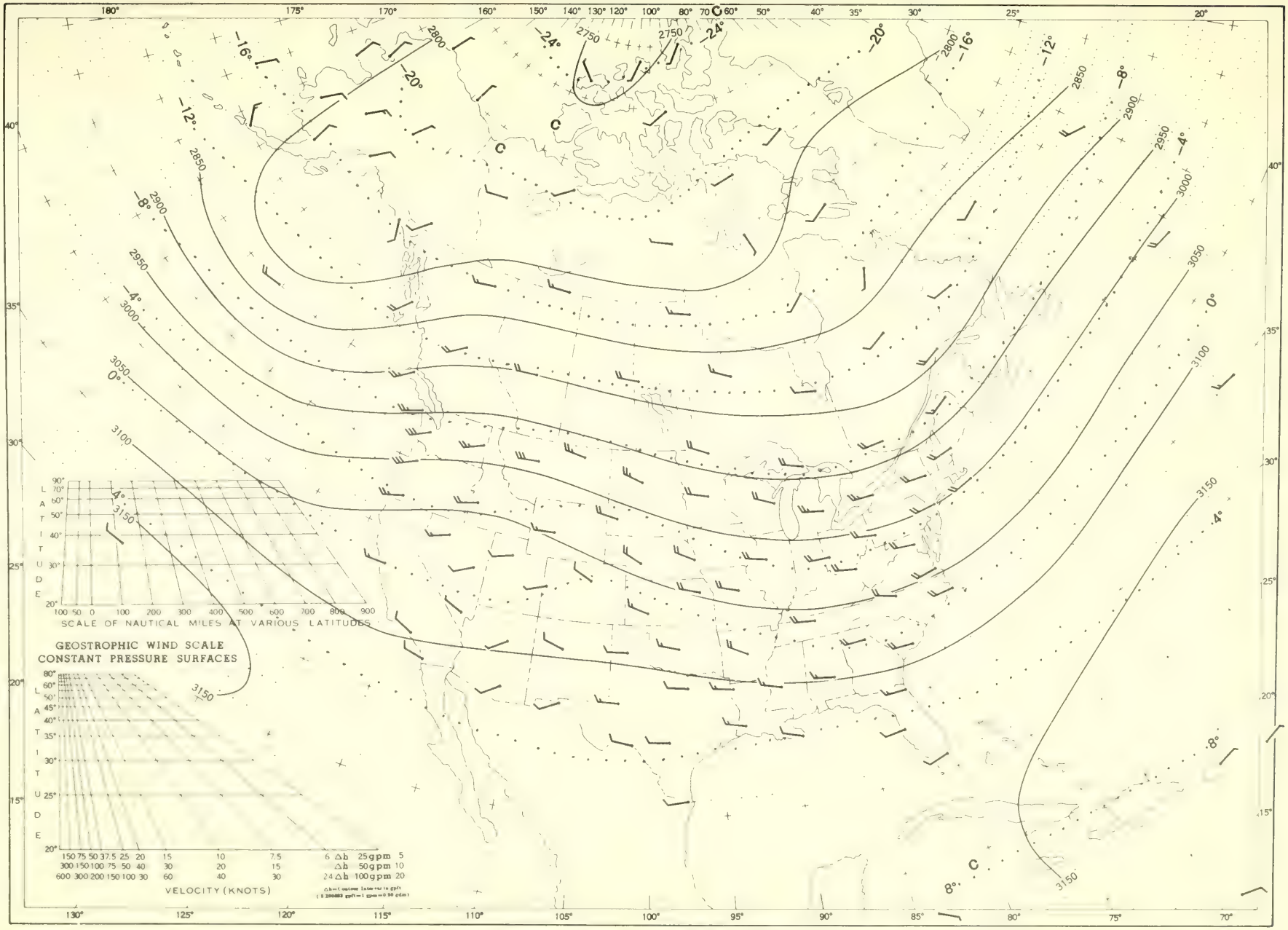
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.



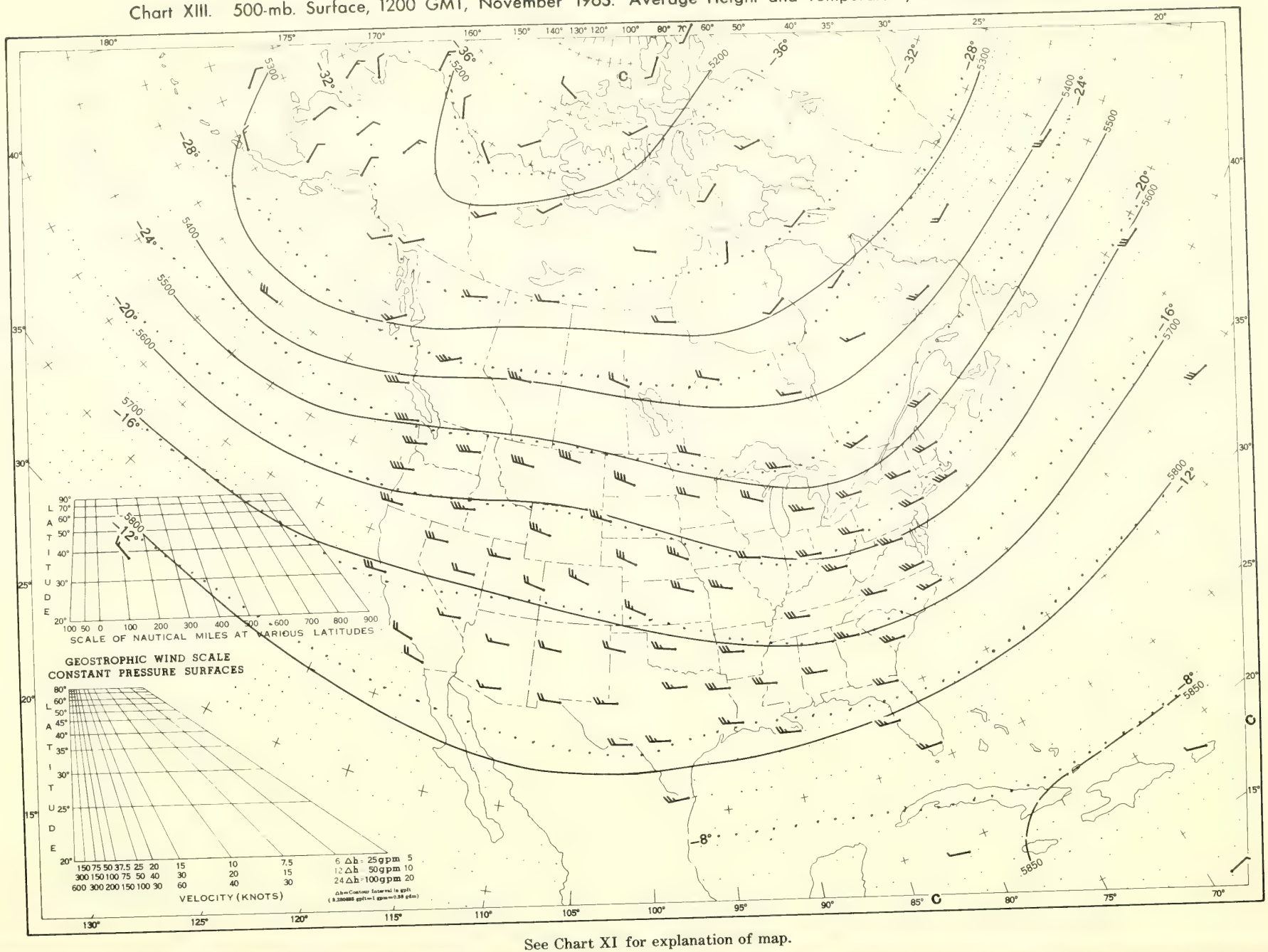
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.



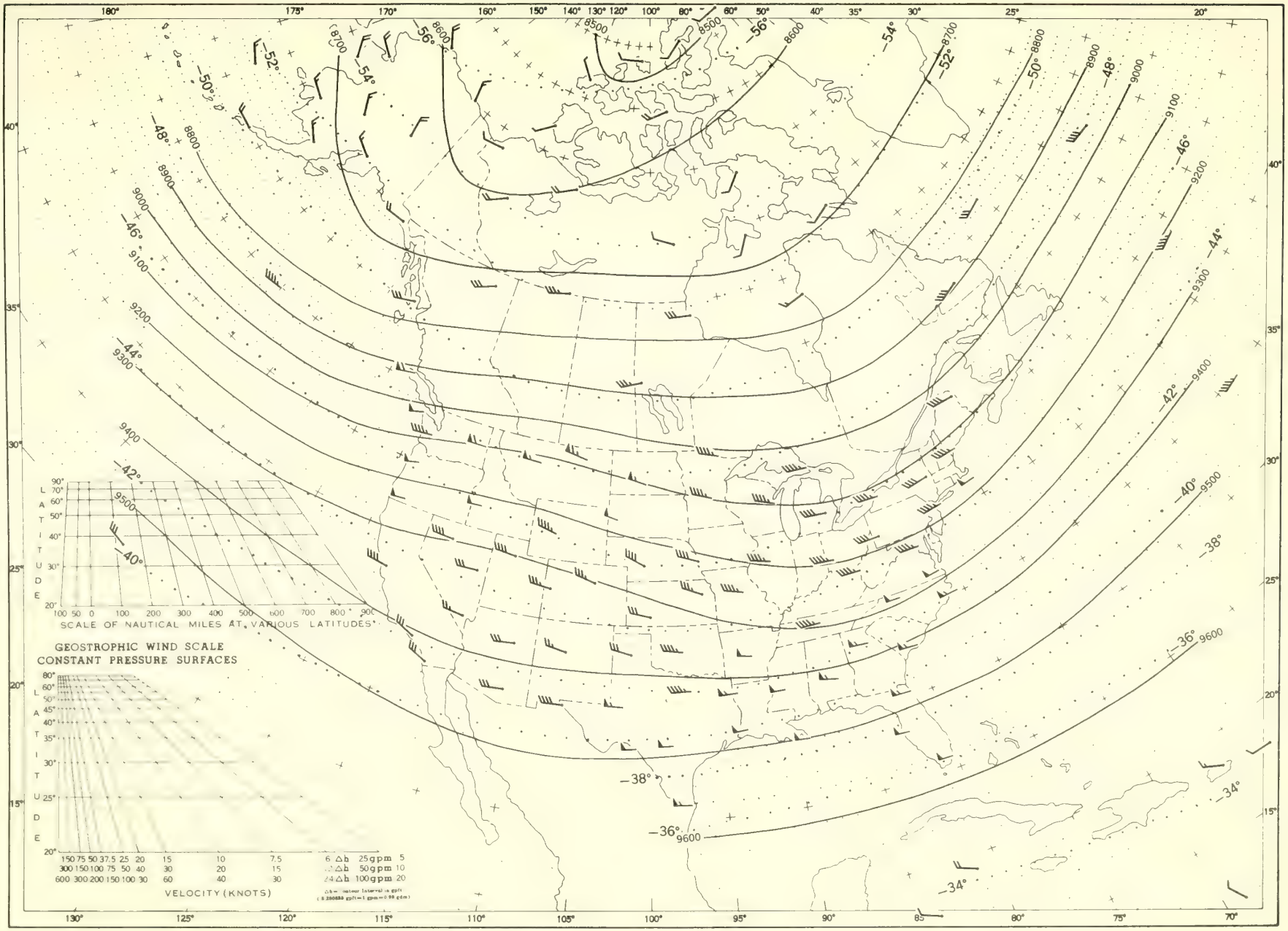
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.



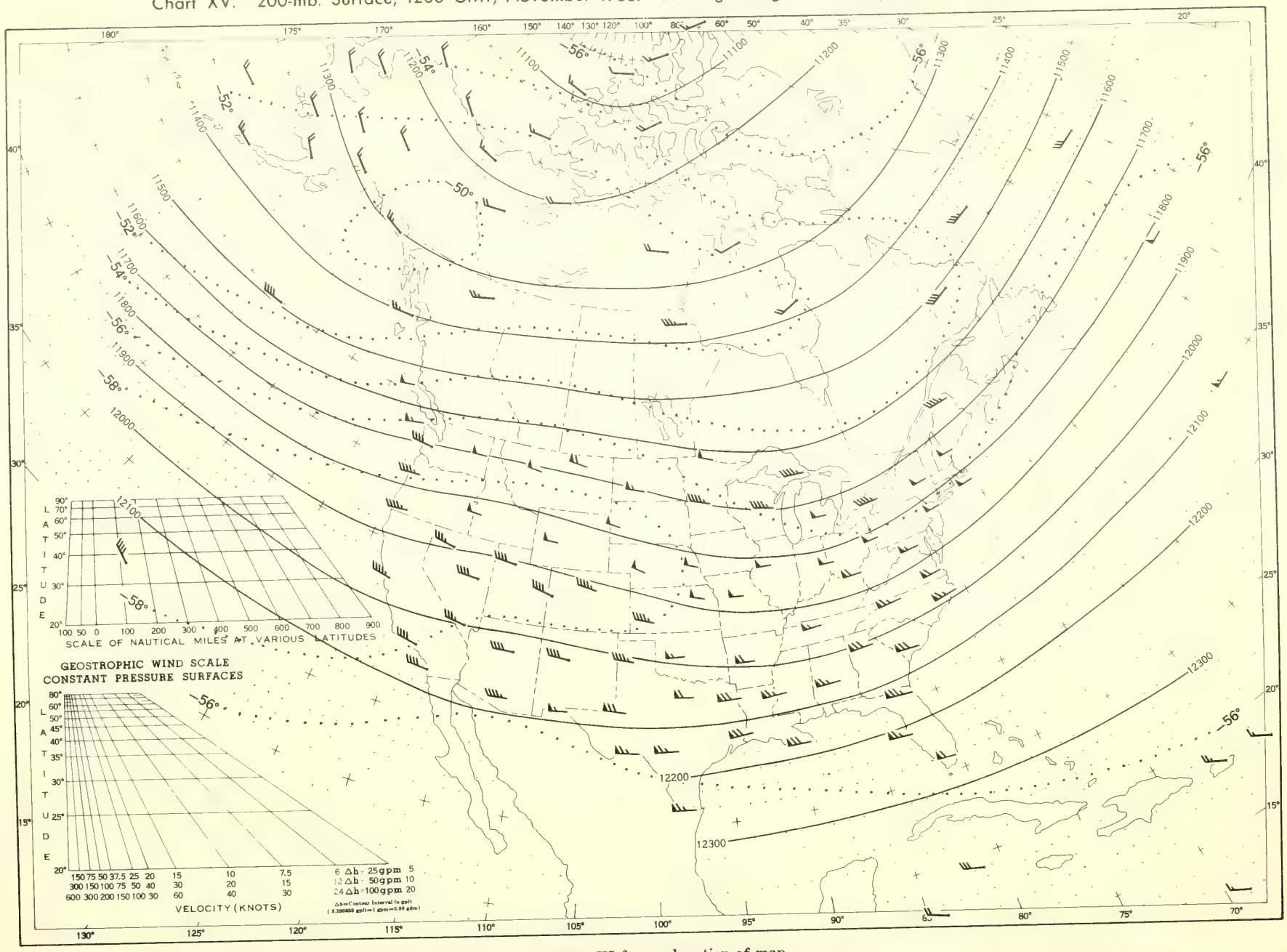
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.



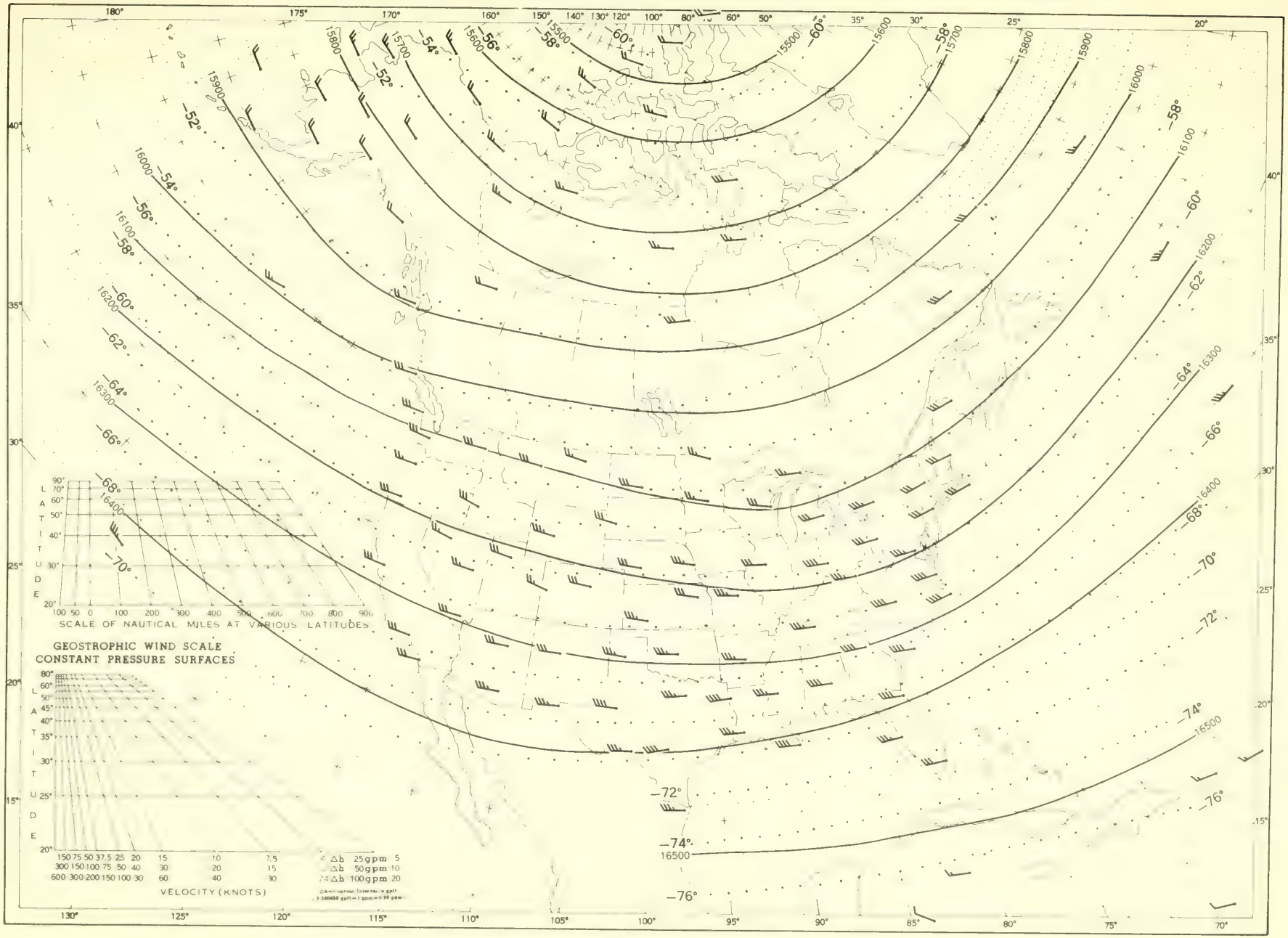
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.



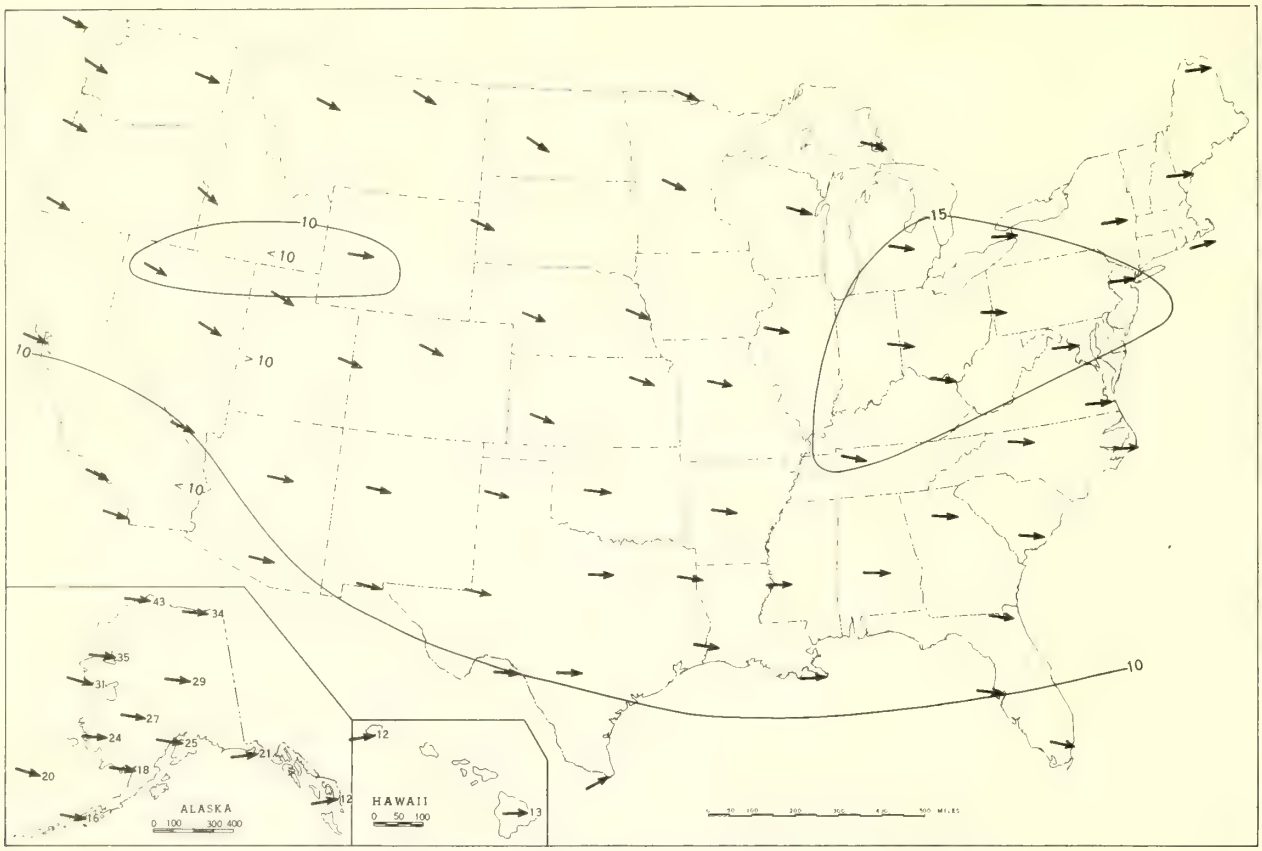
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, November 1963. Average Height and Temperature, and Resultant Winds.

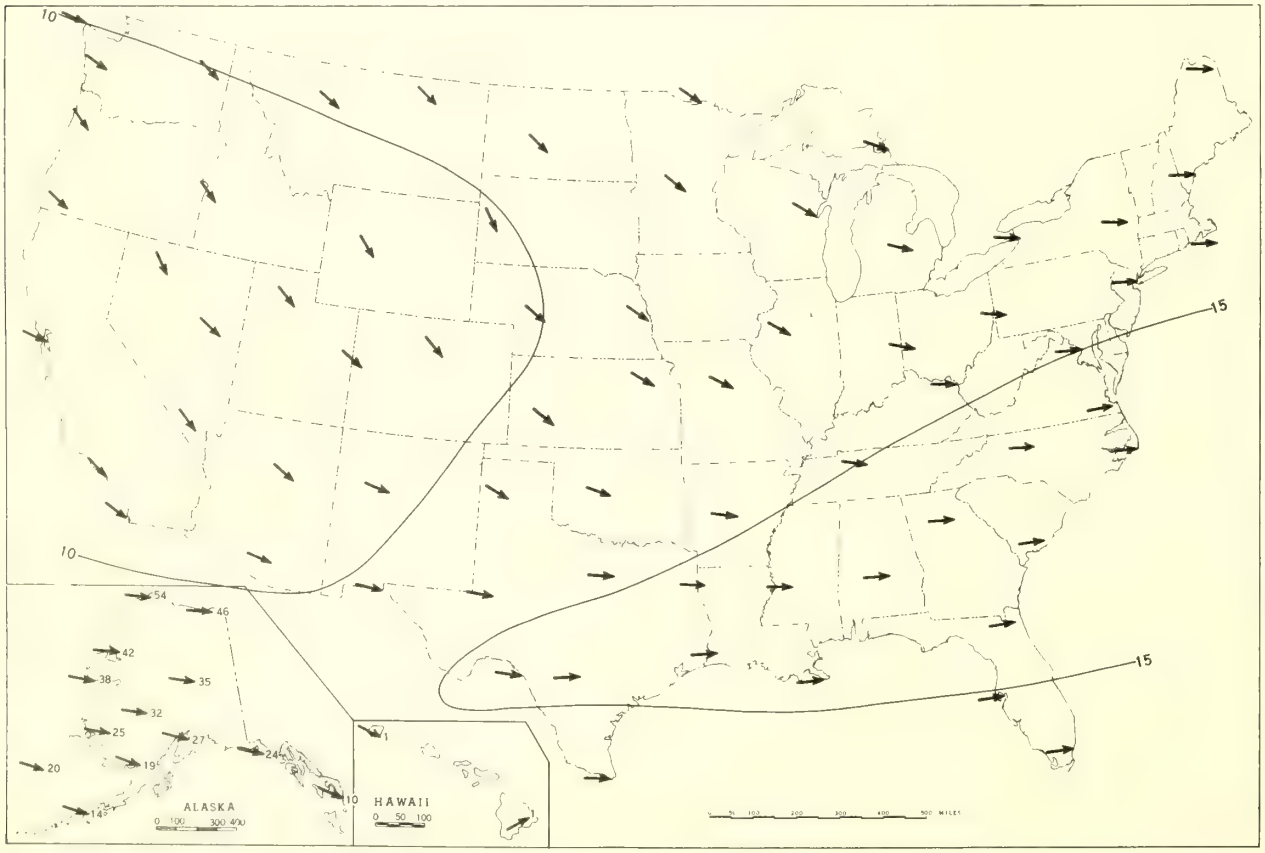


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, November 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, November 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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NOTE: Delayed data and corrections will be carried in the June and December issues of this publication.

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume 14 No. 12 DECEMBER 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

In sharp contrast to the mild weather over most of the Nation in November, December temperatures were much colder than normal. For example, temperatures at Springfield, Ill., averaged 45.2° in November. This was 3.9° warmer than normal. But in December the average temperature at Springfield was 18.9° or 12.6° below normal. The temperatures averaged 26.3° colder in December than in November. Duluth, Minn., was 26.1° colder in December than in November, the average monthly temperature decreasing from 35.7° (8.9° above normal) in November to 9.6° (4.4° below normal) in December. The contrast was not quite so sharp farther west. At Salt Lake City, Utah, the November and December averages were 38.9° and 24.4°, respectively. The corresponding temperature departures were +0.7° and -7.2°. At San Diego, Calif., December was only 2.7° cooler than November. The averages were: November, 61.2°; December 58.5°. November temperatures at San Diego averaged 0.1° below normal and December temperatures averaged 0.9° above normal.

The contrast was noticeable in the Lakes region. At Lansing, Mich., November 1963 was the warmest November since 1910 and December was the coldest since 1919. At Rochester, Minn., November 1963 was the third warmest of record and December was the second coldest. At Midland, Tex., the temperature on November 7 climbed to 88° setting a new November record but December was colder than any previous December except one. December 1963 was the coldest of record at San Antonio and the coldest since 1914 at Waco, Tex. November had been warm throughout the State. Similar contrasts were evident on the east coast. November at Providence, R. I., was the warmest since 1950 and December was the second coldest of record.

Throughout most of the Nation, temperatures dropped sharply after the first week of December and continued cold, except for one or two mild days at Christmas time.

A few rainfall contrasts existed in the Far West. Rainfall at Roseburg, Oreg., exceeded the normal by more than 40 percent but the December total was less than in any December since 1944. Burbank was rainier than usual in November but received only 0.05 inch of rain in December. The December snowfall followed an abnormal pattern. At Reno, Nev., only 1 inch of snow fell during December and the ski slopes were badly worn. Idaho Falls, Idaho, had the heaviest December snow since 1950 and the 17.4 inches at Pocatello was three times their normal.

Heavy snow fell over the Lakes region and at some southeastern locations. Muskegon, Mich., received 82.6 inches of snow in December 1963, more than had ever been received previously in any month at that station. The station also set a new record for the 24-hour snowfall when 20.1 inches fell in 24 hours on the 17th and 18th. Eight inches of snow fell at Birmingham, Ala., on the last day of the year, setting a new 24-hour record. Huntsville, Ala., received 21.7 inches of snow in December. The previous record for any month at Huntsville was 7.2 inches in February 1960.

Three inches of snow fell at Mobile, Ala., on December 31. It was the first time of record that snow had covered the ground.

Fog and low clouds covered parts of the Far Northwest at the beginning of December. Snowy weather prevailed from the Great Lakes region eastward to New England. Ten inches of snow covered the ground at Rumford, Maine. Fair weather continued over the middle section of the Country. A cold front lay across Florida. North of the front, the temperature at Cross City stood at 29°. Key West, in the warm air, registered 68°.

On December 7, a deepening low pressure was centered over the northern Great Plains. Brisk southerly winds brought warm moist Gulf air toward the Great Lakes region. Strong northerly winds caused falling temperatures through the northern Rocky Mountains, northern Great Plains, and upper Mississippi River Valley.

By evening on the 7th, a cold front stretched from Minnesota to Texas as the storm intensified. Blowing and drifting snow with winds reaching 30 m.p.h. in gusts, made driving hazardous over the northern Great Plains and upper Mississippi River Valley.

A new storm developed in the Far Northwest. It brought rains to the lower elevations and snow to the northern mountains. A low pressure area developed over New Mexico. Southerly winds over Texas pushed afternoon temperatures into the 60's and 70's on December 10 but temperatures remained near zero over the northern Great Plains.

The storm in the southern Rocky Mountains intensified. Warm moist air continued to push northward as near zero air opposed it. Snow fell over the southern and central Rocky Mountains and over the northern and central Great Plains. Rain fell from Texas eastward to the Appalachians. By the afternoon of December 11, precipitation was widespread from the Rocky Mountains to the Atlantic coast. Snow fell over the northern and middle States and rains fell over the Southland. On the morning of the 14th, rain with some snow mixed fell as far south as the Gulf States.

Another blast of arctic air pushed into the northern Great Plains about the middle of December. Temperatures dropped to 10° below zero at Kirksville, Mo., on the 15th and 16th. Bemidji, Minn., registered 36° below zero on the 16th. As the arctic air continued its grip on the central and eastern sections of the Country, snow, sleet, and freezing rain slicked the highways of parts of Arkansas, northern Louisiana, northern and central Mississippi, and eastward to Georgia. Little Rock, Ark., received 9.8 inches of snow on the 22d and 14.3 inches fell at Memphis, Tenn. The storm moved eastward to the middle Atlantic coast. Some counties in southwestern Virginia received 12 inches of snow on the 23d. Washington, D. C., received 5.6 inches on that date.

Southwesterly winds on December 24 and 25 pushed the temperatures over Texas into the 60's and 70's. Rapid

City, S. D., registered 60° on the 24th and 25th. Memphis, Tenn., was among the southern cities having a white Christmas.

Stormy weather returned after the Christmas holiday, subzero weather returned to the northern Great Plains and heavy snow fell in Alabama on the last day of the year -- 8 inches at Birmingham, 16 inches at Huntsville, and 3 inches at Mobile.

CONDENSED CLIMATOLOGICAL SUMMARY

DECEMBER 1963

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			In.		In.
Alabama	Brewton 3SSE	78	11	Waterloo	0	24	Madison	6.97	Warrior Lock and Dam	2.97
Arizona *	2 Stations	81	28+	Fort Valley	-10	12	Lukachukai	1.48	59 Stations	.00
Arkansas	do	74	7+	Fayetteville FAA AP	-14	23	Rohwer 2NNE	D 6.09	Fayetteville Exp Sta	.99
California	Oceanside	90	29	White Mountain 2	-13	10	Fort Dick 1NNE	7.02	81 Stations	.00
Colorado	Delhi	72	25	Antero Reservoir	-35	11	Berthoud Pass	2.66	Monte Vista	.00
Connecticut	Bulls Bridge Dam	59	8	Coventry	-19	31	Norfolk 2SW	3.73	Baltic	1.68
Delaware	2 Stations	60	8	Newark University Farm	0	31	Selbyville	3.06	Newark University Farm	1.72
Florida	3 Stations	88	15+	DeFuniak Springs	17	20	Stuart 1N	10.06	Dry Tortugas	.79
Georgia	Colquitt 2E	75	27	Blairsville Exp Sta	-1	19	Atlanta Bolton	7.70	Savannah WBAP	1.77
Idaho	Slate Creek RS	54	31	Stanley	-33	11	Pierce	5.29	Lifton Pumping Sta	.20
Illinois	Waterloo 1WSW	71	6	Morrison	-25	21	Marion 2W	1.61	Bentley 1WNW	.20
Indiana	Jeffersonville	69	7	Greensburg 3SW	-23	21+	South Bend WBAP	1.90	Covington No. 2	.26
Iowa	Jefferson	65	6	Delaware 3WSW	-28	21	Tripoli	.93	Titonka 5NE	.18
Kansas	2 Stations	71	6+	Russell Springs	-17	14	Bucklin	.85	Cassoday	T
Kentucky	do	67	7+	Owenton 2S	-16	19	Fourmile Ky Util Park	2.57	Carrollton Lock 1	.63
Louisiana	Springville Fire TWR 3	81	11	Bonita 4SSW	2	24	Diamond 4NW	8.52	Maney	1.85
Maine	St Francis	61	1	3 Stations	-25	31+	Brunswick	D 3.00	Fort Kent	.70
Maryland	Waldorf Police Brks	62	8	4 Stations	-10	31	Pocomoke City 1S	4.12	Boyds 2NW	1.26
Massachusetts	Sandwich	56	9	Birch Hill Dam	-22	31	Nantucket WBAS	4.56	Adams	1.82
Michigan	Lansing WBAP	59	7	Watersmeet Fish Hatch	-26	23	Holland WJBL	5.19	Spalding	.33
Minnesota	4 Stations	57	6	Baudette 22S	-44	22	Collegeville St John U	1.51	St James Filtration Pl	.14
Mississippi	Wiggins 4SE	78	3	Holly Springs 4N	-12	24	Prentiss 2NNE	7.60	Rolling Fork	2.08
Missouri	Richwoods	74	6	Princeton	-19	23	Bernie	2.07	Belleview	T
Montana	Brady Aznoe	67	3	Brockway	-43	14	Bozeman 12NE	3.76	Glen 4N	T
Nebraska	Greeley	72	5	2 Stations	-25	18+	Concord Exp Farm	D .83	Moorefield	.02
Nevada	Overton	72	2	Charleston	-28	11	Lamoille Power House	1.23	10 Stations	.00
New Hampshire	Manchester	55	1	2 Stations	-27	31+	West Henniker	3.62	Colebrook	1.14
New Jersey	Belleplain St Forest	62	29	Layton 2	-16	31	Elizabeth	D 3.06	Manville	.99
New Mexico	Jal	79	6	Eagle Nest 1S	-29	14	Gascon	.79	28 Stations	.00
New York	N Y Westerleigh Stat Is	57	8	Watertown FAA AP	-33	30	Pulaski	D 6.65	Lawrenceville	.51
North Carolina	Bath 2WSW	70	8	3 Stations	-1	20+	Hamlet	4.66	Danbury	1.20
North Dakota	Medora 22NNW	62	2	2 Stations	-38	15	Cavalier	1.56	Medora 22NNW	T
Ohio	4 Stations	62	8+	Westerville Water Pl	-20	20	Chardon	2.21	St Marys 3W	.38
Oklahoma	2 Stations	75	5+	Grove 1E	-14	23	Flashman Tower	3.36	2 Stations	.11
Oregon	Powers	72	31	Austin 3S	-17	11	Valsetz	13.04	Crowley Ranch	.13
Pennsylvania	2 Stations	57	7	Clermont 4NW	-24	31	Corry	4.81	McKeesport	1.03
Puerto Rico	Dos Bocas	95	17	Guineo	53	10	Rio Blanco Upper	5.62	Sion Farm, V.I.	.18
Rhode Island	Block Island WBAP	54	9	Kingston	-16	31	Block Island WBAP	3.24	Newport	2.12
South Carolina	Kingstree	70	9	Caesars Head	3	19	Salem	5.11	Loris	1.04
South Dakota	Canton Dam	71	5	Andover 7N	-34	15	Lead 1ESE	1.94	3 Stations	T
Tennessee	2 Stations	69	7	Selmer	-14	25	Chattanooga WBAP	5.05	Palmetto	1.25
Texas	3 Stations	90	12+	Lipscomb	-5	12	Houston-Satsuma	6.40	6 Stations	.00
Utah	2 Stations	65	29+	Ouray	-18	13	Alta	3.84	7 Stations	.00
Vermont	Bennington 2NNW	53	8	Woodstock 3E	-29	31	Wardsboro	3.69	Enosburg Falls	.87
Virginia	Boykins	67	8	Wise 1SE	-11	19	Emporia 1WNW	4.63	Stuart 1SSE	.66
Washington	Sequim	66	24	Chewelah 2S	-14	10	Quinault River RS	20.46	John Day Dam	.71
West Virginia	Wellsburg 3NE	64	7	2 Stations	-14	22+	Birch River 6SSW	5.04	Morgantown FAA AP	.92
Wisconsin	Kenosha	57	7	Gordon 2ESE	-30	30	Madeline Island	3.49	Burlington	.24
Wyoming	2 Stations	66	6	Big Piney	-31	11	Moose	2.01	Fort Bridger AP	T
*Alaska	Hollis	58	2	Tok	-51	11	Little Port Walter	36.37	Wainwright	.01

\+ And also on an earlier date or dates

NOTE Dates in the above Condensed Climatological Summary apply to the period 24 hours prior to time of observation. In some cases the actual occurrence is on the calendar date preceding that shown. (See individual Climatological Data for times of observations).

D Water equivalent of snowfall wholly or partly estimated, using a ratio of 1 inch water equivalent to every 10 inches of snowfall.

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation					Snow, Sleet		Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days				Fastest mile								
		Station ⌀	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90°F. or above	Min. 32°F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALABAMA																																
BIRMINGHAM	610	996.6	1023.0	47	27	36.8	- 9.0	66	26	11	19	0	25	26	69	5.94	0.92	3.03	10	0	8.0	8	7.4	NNE	33	SE	7	11	7	13	5.3	60
HUNTSVILLE	605	999.0	1023.2	43	25	33.9	- 9.7	63	26+	10	19	0	27	23	68	6.28	1.37	3.06	10	0	21.4	11	9.6	N	36*	WNW	8	11	10	10	5.3	
MOBILE	211	1016.5	1021.9	56	34	44.9	- 8.2	74	11	18	24	0	11	32	65	6.46	1.00	1.85	10	2	3.0	3	11.5	NNE	29*	NNE	31	10	6	15	5.9	
MONTGOMERY	195	1014.0	1022.5	52	31	41.6	- 6.6	68	2	20	19	0	19	29	65	5.34	0.53	2.03	9	1	1.0	1	7.0	N	31	S	8	10	9	12	5.5	63
ALASKA												B																				
ANCHORAGE	90	997.3	1002.9	30	19	24.8	10.5	45	3	- 1	18	0	29	20	91	1.49	0.55	0.75	9	0	9.8	4	3.8	N	18*	SE	9	3	3	25	8.5	18
ANNETTE	110	1009.5	1013.6	43	35	39.3	3.3	51	3	24	10	0	13	32	77	14.65	2.54	2.37	20	0	T	0	14.6	SE	48*	SSE	30	3	3	25	8.6	
BARROW	22	1013.3	1014.0	3	-10	- 4.0	7.2	27	9	-25	10+	0	31	-12	70	0.03	- 0.14	0.02	2	0	0.8	8	13.2	ENE	35*	NE	18					
BARTER ISLAND	39	1012.9	1014.7	7	- 8	- .5	9.9	35	9	-29	1	0	31	- 7	74	0.21	- 0.08	0.10	5	0	2.3	14	13.5	E	52*	E	19					
BETHEL	125	996.8	998.3	22	8	15.0	10.2	45	21	- 7	5	0	30	11	83	0.34	- 0.68	0.11	7	0	2.9	2	13.4	NNE	33*	SE	8	5	6	20	7.4	
COLD BAY	94	988.3	992.3	36	28	31.8	3.0	43	7	19	30	0	24	28	84	2.01	- 0.58	0.91	13	0	0.5	T	13.7	SSE	59*	SSE	7	0	4	27	9.0	
CORDOVA	40	1003.1	1004.9	39	27	32.9	7.3	49	28	6	18+	0	20	30	90	8.37	1.59	1.53	22	0	3.4	2	7.6	ESE	30*	ESE	2	6	2	23	7.9	
FAIRBANKS	436	990.4	1008.3	14	- 6	4.0	11.7	36	2	-27	18+	0	31	- 3	76	0.38	- 0.16	0.16	6	0	8.8	10	3.7	N	18*	NNE	18	5	5	21	7.5	
JUNEAU	17	1011.2	1012.1	38	28	32.7	4.3	49	2	11	20+	0	21	30	89	4.56	0.34	1.02	22	0	7.2	4	10.9	ESE	55*	ESE	3	3	3	25	8.7	19
KING SALMON	43	995.1	996.6	32	18	24.8	11.6	43	20+	- 9	6+	0	27	21	82	0.90	- 0.12	0.28	9	0	7.7	6	12.3	N	55*	E	20	4	2	25	8.1	
KOTZEBUE	10	1005.7	1006.2	15	- 1	7.1	10.7	35	8	-21	1	0	31	1	74	0.21	- 0.08	0.08	7	0	5.1	11	17.0	E	46*	SE	8	11	3	17	6.5	
MC GRATH	334	991.4	1004.8	8	- 9	- .5	6.5	39	9	-26	25+	0	31	- 9	65	0.92	- 0.09	0.47	7	0	10.8	11	3.0	N	21	S	9	6	5	20	7.2	
NOME	13	1000.7	1001.4	23	8	15.4	9.1	40	21	-14	10	0	30	10	77	0.96	- 0.03	0.22	11	0	8.9	9	14.8	E	46*	NE	17	8	1	22	7.2	27
ST. PAUL ISLAND	22	991.3	992.9	34	26	29.9	3.5	39	8+	15	3	0	25	28	89	2.13	- 0.30	0.89	17	0	7.5	6	18.1	N	51*	SE	7	1	6	24	8.8	
SHEMYA	122	991.7	995.3	35	30	32.8	1.4	41	15	26	14+	0	24	26	77	1.38	- 0.76	0.32	17	0	9.0	3	18.7	WNW	55*	SSE	9	0	11	20	8.1	
YAKUTAT	28	1007.5	1008.5	28	27	32.3	4.2	48	3+	10	17	0	19	31	92	27.89	15.62	6.10	22	0	19.3	5	8.1	E	63*	SE	3	8	0	23	7.5	
ARIZONA																																
FLAGSTAFF	6993	792.2	1023.4	47	13	30.3	- 0.6	58	27	- 5	13+	0	31	12	55	0.36	- 1.29	0.36	2	0	4.6	4	6.5	NE	29*	NNE	30	20	9	2	2.6	
PHOENIX	1117	979.3	1019.3	67	37	51.8	- 0.8	75	5	30	31+	0	7	26	43	T	- 0.85	T	0	0	0.0	0	5.7	ESE	20*	NE	29	26	3	2	1.7	97
PRESCOTT	5014	849.8	1022.3	56	23	39.5	0.2	67	31	15	14+	0	30	16	46	0.01	- 0.99	0.01	1	0	T	T	6.8	SW	50	SW	9	21	9	1	2.4	93
TUCSON	2584	928.9	1018.3	67	39	52.7	1.3	73	24+	27	22+	0	4	24	39	0.08	- 0.84	0.08	1	0	0.0	0	9.1	ESE	30	SE	23	21	7	3	2.2	94
WINSLOW	4880	856.4	1026.7	45	17	30.8	- 2.2	59	9	11	16	0	31	16	65	0.31	- 0.21	0.31	2	0	1.4	1	5.3	SW	38*	SSW	9	24	4	3	2.5	
YUMA	199	1014.4	1019.8	73	43	57.6	- 0.4	81	28	35	25	0	0	22	30	0.00	- 0.32	0.00	0	0			6.8	N	26	N	22	25	4	2	1.9	98
ARKANSAS																																
FORT SMITH	449	1007.1	1024.7	45	23	34.2	- 8.1	70	6	1	23	0	29	21	64	2.24	- 0.58	1.94	3	0	4.0	4	7.0	ENE	33	W	8	13	7	11	5.1	62
LITTLE ROCK	257	1010.9	1024.7	44	23	33.4	- 8.5	67	7	- 1	24	0	27	22	65	2.48	- 1.61	1.59	4	0	9.8	8	8.4	NNE	42	W	7	16	1	14	4.9	58
TEXARKANA	361	1010.7	1024.4	48	29	38.6	- 8.3	70	7	10	23	0	20	27	67	3.63	- 0.92	2.73	4	0	5.3	5	8.9	NE								74
CALIFORNIA																																
BAKERSFIELD	494	1005.7	1023.8	49	34	41.5	- 7.3	61	8	26	26	0	9	37	86	0.08	- 0.89	0.08	1	0	0.0	0	4.8	WNW	21*	NNE	9	3	4	24	8.4	
BISHOP	4108	879.5		60	23	41.5	2.2	71	5	15	23	0	30			0.03	- 1.15	0.03	1	0	0.0	0						13	12	6	4.4	
BLUE CANYON	5280	842.9		53	38	45.3	5.5	69	4	22	10	0	6			1.63	- 8.61	0.98	4	0	5.2	6						10	6	15	6.1	
BURBANK	699	993.4	1019.6	72	41	56.4	0.8	84	29+	35	14	0	0	28	39	0.05	- 2.66	0.05	1	0	0.0	0	5.5	N	20*	NNW	21	21	8	2	2.8	
EUREKA U	43	1020.1		57	44	50.1	1.2	77	30	34	11	0	0			3.20	- 3.51	1.13	11	0	0.0	0	5.1	SE#	45	S	24	3	8	20	7.7	56
FRESNO	326	1011.5	1023.8	45	35	40.0	- 6.4	54	24	27	13	0	5	37	89	0.27	- 1.70	0.25	3	0	0.0	0	3.8	SE	17	NW	8	0	4	27	9.3	15
LONG BEACH	34	1018.3	1019.9	71	43	56.8	1.8	85	29	34	12	0	0	38	59	T	- 1.97	T	0	0	0.0	0	4.3	WNW	37*	W	9	18	10	3	3.2	
LOS ANGELES	97	1015.7	1019.5	70	46	57.9	2.3	85	29	40	12	0	0	38	54	T	- 2.39	T	0	0	0.0	0	7.0	ENE	31*	W	9	18	11	2	2.9	
LOS ANGELES U	312			71	50	60.6	2.4	82	29+	42	12	0	0			T	- 2.87	T	0	0	0.0	0	6.2	NE#	17	E	30+	21	8	2	2.8	92
MT SHASTA R	3544	898.0		48	29	38.4	2.5	60	31+	18	11	0	23			0.94	- 5.28	0.49	7	0	2.0	2						6	8	17	6.9	
OAKLAND	3	1022.6	1023.1	50	40	45.4	- 4.1	61	29	35	18+	0	0	40	83	0.42	- 3.16	0.20	4	0	0.0	0	5.3	E	18*	NE	7	7	14	10	6.1	
POINT ARGUELLO R	367	1006.4		66	39	52.7	0.6	82	28	31	11	0	4			0.28	- 1.82	0.28	2	0	0.0	0	6.0		23*	NW	20	15	10	6	3.8	
RED BLUFF	341	1010.8	1024.0	50	37	43.4	- 3.7	64	23+	30	24+	0	3	36	83	0.46	- 3.75	0.32	7	0	0.0	0	6.4	NNW	24	N	10	3	5	23	8.2	36
SACRAMENTO	17	1023.2	1024.5	46	37	41.1	- 6.3	52	23+	26	11	0	4	40	97	0.45	- 2.79	0.22	4	0	0.0	0	3.1	SE	15	W	9	2	3	26	9.0	19
SACRAMENTO U	23			47	38	42.5	- 5.3	56	23	30	11	0	2			0.38	- 3.17	0.25	4		0.0	0										
SANDBERG R	4517	866.5		52	39	45.4	2.7	65	28	26	12+	0	6			0.06	- 2.43	0.06	1	0	0.6	T	13.8	ENE	35	E	29+	15	9	7	3.8	
SAN DIEGO	13	1015.4	1018.8	71	46	58.5	0.9	88	29	41	14	0	0	38	55	0.10	- 1.95	0.10	2	0	0.0	0	4.6	NW	20	W	9	25	3	3	2.5	89
SAN FRANCISCO	8	1022.4	1023.2	53	39	46.3	- 3.8	64	8	33	17+	0	0	40	81	0.55	- 3.54	0.26	6	0	0.0	0	6.0	E	31	WSW	8	6	8	17	6.7	
SAN FRANCISCO U	52			53	43	48.3	- 4.2	61	31	37	16+	0	0			0.87	- 3.40	0.40	5	0	0.0	0	6.5	N#	25	NW	8					74
SANTA CATALINA	1568	963.2		65	55	59.9		78	28	45	12	0	0			0.13		0.13	1	0	0.0	0						19	10	2	2.9	
SANTA MARIA	238	1012.2	1021.0	68	34	50.7	- 1.7	79	28	26	11	0	13	36	68	0.13	- 2.45	0.13	2	0	0.0	0	6.0	ESE	21*	N	21	21	8	2	3.0	
STOCKTON	28	1022.8	1024.5	43	35	39.2		52	22	28	11	0	6	37	94	0.04		0.02	2	0	0.0	0	4.7	SE	15*	SE	8	0	2	29	9.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
COLORADO	Ft.	Mb.	Mb.	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ALAMOSA	7536	772.4		39	- 3	18.4	- 0.8	48	24	-15	14	0	31			0.04	- 0.21	0.03	2	0	0.9	T										
COLORADO SPRINGS	6173	811.6	1023.5	40	14	27.2	- 4.5	60	25	- 7	13	0	31	9	52	0.62	0.38	0.42	3	0	9.2	6	8.1	NNE	35*	WNW	7	15	8	8	4.4	
DENVER	5283	839.2	1022.2	44	13	28.5	- 4.6	64	6	-11	11	0	31	12	58	0.51	0.04	0.24	7	0	5.9	2	8.1	S	43	W	7+	12	9	10	5.0	76
GRAND JUNCTION	4849	865.4	1027.4	40	15	27.1	- 2.0	51	1	- 1	13	0	31	13	60	0.45	- 0.12	0.25	3	0	7.0	3	3.9	SE	20	E	10	13	7	11	5.0	63
PUEBLO	4639	859.3	1024.5	42	12	26.7	- 6.5	65	25	-10	14	0	31	13	63	0.44	0.14	0.32	4	0	5.9	4	7.2	WSW	34	NW	7	16	9	6	3.8	80
CONNECTICUT																																
BRIDGEPORT	7	1017.1	1017.9	34	22	27.7	- 5.5	54	8	4	31+	0	29	19	71	2.16	- 1.35	0.65	10	0	16.2	6	13.7	WNW	35*	SSE	9	10	7	14	5.7	
HARTFORD	169	1010.3	1016.4	30	13	21.5	- 8.0	54	9	- 8	31	0	31	14	75	2.42	- 1.05	1.07	12	0	16.1	7	7.8	N	32	S	9	10	6	15	6.2	56
NEW HAVEN	6	1016.6		34	20	26.7	- 5.7	53	9	- 1	31	0	30			2.41	- 1.61				18.0	7	8.9		35	SE	9					
DELAWARE																																
WILMINGTON	78	1015.8	1019.0	36	21	28.4	- 6.7	55	8	5	31	0	30	20	71	1.85	- 1.18	0.75	6	1	8.0	6	8.5	WNW	30*	WSW	8	13	5	13	5.3	
DIST.OF COLUMBIA																																
WASHINGTON U	72			39	27	33.1		58	26	13	31+	0	20			1.89	- 0.88	0.81	7	0												
WASH NATL AP	14	1017.5	1019.7	39	24	31.1	- 7.0	53	8	10	31	0	28	20	64	1.72	- 1.06	0.64	8	0	6.4	6	8.5	NW	30	WSW	8	14	3	14	5.3	60
FLORIDA																																
APALACHICOLA U	13	1018.8		57	41	49.3	- 6.5	70	27+	28	19	0	4			3.17	0.21	1.37	9	2	0.0	0	8.5		27	N	31+	11	5	15	5.7	63
DAYTONA BEACH	31	1018.6	1020.4	65	45	54.8	- 5.5	82	13	30	25	0	1	46	75	2.17	0.22	0.75	7	0	0.0	0	9.6	NW	27*	N	16	7	6	18	7.1	
FORT MYERS	13	1019.1		71	48	59.4	- 5.6	82	14	39	25+	0	0			2.27	0.98	1.18	6	0	0.0	0	9.2		29*	ENE	31+	8	11	12	5.9	
JACKSONVILLE	24	1019.1	1020.6	59	39	49.0	- 7.1	76	14	26	19	0	7	38	70	3.60	1.38	1.83	5	0	0.0	0	9.2	NW	62	N	31	8	3	20	6.9	60
KEY WEST	5	1017.8	1019.0	71	62	66.7	- 3.9	84	14	55	19	0	0	58	76	1.36	- 0.33	0.85	5	1	0.0	0	11.8	NNE	30	NE	17	8	11	12	6.1	64
LAKELAND U	214			65	47	56.2	- 6.2	83	14	34	25+	0	0			2.08	0.22	1.18	10	0	0.0	0	8.0					9	9	13	5.8	48
MIAMI BEACH	9			72	59	65.8	- 4.5	80	14	44	25	0	0			1.94	0.16	0.77	6		0.0	0	12.8	N				14	7	10	4.8	64
MIAMI	7	1017.6	1018.9	73	55	63.5	- 4.6	85	14	43	25	0	0	56	79	4.26	2.59	2.42	7	3	0.0	0	7.3	NW	24*	NE	17	8	9	14	5.9	
ORLANDO	106	1015.5	1020.2	67	46	56.5	- 4.9	84	14	33	25	0	0	46	73	2.26	0.37	1.03	8	0	0.0	0	10.0	NNE	28*	WNW	23	7	11	13	6.5	
PENSACOLA	13			56	35	45.6		71	11	24	24	0	14			6.21		2.21	11	2	T	0	8.9	N	39	N	31					46
TALLAHASSEE	58	1018.8	1021.7	57	34	45.3	- 8.8	74	12	22	20	0	13	34	69	7.04	3.60	3.11	9	2	0.0	0	9.1	N	23*	N	14	9	6	16	6.1	
TAMPA	19	1019.1	1020.7	66	44	54.9	- 7.4	79	14	31	19	0	1	46	76	2.31	0.42	1.20	8	0	0.0	0	11.9	N	27*	W	31+	8	7	16	6.7	47
WEST PALM BEACH	15	1018.6	1019.7	72	52	62.2	- 6.0	86	14	39	25	0	0	53	76	4.86	2.29	3.33	5	1	0.0	0	9.1	NW	29*	ENE	30	10	8	13	5.7	
GEORGIA																																
ATHENS	803	990.8	1020.8	47	27	37.1	- 7.5	62	26	12	19	0	27	26	68	5.79	1.26	2.09	8	0	2.0	2	8.4	WNW	23*	WNW	14	14	5	12	5.0	
ATLANTA	1005	978.0	1021.6	44	27	35.5	- 8.6	61	26	11	19	0	25	23	65	5.86	1.48	2.28	8	1	2.5	2	8.7	NW	38*	E	31	14	4	13	5.1	67
AUGUSTA	143	1013.9	1020.9	51	28	39.5	- 7.7	66	26	16	19	0	26	28	69	5.39	2.06	1.35	7	0	T	0	7.1	NW	23*	NW	18+	14	4	13	5.3	
COLUMBUS	385	1006.9		52	30	40.7	- 7.0	64	26	15	19	0	25			4.88	0.32	1.47	7	0	T	T	8.3		29*	NNE	31	10	8	13	5.4	
MACON	356	1007.3	1021.4	52	31	41.4	- 7.6	64	27+	15	19	0	21	26	60	5.11	1.06	1.48	6	1	0.5	1	8.1	NW	29	NW	8	11	9	11	5.3	64
ROME	637	998.3		45	23	33.9	- 8.5	63	26	8	19	0	28			5.46	0.33	2.41	10	0	7.4	5						14	5	12	5.0	
SAVANNAH	48	1018.1	1020.9	55	33	43.7	- 7.7	66	27+	20	19	0	18	30	64	1.77	- 1.04	0.66	6	0	0.0	0	10.2	NE	28	NW	13	11	4	16	5.7	63
THOMASVILLE U	283			55	36	45.5	- 8.4	71	12	20	19	0	8			3.90	0.56	1.74	9	2	0.0	0										
HAWAII																																
HILO	31	1014.3	1015.1	82	64	73.1	1.6	85	26+	62	26+	0	0	64	76	0.77	-14.41	0.32	13	0	0.0	0	8.8	SW	28	NNE	22+	12	13	6	5.1	35
HONOLULU	7	1014.9	1015.2	81	67	74.0	0.4	84	13+	61	24	0	0	63	70	1.43	- 1.56	1.03	9	0	0.0	0	7.4	N	26	N	22	14	8	9	4.8	62
KAHULUI	44	1012.0	1015.1	81	65	73.2		85	5+	57	24	0	0	65	78	0.92		0.39	8	0	0.0	0	9.0	NE	26*	NW	22	14	12	5	4.1	67
LIHUE	115	1010.0	1015.8	80	65	72.6	0.4	84	9	60	25	0	0	64	77	2.10	- 3.08	1.34	11	0	0.0	0	8.6	WNW	26	NE	31+	12	9	10	4.6	68
IDAHO																																
BOISE	2838	928.7	1028.5	34	22	28.1	- 4.1	43	6	10	11	0	31	25	88	1.02	- 0.30	0.44	8	0	5.5	2	4.4	SE	29	NW	6	4	4	23	8.2	41
IDAHO FALLS 42NW R	4790			27	1	13.9	- 4.9	38	6	-27	13	0	31			0.44	- 0.17	0.28	6				3.2	NNW	31A	NW	21					
IDAHO FALLS 46W R	4933	854.1		27	1	14.4	- 6.4	37	19+	-20	11	0	31			0.52	- 0.07	0.22	10	0	8.3	6	2.5	NNE	18A	WSW	25					
LEWISTON	1413	972.4		39	29	33.9	- 1.0	53	31+	17	10	0	26			1.50	0.13	0.43	17	0	7.2	4						3	2	26	8.8	
POCATELLO	4444	869.3	1029.3	31	12	21.4	- 6.0	42	17	-10	11	0	31	19	89	1.22	0.22	0.45	12	0	17.4	7	6.1	NE	43	SW	6	2	10	19	7.9	35
ILLINOIS																																
CAIRO U	314	1010.2		37	22	29.6	- 9.9	66	6	8	24	0	24			1.39	- 2.28	0.50	5	1	6.0	6	9.0	NW	35	W	7	14	7	10	4.5	72
CHICAGO O HARE	658	994.9	1020.9	23	3	13.3		56	7	-16	20	0	31	7	77	0.73		0.30	9	0	8.9	5	9.1	WNW	21*	WSW	13	15	4	12	5.2	
				26	10	17.9	-11.3	59	7	- 9	20	0	31	10	71	0.76	- 1.14	0.27	8	0	7.9	4	10.2	SW	28	S	7	11	6	14	5.5	55

See footnotes at end of table

State and Station	Elevation (ground)	Pressure: Station	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 90°F. or above	Temperature: No. of days Min. 32°F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .01 inch or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile Speed	Wind: Fastest mile Direction	Wind: Fastest mile Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
ILLINOIS																																
MOLINE	582	999.2	1022.8	22	5	13.8	-13.6	55	7	-22	21	0	31	7	74	0.94	- 0.71	0.32	7	0	9.7	6	9.3	WNW	26	NW	27	15	3	13	4.8	62
PEORIA	652	1000.0	1023.6	23	8	15.5	-13.6	57	7	-18	21	0	30	8	73	0.78	- 1.16	0.29	6	0	6.1	3	8.2	WNW	26	W	9+	13	6	12	5.2	62
ROCKFORD	728	992.2	1020.9	22	4	13.2	-12.4	55	7	-20	21+	0	31	6	72	0.79	- 0.91	0.31	6	0	8.6	7	8.4	NW	22*	NW	9	15	3	13	4.8	
SPRINGFIELD	588	998.7	1023.2	28	10	18.9	-12.6	65	7	-11	21	0	29	10	69	0.59	- 1.30	0.25	6	0	5.2	3	10.7	W	36	W	8	13	7	11	5.1	73
INDIANA																																
EVANSVILLE	381	1008.6	1023.6	35	14	24.2	-11.9	64	7	- 9	19	0	29	15	68	1.19	- 1.89	0.56	7	0	8.2	7	7.5	NW	30	S	8	10	10	11	5.3	54
FORT WAYNE	791	987.9	1020.8	26	12	19.3	- 9.6	58	7	-10	20	0	31	13	77	0.84	- 1.25	0.35	12	0	6.4	4	10.4	WSW	32	SW	24	8	8	15	6.5	43
INDIANAPOLIS	793	990.5	1022.1	27	10	18.5	-12.6	62	7	-14	21	0	30	11	72	0.86	- 1.82	0.33	9	1	7.8	4	9.2	WSW	31*	SW	8	9	10	12	5.8	57
SOUTH BEND	768	990.6	1019.9	27	12	19.4	- 9.3	56	7	-12	31	0	31	13	76	1.90	- 0.29	0.41	21	0	25.0	13	11.3	SW	25*	W	9	5	5	21	7.6	
IOWA																																
BURLINGTON	694	996.6	1023.7	25	8	16.3	-12.1	56	7+	-15	21	0	30	8	72	0.83	- 0.77	0.31	6	0	10.1	6	11.1	NW	33	W	8	14	3	14	5.1	64
DES MOINES	948	990.9	1023.9	24	7	15.2	-11.3	59	6	-16	22	0	31	7	71	0.54	- 0.60	0.20	4	0	7.6	4	10.7	NNW	40	NW	8	12	4	15	5.4	55
DUBUQUE	1065	995.3		20	4	11.9	-11.6	49	7	-16	21	0	31			0.73	- 1.17	0.45	4	0	8.1	6			25*	WSW	13	14	4	13	5.2	
SIOUX CITY	1095	980.5	1024.3	26	5	15.5	- 9.0	61	5	-17	21	0	31	7	70	0.48	- 0.26	0.24	6	0	5.9	4	10.7	NW	51	NW	8	9	7	15	5.8	59
WATERLOO	868	988.1	1022.0	20	1	10.4	-12.8	50	6	-27	21	0	31	6	76	0.52	- 0.61	0.17	5	0	7.0	5	10.1	NW	30*	NNW	27+	11	8	12	5.6	
KANSAS																																
CONCORDIA	1470	972.2	1024.7	33	14	23.2		62	6	- 8	14	0	31	12	65	0.20		0.14	5	0	3.0	2	12.8	WSW	45	NW	8	11	6	14	5.5	56
DODGE CITY	2594	932.5	1024.5	38	15	26.5	- 8.2	66	5	- 4	12	0	31	14	66	0.64	0.17	0.44	5	0	7.0	6	12.9	NNW	46	NW	7	15	4	12	4.9	68
GOODLAND	3645	891.6	1024.2	37	11	24.1	- 6.3	68	5	-16	14	0	31	13	69	0.41	- 0.03	0.16	5	0	10.6	5	12.8	WSW	52*	NNW	7	13	7	11	5.1	
TOPEKA	877	987.4	1025.1	34	12	23.4	-10.0	70	6	- 5	23	0	30	12	65	0.22	- 1.17	0.15	4	0	3.6	2	10.8	W	61	NW	8	11	6	14	5.5	62
WICHITA	1321	973.5	1024.6	37	17	26.6	- 9.2	63	6	- 2	22	0	31	17	71	0.34	- 0.60	0.31	3	0	4.7	4	11.0	S	54	NW	8	11	8	12	5.4	56
KENTUCKY																																
COVINGTON	869	988.2	1021.4	31	15	22.9	-11.4	60	7	-11	21	0	30	15	74	1.08	- 1.67	0.48	9	1	7.6	3	9.0	WSW	28*	WSW	8	8	11	12	5.9	
LEXINGTON	979	985.2	1022.3	33	18	25.5	-10.4	62	7	- 4	19	0	30	17	71	0.81	- 2.64	0.28	9	0	8.2	5	8.0	WNW	23*	SW	8+	9	11	11	5.4	
LOUISVILLE	474	1002.6	1022.6	35	18	26.7	- 9.1	62	7	- 1	19	0	29	16	64	1.06	- 2.16	0.32	10	0	7.1	3	8.1	W	29	S	8	11	9	11	5.6	53
LOUISIANA																																
ALEXANDRIA	92	1019.3	1024.0	52	29	40.8		73	26	12	24	0	24	30	71	3.55		1.33	9	0	0.4	T	6.8	NE	25	NW	8	9	7	15	6.4	
BATON ROUGE	64	1020.0	1023.2	56	35	45.2	- 8.5	75	11	19	24	0	10	32	65	5.18	0.08	1.93	9	1	T		8.8	N	25	NW	22+	9	4	18	6.6	
LAKE CHARLES	14	1022.0	1023.5	56	37	46.1	- 8.5	75	11	21	24+	0	8	35	69	3.36	- 2.40	1.63	9	0	T	T	9.9	NNE	23*	NNE	14	9	6	16	6.4	
NEW ORLEANS	3	1020.5	1022.8	56	36	46.1	- 8.8	76	11	23	24	0	11	38	76	5.25	1.15	2.48	10	1	2.7	3	8.8	NE	23*	N	14	8	5	18	6.7	
NEW ORLEANS AUDUBON	6	1015.5		57	40	48.3		76	11	25	24	0	8			5.73		3.07	10	1	4.5	4	5.7	NW	17	NW	8	11	6	14	6.0	40
SHREVEPORT	252	1015.2	1024.7	50	30	39.9	- 9.7	71	26	9	23	0	20	28	68	2.99	- 1.95	1.34	6	0	3.2	3	10.9	NNE	32	NW	7	11	7	13	5.7	57
MAINE																																
CARIBOU	624	988.4		16	1	8.7	- 6.8	37	9	-16	31	0	31			0.74	- 1.69	0.44	8	0	6.5	4						9	9	13	6.2	
PORTLAND	61	1011.0	1015.1	27	6	16.6	- 9.2	50	9	-21	31	0	31	9	69	2.16	- 1.69	0.71	13	0	19.8	9	9.0	N	45	E	9	11	6	14	5.5	68
MARYLAND																																
BALTIMORE	146	1014.6	1019.5	37	21	28.8	- 7.0	53	8	2	31	0	30	18	65	2.08	- 0.91	0.90	6	0	9.7	8	8.9	WNW	38	W	8	14	3	14	5.1	64
BALTIMORE U	14			38	27	32.2	- 6.8	54	8	12	20	0	22			2.12	- 1.04	0.90	7													
MASSACHUSETTS																																
BLUE HILL OBS R	629	989.3		29	16	22.7	- 7.3	50	9	- 1	21	0	30			3.35	- 0.61	0.83	13	0	25.2	11	14.7	W	43	WNW	30					55
BOSTON	15	1010.7	1015.6	31	20	25.9	- 7.4	52	9	3	21	0	30	15	67	3.03	- 0.60	0.74	11	0	17.7	7	14.7	WNW				11	7	13	5.6	59
NANTUCKET	43	1014.8	1015.3	36	25	30.8	- 4.8	52	9	10	21	0	27	20	67	4.56	0.63	1.66	16	0	24.7	14	14.6	NW	40	NW	19	9	7	15	6.3	54
PITTSFIELD	1170			26	11	18.6	- 6.7	47	9+	- 8	31+	0	31			2.08	- 1.17	1.18	11		16.8	8										
WORCESTER	986	977.4	1014.9	27	14	20.2	- 7.0	49	9	- 3	21	0	31	14	76	2.38	- 1.21	1.04	10	0	16.7	10	11.1	W	31*	WNW	30+	12	5	14	5.7	
MICHIGAN																																
ALPENA	689	990.9		27	10	18.1	- 6.5	43	8	-11	31	0	31			1.85	0.01	0.51	18	0	25.5	9	7.2	SW	25	NW	20	4	7	20	7.7	51
DETROIT	619	991.1	1018.9	29	19	23.8	- 6.1	51	7	5	30+	0	30	17	75	1.37	- 0.71	0.48	13	0	10.3	5	11.0	W	33	NW	18+	6	8	17	6.6	44
DETROIT M WAYNE CO	633	994.2	1019.3	28	14	20.9	- 8.0	51	7	- 8	31	0	31	14	73	1.12	- 0.80	0.39	12	0	8.9	5	6.9	SW				8	7	16	6.5	
DETROIT WILLOW RUN	711	989.4	1018.9	30	17	23.2	- 6.2	53	7	- 6	31	0	31	17	77	1.00	- 0.98	0.40	10	0	8.9	5	10.2	SW	36*	NW	18	10	5	16	6.3	
FLINT	766	990.3	1019.3	29	13	20.8	- 6.1	55	7	-11	31	0	31	15	75	0.79	- 1.01	0.19	14	0	12.0	6	9.8	SW	27*	NW	18+	10	7	14	6.2	
GRAND RAPIDS	689	992.0	1018.7	29	14	21.3	- 6.7	56	7	- 6	31	0	31	18	86	1.54	- 0.49	0.39	19	0	21.6	9	8.8	SSW	30	NW	24+	6	7	18	7.4	33

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
				Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max. 90 F. or above	No. of days: Min. 32 F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .01 inch or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile: Speed	Fastest mile: Direction	Fastest mile: Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	Ft.	Station Ø	Sea level	F.	F.	F.	F.	F.		F.				F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
MICHIGAN																																
LANSING	852	984.8	1018.6	29	12	20.6	- 6.9	59	7	-10	31	0	31	17	81	0.93	- 1.06	0.32	10	0	8.7	6	7.2	SW	29	SW	20+	7	9	15	6.5	37
MARQUETTE U	677	989.5		25	13	18.9	- 5.2	42	8	- 2	30+	0	31			2.36	0.44	0.55	18	0	27.8	15	9.2	W#	35	SW	31	5	8	18	7.2	41
MUSKEGON	627	994.7	1018.7	30	16	22.8	- 6.1	54	7	- 8	31	0	31	19	81	3.12	1.12	0.63	22	0	82.6	34	11.8	NW	30*	SW	13	0	3	28	9.1	
SAULT STE MARIE	721	993.0	1017.1	23	9	16.3	- 4.1	40	8+	- 6	30	0	29	12	83	2.34	0.06	0.50	20	0	41.3	22	10.2	E	38*	NW	20	3	3	25	8.1	37
MINNESOTA																																
DULUTH	1426	976.5	1020.3	17	3	9.6	- 4.4	38	8+	-18	20	0	31	3	73	1.08	- 0.08	0.69	10	0	15.9	8	11.6	NW	40	NW	14	8	8	15	6.2	54
INTERNATIONAL FALLS	1179	976.9	1020.8	12	- 6	3.1	- 6.3	38	5	-30	16	0	31	- 3	73	1.19	0.35	0.52	10	0	15.1	14	10.5	W	29*	NNE	8	11	5	15	5.9	
MINNEAPOLIS	822	986.7	1022.3	18	2	10.0	- 7.8	43	7+	-20	16	0	31	2	69	0.60	- 0.26	0.44	7	0	7.6	5	8.9	NW	28	NNW	8	9	5	17	6.5	52
ROCHESTER	1297	971.1	1021.9	17	2	9.6	-10.0	44	7	-20	21+	0	31	4	76	0.39	- 0.58	0.12	7	0	8.3	5	12.9	NW	28*	W	13+	9	8	14	6.2	
ST CLOUD	1034	981.2		17	- 1	8.0	- 8.6	41	5	-24	20	0	31			0.66	- 0.07	0.48	9	0	9.2	7						6	8	17	0.7	
MISSISSIPPI																																
JACKSON	305	1010.9	1023.5	48	29	38.6		69	26+	13	24	0	21	27	67	4.39		1.34	12	0	3.1	2	8.5	NNE	29	NW	11	9	10	12	5.8	
MERIDIAN	292	1009.2	1023.7	50	26	38.0	-10.3	68	26	12	24	0	26	28	72	4.48	- 0.83	1.16	10	2	17.6	14	7.3	N	23*	N	14+	11	7	13	5.9	
VICKSBURG U	234	1014.0		48	30	38.9	-11.4	69	26+	15	24	0	17			4.29	- 0.65	1.11	11	1	2.5	2	7.8		33	NW	8	8	13	10	5.8	50
MISSOURI																																
COLUMBIA	778	993.5	1023.3	31	13	22.1	-11.7	70	6	- 8	22+	0	28	12	68	0.60	- 1.36	0.28	5	0	6.6	4	10.3	WNW	43	NW	8	14	9	8	4.5	72
KANSAS CITY	742	987.4	1024.1	34	17	25.2	- 9.6	68	6	- 3	22	0	29	12	58	0.37	- 1.16	0.31	4	0	4.3	3	9.6	NNE	38	NW	8	12	8	11	5.1	60
ST JOSEPH	809	988.0		32	10	21.0	-10.5	67	6	-13	23	0	30			0.24	- 1.12	0.14	2	0	3.0	2	8.6	NW	44*	WNW	8	15	3	13	4.8	
ST LOUIS	535	998.6	1023.8	31	14	22.2	-12.6	67	6	- 6	21	0	30	11	64	0.67	- 1.30	0.33	6	0	6.4	5	9.5	WNW	35	W	8	14	7	10	4.7	69
ST LOUIS RFC	465			33	18	25.4	-11.1	69	6	- 1	21	0	25			0.57	- 1.60	0.34	5		3.6	3										
SPRINGFIELD	1265	974.3	1023.9	37	16	26.1	-10.6	70	6	- 5	23	0	29	16	69	0.45	- 1.74	0.39	4	0	1.2	1	9.1	WNW	36	W	8	10	7	14	5.8	58
MONTANA																																
BILLINGS	3567	895.2	1024.6	31	14	22.4	- 6.5	56	5	-16	13	0	28	11	68	1.43	0.84	0.38	10	0	21.6	13	14.8	WSW	49	W	25	6	11	14	6.6	55
GLASGOW	2277	946.3		25	7	16.4	- 1.3	56	31	-23	18	0	31			0.30	- 0.15	0.12	10	0	2.5	2						4	9	18	7.5	
GREAT FALLS	3662	892.3	1025.8	32	15	23.5	- 4.8	59	31	-19	13	0	24	9	59	1.02	0.42	0.40	9	0	10.6	9	14.2	SW	51	SW	31	4	6	21	8.0	37
HAVRE	2582	931.7		27	6	16.2	- 4.7	55	31+	-26	18	0	29			0.52	0.05	0.14	7	0	8.4	7	9.2	SW#	40	W	31	6	7	18	7.2	51
HELENA	3893	878.2	1028.1	28	6	16.9	- 7.3	49	31+	-18	11	0	31	9	72	1.27	0.74				21.2	13	6.2	WNW	38	W	25					
KALISPELL	2965	918.6		30	14	22.0	- 0.5	48	31	- 4	11	0	31			1.33	0.00	0.49	14	0	18.3	10	5.0					4	1	26	8.6	
MILES CITY	2629			30	9	19.8	- 3.4	58	5	-24	14	0	31			0.66	0.29	0.27	9	0	6.1	5	11.5	NW	28*	W	23					
MISSOULA	3190	908.7	1028.8	25	11	18.0	- 5.5	43	31	- 5	11	0	31	15	88	1.06	- 0.02	0.36	11	0	20.6	10	4.2	SE	28	SW	6	2	2	27	8.6	18
NEBRASKA																																
GRAND ISLAND	1841	954.9	1024.6	33	11	21.9	- 6.8	65	5	-14	18	0	31	10	63	0.13	- 0.43	0.07	2	0	2.3	2	11.9	NW	46*	NW	8	7	7	17	6.4	
LINCOLN U	1150			30	12	20.9	- 9.7	63	5	- 9	22	0	30			0.33	- 0.57	0.17	4	0	4.2	3	9.9	SW#	56	NW	8	9	10	12	5.8	59
NORFOLK	1544	965.2		28	8	17.9	- 7.3	63	25+	-16	15	0	31			0.24	- 0.49	0.10	6	0	2.8	2						8	8	15	6.2	
NORTH PLATTE	2779	919.8	1023.8	35	9	21.9	- 5.5	64	25	-14	14	0	31	10	66	0.24	- 0.16	0.11	5	0	5.3	2	10.4	NW	47	NW	7	12	7	12	5.5	77
OMAHA	978	982.1	1024.4	28	7	17.8	-10.4	61	6	-13	22+	0	31	7	63	0.48	- 0.32	0.23	6	0	6.6	4	10.0	NNW	49	NW	8	11	8	12	5.5	62
OMAHA N OMAHA AP	1323	973.1		27	7	17.0	- 9.1	59	6	-15	21	0	31			0.47	- 0.42	0.23	7	0	5.9	4						9	9	13	5.7	
SCOTTSBLUFF	3950	882.2	1024.2	36	11	23.8	- 4.3	65	6	-12	14	0	31	11	65	0.31	- 0.09	0.12	7	0	4.8	2	12.1	NW	46*	WNW	6	9	9	13	5.7	
VALENTINE	2587	928.4		31	8	19.8	- 5.3	64	5	-22	18	0	31			0.17	- 0.17	0.08	6	0	2.5	2	10.3	W#	50	NW	7	9	6	16	6.3	67
NEVADA																																
ELKO	5075	850.8	1028.2	38	13	25.1	- 1.3	48	19+	-12	11	0	31	19	81	0.42	- 0.59	0.25	7	0	5.5	4	4.5	E	23*	WNW	20	9	3	19	6.6	
ELY	6257	812.7	1025.9	43	12	27.6	0.8	58	31	-11	11	0	31	15	70	0.20	- 0.48	0.15	4	0	3.5	4	6.6	S	25	SE	9	9	9	13	5.7	79
LAS VEGAS	2162	944.7	1023.7	57	32	44.6	- 0.5	65	29	24	12	0	15	18	37	0.00	- 0.40	0.00	0	0	0.0	0	6.4	W	44*	WSW	9	12	16	3	4.0	94
RENO	4404	868.4	1026.6	49	21	35.1	1.7	61	8	14	24+	0	31	24	73	0.08	- 1.00	0.05	3	0	1.0	1	3.7	SW	32	SW	20	6	9	16	6.4	65
WINNEMUCCA	4299	874.3		45	17	31.0	1.2	53	17	0	11	0	31			0.76	- 0.18	0.44	5	0	4.1	3	5.1	NE	33	W	20	6	8	17	7.0	42
NEW HAMPSHIRE																																
CONCORD	339	1004.3	1015.6	27	7	17.3	- 7.7	47	9	-20	31	0	31	9	70	1.57	- 1.68	0.78	10	0	16.9	11	7.5	NW	28	NW	20	11	4	16	5.7	58
MT WASHINGTON OBS	6262	791.3		7	- 8	- .3	- 9.1	31	8	-32	30	0	31			7.47	1.16	2.35	17	0	48.6	10	39.8	NW#	123Y	NW	20	6	10	15	6.9	41
NEW JERSEY																																
ATLANTIC CITY	58	1016.8	1018.9	38	23	30.5	- 6.1	56	8	9	31	0	28	21	69	2.35	- 0.87	0.95	8	1	7.6	6	10.6	WNW	30*	NW	16+	11	8	12	5.4	48
ATLANTIC CITY U	10			38	26	31.9	- 6.4	54	8	13	20	0	27			2.20	- 1.28	0.87	8				14.1	NW	40*	SE	8					
NEWARK	11	1016.9	1018.1	35	24	29.3	- 5.4	54	8	10	20	0	27	19	67	1.97	- 1.25	0.83	9	0	10.7	7	11.0	WNW	40*	SSW	8	9	10	12	5.5	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days Max. 90 F. or above	Temperature: No. of days Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days .01 inch or more	Precipitation: No. of days With thunderstorms	Precipitation: Snow, Sleet Total	Precipitation: Snow, Sleet Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile Speed	Wind: Fastest mile Direction	Wind: Fastest mile Date	No. of days (sunrise to sunset) Clear, 0-3	No. of days (sunrise to sunset) Partly cloudy, 4-7	No. of days (sunrise to sunset) Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	°F.	°F.	°F.	°F.	F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.								%
NEW JERSEY																																
TRENTON U	56	1010.6		35	24	29.4	- 5.8	56	8	10	20	0	28			1.96	- 0.91	0.84	8	1	10.2	7	8.9	W#	29	SE	8	10	10	11	5.3	65
NEW MEXICO																																
ALBUQUERQUE	5310	851.6	1022.4	48	22	34.8	- 2.2	55	25+	11	14	0	31	14	46	T	- 0.46	T	0	0	T	0	6.9	N	38	NW	7	25	3	3	2.3	90
CLAYTON	4969	847.1		47	17	31.9	- 4.1	73	25	2	14+	0	30			0.08	- 0.27	0.05	3	0	1.6	1						18	3	10	4.0	
RATON	6379	806.3		47	10	28.6	- 2.6	68	25	- 4	14	0	31			0.16	- 0.10	0.12	3	0	1.7	1						20	5	6	3.4	
ROSWELL	3619	896.5		52	18	35.1	- 2.4	72	1	5	23	0	31			0.16	- 0.38	0.13	2	0	1.0	1	7.7	SE	37	NW	29	14	7	10	4.3	73
SILVER CITY	5373	838.0		56	24	40.0		69	25	13	30+	0	27			T		T	0		T	T						23	3	5	2.2	
NEW YORK																																
ALBANY	277	1014.0	1017.6	27	10	18.1	- 8.4	49	9+	-13	31	0	31	11	73	1.86	- 0.73	0.57	13	0	21.0	9	7.1	WNW	33	W	10	5	10	16	6.8	49
BINGHAMTON	1590	954.6	1015.8	24	14	19.3	- 6.5	45	8	- 4	21	0	31	16	89	2.53	- 0.03	1.00	22	1	27.1	13	9.0	WNW	31	NW	15	1	8	22	8.2	27
BUFFALO	705	987.5	1017.2	28	19	23.4	- 3.8	49	8	3	20	0	30	16	75	1.83	- 1.17	0.55	24	0	24.0	13	10.2	WNW	43	SW	24	4	8	19	7.7	34
NEW YORK U	132	1005.5		36	26	31.2	- 4.7	55	8	11	21+	0	22			2.31	- 0.95	0.91	9	0	11.3	6	9.7	W#	26	NW	16	12	9	10	5.0	63
NEW YORK LA GUARDIA	19	1016.0	1017.7	34	27	30.5	- 5.9	55	8	12	21+	0	23	19	63	2.13	- 1.26	0.71	9	2	11.6	7	12.9	WNW	33	NW	10	8	12	11	5.8	
ROCHESTER	543	997.9	1017.8	29	15	21.7	- 7.0	47	8	- 5	31	0	31	16	77	1.90	- 0.48	0.30	18	0	34.6	13	11.7	W	40	NW	10	5	7	19	7.6	39
SCHENECTADY	217			28	14	20.8	- 5.9	48	9	- 8	31	0	30			2.06	- 0.56	0.56	15	0	19.3	11						15	3	13	5.4	
SYRACUSE	417	994.1	1017.0	28	14	20.8	- 7.0	46	8	- 3	31+	0	31	15	77	2.06	- 1.09	0.79	21	0	28.4	14	8.3	WSW	33	W	20+	4	8	19	7.7	37
NORTH CAROLINA																																
ASHEVILLE U	2203	938.1		40	23	31.4	- 8.6	60	26	7	19	0	28			2.44	- 0.48	1.32	9	0	8.9	2	8.5	NW#	33	NW	14	8	11	12	5.8	52
CAPE HATTERAS R	7	1018.5	1019.1	49	33	41.1	- 7.1	68	8	25	21+	0	20	33	72	3.96	- 0.62	1.34	10	0	0.0	0	10.9	N	32*	SSW	8	14	6	11	5.2	57
CHARLOTTE	735	991.4	1020.4	45	26	35.6	- 7.6	64	26	11	19	0	28	22	63	3.04	- 0.58	0.85	9	0	1.1	1	6.9	NE	22	SW	8	13	6	12	5.3	60
GREENSBORO	891	987.6	1020.6	42	23	32.3	- 7.6	58	7	8	21	0	29	20	64	1.54	- 1.59	0.45	9	0	2.6	1	7.8	NNE	32	NE	31	14	6	11	4.9	61
RALEIGH	433	1005.4	1020.1	45	25	34.7	- 7.2	62	26+	8	21	0	28	23	67	3.28	0.26	0.98	9	0	T	T	7.3	NW	25*	SSW	8	14	5	12	5.3	54
WILMINGTON	30	1017.6	1020.4	52	32	42.2	- 6.0	67	27	23	17	0	21	28	62	2.72	- 0.70	0.83	8	0	T	0	8.3	N	37	NE	31	10	10	11	5.6	65
WINSTON SALEM	967	984.0	1020.3	41	24	32.6	- 8.3	57	7	9	21	0	29	20	62	2.14	- 1.21	0.62	9	0	3.2	2	8.2	NNW	25*	WNW	9	15	4	12	5.1	
NORTH DAKOTA																																
BISMARCK	1647	960.0	1024.2	22	0	10.6	- 6.2	52	31	-30	15	0	31	2	66	0.81	0.45	0.40	8	0	9.4	5	9.8	NW	47	NW	12	3	12	16	6.9	51
FARGO	900	985.9	1022.6	18	- 1	8.6	- 5.3	43	5	-28	21	0	31	0	66	0.39	- 0.19	0.33	5	0	4.3	4	10.8	N	46	N	8	6	8	17	7.1	45
WILLISTON	1899	952.7		24	2	12.7	- 5.0	51	31	-29	15	0	31			0.30	- 0.20	0.12	8	0	3.0	2	9.9		49	NW	12	2	11	18	7.4	53
OHIO																																
AKRON	1209	980.2	1019.8	26	15	20.5	- 9.0	48	7	- 6	20	0	31	15	80	1.48	- 0.79	0.47	14	0	11.8	4	10.1	WSW	25*	WNW	18	5	8	18	7.3	
CINCINNATI OBS	761			32	17	24.4	-10.9	60	7	- 4	21+	0	30			0.95	- 1.82	0.32	9	0	7.4	3	6.5	W#	21	SW	8					55
CINCINNATI U	553	997.7		34	19	26.5		62	7	0	21+	0	29			1.00		0.37	9		7.0											
CLEVELAND	777	990.2	1019.2	27	17	21.9	- 7.5	51	7	- 4	20	0	31	15	75	1.05	- 1.29	0.28	16	0	14.1	4	9.9	SW	30	SW	24+	5	8	18	7.4	41
COLUMBUS	812	990.1	1021.5	29	15	21.6	-10.9	58	7	-10	20	0	30	14	74	0.85	- 1.49	0.34	9	0	7.3	4	9.2	W	29	W	27+	5	11	15	7.2	37
COLUMBUS U	724			30	17	23.4	-10.0	58	7	- 5	20	0	30			0.86	- 1.38	0.30	9	0	9.0	5										
DAYTON	997	987.2	1021.2	30	14	21.7	- 9.6	59	7	-12	20	0	30	15	74	0.58	- 1.79	0.18	9	0	7.8	5	10.6	WSW	31	W	8	6	11	14	6.5	56
MANSFIELD	1296			26	13	19.9	- 9.3	54	7	- 6	20+	0	31			0.74	- 1.91	0.28	10	0	7.9	4						7	4	20	7.5	
TOLEDO	676	993.4	1019.9	27	13	19.6	- 8.7	54	7	- 9	31	0	31	14	79	0.83	- 1.12	0.27	16	0	8.1	3	9.7	WSW	28	SW	24	7	7	17	6.5	46
YOUNGSTOWN	1178	974.7	1019.2	26	16	20.6	- 9.8	45	8+	- 5	20	0	31	15	80	1.26	- 1.42	0.31	16	0	23.0	8	10.9	SW	24*	WSW	18	5	8	18	7.4	
OKLAHOMA																																
OKLAHOMA CITY	1280	978.1	1024.3	42	24	33.0	- 6.8	69	6	5	23	0	27	21	65	0.89	- 0.52	0.72	6	1	2.5	1	11.8	N	36	NW	7	13	4	14	5.5	61
TULSA	676	999.3	1024.9	42	21	31.3	- 9.3	72	6	- 3	23	0	29	18	64	0.98	- 0.64	0.67	4	0	0.4	4	10.0	S	29	W	8+	11	7	13	5.7	57
OREGON																																
ASTORIA	8	1020.1	1020.7	51	38	44.5	1.4	63	24	26	11+	0	6	41	87	9.12	+ 4.53	1.35	19	1	0.0	0	8.1	ESE	31*	SSW	24	4	2	25	8.5	
BURNS U	4151			37	18	27.6	- 1.5	50	17	- 6	11	0	31			1.02	- 0.41	0.40	8	0	8.1	4						5	5	21	7.7	
EUGENE	361	1008.9		49	35	42.2	0.4	61	30	23	11	0	11			3.09	+ 3.52	0.75	15	1	0.0	0	5.8		38*	SW	24	2	1	28	9.0	
MEACHAM	4050			34	25	29.8	0.0	42	25	4	11+	0	30			2.60	+ 1.93	0.63	15	0	14.9	6						4	3	24	8.5	
MEDFORD	1298	975.6	1024.6	43	29	35.9	- 2.5	53	25	16	11	0	23	33	95	1.05	+ 2.33	0.41	11	0	T	0	2.7	N	14*	WNW	8	2	5	24	8.7	
PENDLETON	1482	970.4	1025.9	37	28	32.7	- 3.3	60	24	10	11	0	24	29	88	1.29	- 0.20	0.43	17	0	2.0	1	6.4	NW	35*	WNW	20+	1	3	27	9.0	
PORTLAND	21	1017.1	1022.8	44	32	38.0	- 3.3	52	25	20	11	0	16	33	82	3.60	+ 2.78	0.88	16	0	0.0	0	10.3	ESE	30	SE	30+	3	4	24	8.4	27
PORTLAND U	30			48	38	43.2	0.1	59	31	29	11	0	4			4.70	+ 2.72	1.04	13		0.0	0										
ROSEBURG	505	1003.7		49	35	42.1	0.1	63	31+	20	11	0	8			2.00	+ 3.69	0.80	12	1	0.0	0	2.8	S#	26	S	24	1	4	26	9.1	28
SALEM	195	1015.6	1022.9	47	33	39.9	- 1.6	58	31	22	13	0	17	35	86	3.85	+ 3.52	0.64	15	0	0.0	0	6.4	S	23*	SSE	8	4	3	24	8.2	

See footnotes at end of table

CLIMATOLOGICAL DATA

ENGLISH UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
												No. of days						Snow, Sleet				Fastest mile									
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 90° F. or above	Min. 32° F. or below	Average dew point		Total	Departure from normal	Greatest in 24 hours	.01 inch or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
OREGON	Ft.	Mb.	Mb.	F.	°F.	°F.	°F.	°F.		°F.				°F.	%	In.	In.	In.			In.	In.	M.p.h.		M.p.h.							%
SEXTON SUMMIT R	3836	887.6		48	37	42.4	5.1	61	2	21	10	0	9			2.83	- 1.93	0.99	12	0	3.2	1	13.4	S				4	5	22	7.9	
PACIFIC AREA																																
CANTON ISLAND	11	1007.7	1008.0	90	78	84.1	1.0	92	21+	74	30+	23	0	74	73	9.60	7.06	3.77	12	0	0.0	0	7.5	E	35*	WNW	27+	6	5	20	7.4	
ENIWETOK	16	1009.4		86	77	81.4	- 0.6	88	16+	72	23+	0	0			6.54	3.91	1.58			0.0	0	18.9									
TAGUAC GUAM R	361			84	73	78.8	0.1	88	28	66	22+	0	0			16.19	10.08	6.09	22	0	0.0	0	8.6	E#	35	SW	25					51
JOHNSTON	7	1013.1	1013.9	80	75	77.8	- 0.3	81	29+	73	26+	0	0	69	75	0.98	- 2.02	0.23	15	0	0.0	0	15.6	ENE	32	NE	22+	5	18	8	5.7	60
KOROR R	94	1007.6	1010.1	88	75	81.6	0.7	90	5+	73	28+	2	0	76	87	13.40	1.68	3.77	20	2	0.0	0	5.9	NE	21	NE	13	0	0	31	10.0	61
KWAJALEIN		1009.3	1009.4	86	76	81.0	0.2	88	19+	69	19	0	0	75	82	14.11	5.15	6.68	18	1	0.0	0	12.6	ENE	39	SE	21	1	5	25	9.1	
PONAPE R	123	1004.6	1009.0	87	75	81.1	0.9	90	24	72	21	1	0	74	82	9.08	- 9.26	2.84	26	2	0.0	0	7.8	ENE	18	E	4	0	2	29	9.5	54
TRUK MOEN ISLAND	5	1008.1	1008.7	86	77	81.5	0.7	89	25	71	18	0	0	75	81	9.48	- 3.76	2.94	24	2	0.0	0	6.6	NNE	29	SE	6	0	2	29	9.4	38
WAKE	11	1014.9	1015.2	84	75	79.6	0.7	87	1	69	30	0	0	67	67	1.74	- 0.08	1.05	7	0	0.0	0	12.5	ENE	31*	ENE	8	9	15	7	5.5	
YAP R	53	1008.4		86	76	81.1	0.1	89	27+	72	28	0	0			10.17	0.01	2.75			0.0	0	7.9	NE	27	NE	11					
PENNSYLVANIA																																
ALLENTOWN	376	1003.8	1018.6	32	18	24.9	- 6.4	51	8	- 6	31	0	31	17	74	2.19	- 1.08	0.99	7	0	11.0	7	10.7	W	30*	W	20+	10	6	15	5.9	
ERIE	732	991.0	1018.2	30	21	25.3	- 5.4	49	8	4	31	0	31	20	81	3.17	0.56	0.40	27	0	56.0	16	15.9	SW	33*	SW	24	2	1	28	9.2	
HARRISBURG	335	1005.2	1019.3	34	20	26.9	- 6.6	50	8	- 3	31	0	29	16	64	2.36	- 0.55	1.09	8	0	15.8	10	9.3	W	31	W	25+	9	6	16	6.3	50
PHILADELPHIA	5	1016.8	1018.8	35	21	27.9	- 6.0	54	8	4	31	0	31	20	70	1.76	- 1.18	0.84	7	0	8.0	5	9.1	WNW	28	SW	8	12	4	15	5.7	60
PITTSBURGH	1137	988.1	1019.6	28	17	22.4	- 8.3	50	7	- 4	20	0	31	16	77	1.24	- 1.16	0.31	14	1	16.4	7	11.0	WSW	32*	WSW	9	3	5	23	8.1	34
PITTSBURGH U	749			31	21	26.0	- 9.0	54	7	1	20	0	30			1.59	- 0.95	0.40	14		11.8											39
READING U	266	1006.1		34	23	28.9	- 5.8	52	8	2	31	0	28			1.89	- 1.25	0.90	7	0	10.3	7	10.3	W#	45	E	8	11	6	14	5.8	50
SCRANTON	940	982.3	1017.6	30	19	24.3	- 4.6	52	8	- 4	31	0	31	16	71	1.94	- 0.53	1.36	11	0	13.1	6	7.8	SW	23	E	8	4	7	20	7.5	41
WILLIAMSPORT	527	998.6	1018.8	32	19	25.4	- 5.0	47	8	- 3	31	0	31	17	71	2.41	- 0.63	1.14	8	0	15.3	8	9.6	W	25*	W	9	4	11	16	7.3	
RHODE ISLAND																																
BLOCK ISLAND	110	1011.1		35	25	30.0	- 5.9	54	9	7	21	0	25			3.24	- 0.35	0.75	10	0	10.4	4						6	13	12	6.4	
PROVIDENCE	55	1009.8	1015.9	32	18	24.7	- 7.3	53	9	- 1	31	0	31	15	69	2.15	- 1.47	0.76	9	0	19.8	7	10.7	WNW	28*	WNW	21	12	8	11	5.3	59
SOUTH CAROLINA																																
CHARLESTON	41	1018.4	1020.5	56	32	43.8	- 6.2	69	27	20	19	0	20	30	66	3.18	0.33	1.39	7	0	0.0	0	7.0	NNE	40Y	W	18	12	7	12	5.2	51
CHARLESTON U	9			53	38	45.1	- 6.6	65	27+	25	19	0	9			2.69	- 0.05	1.07	7	0	0.0	0	10.2		40	NE	31					
COLUMBIA	217	1007.7	1021.1	50	29	39.6	- 6.8	64	26	15	19	0	25	27	66	5.05	1.53	1.47	7	0	T	T	6.1	WSW	22*	WNW	18+	13	5	13	5.2	64
FLORENCE	146	1014.3	1020.5	50	30	39.6	- 7.6	67	8	19	19+	0	24	26	63	2.44	- 0.62	1.00	7	0	T	T	7.8	NE	27*	NW	18	10	6	15	5.6	
GNVLE SPARTANBURG	957	982.5	1020.8	46	27	36.4	- 7.6	62	27+	14	19	0	26	24	65	3.78	- 0.25	1.25	8	0	2.1	1	7.5	NE	47	NE	31	13	7	11	5.0	62
SOUTH DAKOTA																																
HURON	1282	974.0	1024.2	23	0	11.4	- 8.9	57	4	-26	21	0	31	3	70	0.48	- 0.08	0.43	4	0	6.7	5	12.6	NW	59	NW	8	8	9	14	6.4	52
RAPID CITY	3165	904.9	1024.0	33	12	22.7	- 4.5	64	5	-12	14	0	29	9	61	0.32	0.02	0.18	9	0	3.0	2	11.7	NW	43	NW	8	8	10	13	6.2	48
SIOUX FALLS	1420	968.9	1023.5	25	2	13.2	- 7.9	59	5	-20	18+	0	31	6	73	0.85	0.11	0.67	5	0	11.6	7	10.4	NW	38*	NW	8	8	10	13	6.0	
TENNESSEE																																
BRISTOL	1507	964.6	1021.2	36	20	27.8	-10.5	56	7	4	19	0	29	19	72	2.00	- 1.21	0.90	12	0	12.9	8	4.4	WSW	23*	ENE	31+	8	6	17	6.7	
CHATTANOOGA	670	994.1	1022.8	43	26	34.5	- 7.5	60	26+	10	19	0	26	24	69	5.05	- 0.14	2.02	9	0	9.1	5	7.9	NNE	30	SW	8	10	5	16	5.9	53
KNOXVILLE	950	982.2	1022.6	38	23	30.2	-10.9	51	7	8	19	0	27	22	72	2.86	- 1.37	0.99	9	1	13.2	6	6.8	NE	30	SW	8	10	2	19	6.4	45
MEMPHIS	263	1008.8	1024.3	40	23	31.5	-12.0	64	7	-13	24	0	26	22	69	3.31	- 1.62	2.06	4	1	14.3	14	8.5	N	31	SW	8	13	6	12	5.2	70
MEMPHIS U	271			40	27	33.5	-10.6	63	7	12	24	0	21			3.12	- 1.57	2.09	4	0	13.8	13										
NASHVILLE	577	1002.2	1022.9	39	22	30.5	-10.9	61	7+	5	19	0	28	20	69	2.15	- 2.04	0.95	8	0	13.2	7	8.9	NNW	32	NW	18	10	8	13	5.5	56
OAK RIDGE	905			39	22	30.5	- 9.6	54	7	4	19	0	26			2.99	- 2.91				14.8	11	4.3		36Y							
TEXAS																																
ABILENE	1759	960.4	1023.1	52	30	41.4	- 4.7	75	25	16	23	0	22	28	65	0.44	- 0.82	0.15	7	0	0.7	1	8.8	S	31	S	9+	8	7	16	6.3	44
AMARILLO	3607	892.2	1022.1	45	21	32.5	- 6.3	68	25	5	22	0	31	18	62	0.29	- 0.48	0.19	6	0	3.6	2	12.7	SW	37	N	7	12	8	11	5.2	67
AUSTIN	597	1001.5	1024.1	55	35	45.1	- 7.6	77	7	22	23	0	11	32	66	1.42	- 1.11	0.53	9	0	T	T	9.3	NNE	26	N	30+	9	2	20	6.9	42
BROWNSVILLE	16	1021.8	1022.0	63	45	54.4	- 8.5	84	11	27	24	0	2	46	79	2.74	1.02	1.41	8	1	0.0	0	12.5	NNW	35	S	10	8	5	18	6.7	46
CORPUS CHRISTI	43	1022.0	1023.2	60	42	51.0	- 8.2	83	11	27	23	0	3	41	72	0.86	- 1.22	0.27	8	0	0.0	0	11.5	NNE	35	NNE	11	7	3	21	7.3	37
DALLAS	481	1005.3	1024.5	50	31	40.6	- 7.5	68	25+	10	23	0	18	26	60	1.81	- 0.86	1.39	7	0	2.2	2	10.4	NNW	31	NW	8	10	6	15	6.1	53
DEL RIO	1026	987.8		56	35	45.8		77	26	23	31+	0	8			0.67		0.59	5	0	0.0	0	8.6					8	3	20	6.9	
EL PASO	3918	889.6	1020.2	56	29	42.7	- 2.4	65	9+	17	31+	0	22	19	44	T	- 0.49	T	0	0	T	T	6.1	NNE	43	NW	21	22	2	7	2.9	88
FORT WORTH	544	1002.8	1024.5	51	30	40.3	- 7.4	70	25	10	23	0	21	26	62	1.45	- 0.90	1.18	8	0	2.6	2	9.8	NNW	31*	NW	8	11	5	15	5.9	

CLIMATOLOGICAL DATA

ENGLISH UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 90 F. or above	Temperature: No. of days: Min. 32 F. or below	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 01 inch or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	Ft.	Mb.	Mb.	F.	F.	F.	F.	F		F				F	%	In.	In.	In			In.	In	M.p.h		M p h							%
TEXAS																																
GALVESTON U	7			56	43	49.3	- 7.9	73	11	22	23	0	3			2.80	- 1.09	1.36	6	0	0.0	0	19.0	NE	32	NE	14					47
HOUSTON U	41			58	41	49.4	- 7.1	78	7	22	23	0	4			3.81	- 0.29	1.35	7		0.0	0										
HOUSTON	50	1020.6	1023.3	57	37	47.1	- 9.1	79	7	19	23	0	7	35	69	4.83	- 0.47	1.79	8	0	0.0	0	11.0	N	29*	NNW	22	8	3	20	7.0	61
LAREDO	500	1007.5	1023.2	60	41	50.2	- 9.0	83	7	27	23	0	4	38	67	1.43	- 0.26	0.52	11	0	0.0	0	8.9	ENE	32*	NNW	11	8	4	19	6.9	
LUBBOCK	3243	907.5	1022.5	49	24	36.7	- 4.3	71	25	9	22	0	28	22	64	0.20	- 0.45	0.09	5	0	1.5	1	12.2	S	40*	NNE	29	12	6	13	5.5	
MIDLAND	2854	919.7	1021.0	51	29	40.2	- 5.7	68	25+	18	23	0	22	24	63	0.28	- 0.38	0.18	6	0	T	T	9.8	SW	31*	NE	29	8	10	13	6.2	
PORT ARTHUR	16	1021.4	1023.0	57	36	46.2	- 8.1	77	11	17	23	0	12	37	76	2.89	- 2.20	1.19	8	0	0.0	T	10.6	NNE	33	N	14	9	5	17	6.5	57
SAN ANGELO	1903	953.7	1023.0	52	29	40.8	- 7.9	74	25	18	23	0	24	29	71	0.29	- 0.56	0.14	6	0	0.7	1	7.8	N	24*	NNW	26	10	3	18	6.5	
SAN ANTONIO	792	997.9	1023.6	56	35	45.7	- 8.0	76	7	24	23	0	7	33	65	0.94	- 0.81	0.52	7	0	T	0	8.4	NNE	29	NNW	11	9	2	20	6.9	54
VICTORIA	104	1018.5		58	39	48.8	- 8.4	79	7	23	23	0	4			1.88	- 0.73	0.95	9	0	0.0	0	12.0		45Y		11	8	3	20	7.0	
WACO	500	1002.1	1024.1	51	31	41.2	- 9.1	72	25	14	23	0	20	31	71	1.10	- 1.64	0.41	5	0	1.0	1	12.9	NNW	35*	NW	11+	8	3	20	6.8	
WICHITA FALLS	994	985.7	1024.0	49	28	38.2	- 5.9	73	25	12	23	0	23	26	66	0.89	- 0.56	0.72	7	0	1.3	1	11.0	N	31*	NNW	7	10	4	17	6.0	
UTAH																																
MILFORD	5028	849.5		39	13	26.1	- 2.1	56	19	- 3	13	0	31			0.18	- 0.53	0.12	3	0	2.2	2						6	16	9	5.8	
SALT LAKE CITY	4220	875.3	1029.6	32	17	24.4	- 7.2	44	17	- 5	11	0	31	19	81	0.79	- 0.45	0.31	7	0	12.9	5	6.0	SSE	22	S	9	4	3	24	8.3	38
WENDOVER	4237	878.3		31	20	25.7	- 4.1	40	6	7	12	0	31			0.25	- 0.04	0.16	5	1	1.8	1						5	4	22	7.6	
VERMONT																																
BURLINGTON	331	1001.3	1016.6	21	5	12.9	-10.1	41	9	-19	31	0	31	6	72	0.96	- 1.17	0.38	11	0	4.8	7	8.9	S	36	SE	9	11	4	19	7.0	53
VIRGINIA																																
LYNCHBURG	947	993.9		38	23	30.3	- 8.2	60	7	8	20	0	30			1.51	- 1.63	0.76	7	0	5.5	4	6.8		28	W	18	15	5	11	4.8	58
NORFOLK	26	1018.8	1020.1	42	28	35.2	- 7.3	64	8	17	21	0	23	25	69	2.85	0.11	1.03	8	0	T	0	11.8	NW	46	SE	8	13	6	12	5.2	70
RICHMOND	162	1013.7	1020.1	42	23	32.4	- 7.3	62	26+	7	21	0	30	21	67	2.80	- 0.17	1.21	7	0	0.4	T	7.4	SW	25	NW	18	14	5	12	5.0	63
ROANOKE	1174	976.6	1020.3	38	23	30.5	- 7.9	59	7	10	20	0	30	18	60	1.86	- 1.12	1.07	7	0	10.1	7	10.2	WNW	32*	NW	18	13	7	11	5.2	
WASHINGTON																																
OLYMPIA	190	1014.0	1021.1	48	35	41.6	0.9	57	31+	21	11	0	11	38	87	5.55	- 3.50	1.08	18	0	0.0	0	5.6	SSW	28*	SSW	23	1	3	27	9.0	
SEATTLE TACOMA	400	1007.2	1021.5	46	36	40.8	0.0	56	31+	25	11	0	8	36	86	5.79	- 0.50	1.07	21	0	T	0	7.4	SE	26*	SW	25+	1	4	26	8.9	
SEATTLE U	14			48	41	44.6	0.8	58	31	31	11	0	1			4.94	- 0.48	0.87	21		0.0	0			44	SW	25					13
SPOKANE	2356	954.6	1025.3	31	22	26.5	- 3.1	41	31+	- 5	11	0	30	24	89	2.29	- 0.14	0.51	14	0	19.6	12	6.1	NE	29	SW	25	5	2	24	8.4	25
STAMPEDE PASS R	3958	882.6		32	22	26.6	- 0.4	46	23	10	11	0	31			7.54	- 8.65	1.80	20	0	51.5	60						4	0	27	8.5	
TATOOSH ISLAND R	101	1016.2	1019.1	49	43	46.2	1.8	59	24	37	11+	0	0	41	84	15.13	2.97	3.86	22	0	0.0	0	20.9	ENE	57	S	24+	4	3	24	8.5	19
WALLA WALLA U	949			37	30	33.5	- 4.3	61	23	17	11	0	24			2.00	0.15	0.58	12	0	3.1	2										
YAKIMA	1061	986.3	1026.6	35	24	29.6	- 1.9	51	25	4	11	0	24	25	82	1.00	- 0.12	0.33	9	0	5.9		4.8	WSW	21*	NNE	9	3	2	26	8.5	
WEST INDIES																																
SAN JUAN P.R.	5	1013.7	1016.3	87	71	78.9	2.7	90	27+	67	28	2	0	71	78	0.68	- 4.77	0.21	8	0	0.0	0	6.6	ENE	22	F	31+	11	19	1	4.3	71
SWAN ISLAND	28	1013.9		83	75	78.7	0.0	86	16+	69	24	0	0			1.30	- 4.34	0.54	12	1	0.0	0						1	16	14	6.9	
WEST VIRGINIA																																
BECKLEY	2504	928.7	1021.9	31	16	23.2		56	7	- 3	21+	0	31	17	78	2.41		1.41	12	0	22.1	14	7.9	WNW	25*	SE	31	8	5	18	7.0	
CHARLESTON	939	984.5	1021.5	33	19	26.1	-11.5	59	7	- 2	21	0	29	19	76	1.44	- 1.81	0.59	9	0	12.6	6	6.8	SW	23*	WNW	18+	4	10	17	7.0	
ELKINS	1970	948.1	1020.2	32	14	22.6		57	7	- 9	22	0	31	17	77	1.65		0.46	14	0	14.5	6	7.8	W	35*	WNW	18	3	6	22	8.0	
HUNTINGTON	827	990.7	1022.2	33	18	25.3		60	7	- 5	21	0	30	18	77	1.21	- 1.78	0.47	9	1	8.0	6	6.9	WSW	22*	WSW	8	6	10	15	6.8	
PARKERSBURG U	615			32	19	25.6	-10.2	60	7	0	22+	0	30			1.18	- 1.66	0.40	9	1	8.1	5	7.1		30	W	18					33
WISCONSIN																																
GREEN BAY	682	995.7	1019.5	21	4	12.1	- 9.4	48	7	-16	30	0	31	4	72	0.73	- 0.45	0.40	9	0	4.1	1	9.6	WNW	28	N	26	14	4	13	5.2	60
LA CROSSE	652	995.8	1021.9	20	5	12.5	- 9.3	46	7	-18	20	0	31	6	71	0.49	- 0.66	0.18	8	0	7.6	4	9.4	S	26*	NNW	9	11	6	14	5.9	
MADISON	858	983.4	1020.8	21	2	11.3	-11.3	51	7	-17	23+	0	31	4	71	0.65	- 0.66	0.25	7	0	8.2	6	8.1	WNW	29	W	27	12	3	16	5.9	53
MILWAUKEE	672	994.1	1020.4	22	5	13.2	-11.4	54	7	-15	31	0	31	7	76	0.70	- 0.93	0.32	9	0	12.8	6	10.3	WNW	28	SW	13	12	7	10	4.9	58
WYOMING																																
CASPER	5319	838.9	1022.9	35	15	24.9	- 2.4	52	5	-14	11	0	29	11	60	0.31	- 0.17	0.16	6	0	5.1	2	13.7	SW	37*	WSW	6	9	4	18	6.4	
CHEYENNE	6126	813.7	1022.4	38	15	26.9	- 3.1	57	6+	-11	11	0	29	10	54	0.42	- 0.03	0.16	6	0	6.0	2	14.8	WNW	49	N	7	10	12	9	5.3	78
LANDER	5563	837.7	1025.4	30	8	19.2	- 3.9	55	5	-13	13+	0	31	7	64	0.61	0.19	0.31	4	0	12.9	8	4.2	W	31	NW	7+	11	6	14	6.0	64
SHERIDAN	3942	887.5	1024.8	34	12	23.0	- 3.3	62	5+	-13	11	0	31	13	69	0.91	0.29	0.22	13	0	18.4	7	8.1	NW	52	NW	6	9	8	14	6.3	54

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 70 F. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

Z Sun continuously below horizon.

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: 25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
ALABAMA																																
BIRMINGHAM	186	996.6	1023.0	8.3	- 2.8	2.7	-5.0	18.9	26	-11.7	19	0	25	- 3.3	69	151	23	77	10	0	203	203	3.3	NNE	14.8	SE	7	11	7	13	5.3	60
HUNTSVILLE	184	999.0	1023.2	6.1	- 3.9	1.1	-5.4	17.2	26+	-12.2	19	0	27	- 5.0	68	160	35	78	10	0	544	279	4.3	N	16.1*	WNW	8	11	10	10	5.3	
MOBILE	64	1016.5	1021.9	13.3	1.1	7.2	-4.6	23.3	11	- 7.8	24	0	11	0.0	65	164	25	47	10	2	76	76	5.1	NNE	13.0*	NNE	31	10	6	15	5.9	
MONTGOMERY	59	1014.0	1022.5	11.1	- 0.6	5.3	-3.7	20.0	2	- 6.7	19	0	19	- 1.7	65	136	13	>2	9	1	25	25	3.1	N	13.9	S	8	10	9	12	5.5	63
ALASKA												B																			
ANCHORAGE	27	997.3	1002.9	- 1.1	- 7.2	- 4.0	5.8	7.2	3	-18.3	18	0	29	- 6.7	91	38	14	19	9	0	249	102	1.7	N	8.0*	SE	9	3	3	25	8.5	18
ANNETTE	34	1009.5	1013.6	6.1	1.7	4.1	1.8	10.6	3	- 4.4	10	0	13	0.0	77	372	65	60	20	0	T	0	6.5	SE	21.5*	SSE	30	3	3	25	8.6	
BARROW	7	1013.3	1014.0	-16.1	-23.3	-20.0	4.0	- 2.8	9	-31.7	10+	0	31	-24.4	70	1	- 4	1	2	0	20	203	5.9	ENE	15.6*	NE	18					
BARTER ISLAND	12	1012.9	1014.7	-13.9	-22.2	-18.1	5.5	1.7	9	-33.9	1	0	31	-21.7	74	5	- 2	3	5	0	58	356	6.0	E	23.2*	E	19					
BETHEL	38	996.8	998.3	- 5.6	-13.3	- 9.4	5.7	7.2	21	-21.7	5	0	30	-11.7	83	9	- 17	3	7	0	74	51	6.0	NNE	14.8*	SE	8	5	6	20	7.4	
COLD BAY	29	988.3	992.3	2.2	- 2.2	- 0.1	1.7	6.1	7	- 7.2	30	0	24	- 2.2	84	51	- 15	23	13	0	13	T	6.1	SSE	26.4*	SSE	7	0	4	27	9.0	
CORDOVA	12	1003.1	1004.9	3.9	- 2.8	0.5	4.1	9.4	28	-14.4	18+	0	20	- 1.1	90	213	40	39	22	0	86	51	3.4	ESE	13.4*	ESE	2	6	2	23	7.9	
FAIRBANKS	133	990.4	1008.3	-10.0	-21.1	-15.6	6.5	2.2	2	-32.8	18+	0	31	-19.4	76	10	- 4	4	6	0	224	254	1.7	N	8.0*	NNE	18	5	5	21	7.5	
JUNEAU	5	1011.2	1012.1	3.3	- 2.2	0.4	2.4	9.4	2	-11.7	20+	0	21	- 1.1	89	116	9	26	22	0	183	102	4.9	ESE	24.6*	ESE	3	3	3	25	8.7	19
KING SALMON	13	995.1	996.6	0.0	- 7.8	- 4.0	6.4	6.1	20+	-22.8	6+	0	27	- 6.1	82	23	- 3	7	9	0	196	152	5.5	N	24.6*	E	20	4	2	25	8.1	
KOTZEBUE	3	1005.7	1006.2	- 9.4	-18.3	-13.8	5.9	1.7	8	-29.4	1	0	31	-17.2	74	5	- 2	2	7	0	130	279	7.6	E	20.6*	SE	8	11	3	17	6.5	
MC GRATH	102	991.4	1004.8	-13.3	-22.8	-18.1	3.6	3.9	9	-32.2	25+	0	31	-22.8	65	23	- 2	12	7	0	274	279	1.3	N	9.4	S	9	6	5	20	7.2	
NOME	4	1000.7	1001.4	- 5.0	-13.3	- 9.2	5.1	4.4	21	-25.6	10	0	30	-12.2	77	24	- 1	6	11	0	226	229	6.6	E	20.6*	NE	17	8	1	22	7.2	27
ST. PAUL ISLAND	7	991.3	992.9	1.1	- 3.3	- 1.2	1.9	3.9	8+	- 9.4	3	0	25	- 2.2	89	54	8	23	17	0	191	152	8.1	N	22.8*	SE	7	1	6	24	8.8	
SHEMYA	37	991.7	995.3	1.7	- 1.1	0.4	0.8	5.0	15	- 3.3	14+	0	24	- 3.3	77	35	- 19	8	17	0	229	76	8.4	WNW	24.6*	SSE	9	0	11	20	8.1	
YAKUTAT	9	1007.5	1008.5	- 2.2	- 2.8	0.2	2.3	8.9	3+	-12.2	17	0	19	- 0.6	92	708	397	155	22	0	490	127	3.6	E	28.2*	SE	3	8	0	23	7.5	
ARIZONA																																
FLAGSTAFF	2131	792.2	1023.4	8.3	-10.6	- 0.9	-0.3	14.4	27	-20.6	13+	0	31	-11.1	55	9	- 33	9	2	0	117	102	2.9	NE	13.0*	NNE	30	20	9	2	2.6	
PHOENIX	340	979.3	1019.3	19.4	2.8	11.0	-0.4	23.9	5	- 1.1	31+	0	7	- 3.3	43	T	- 22	T	0	0	0	0	2.5	ESE	8.9*	NE	29	26	3	2	1.7	97
PRESCOTT	1528	849.8	1022.3	13.3	- 5.0	4.2	0.1	19.4	31	- 9.4	14+	0	30	- 8.9	46	T	- 25	T	1	0	T	T	3.0	SW	22.4	SW	9	21	9	1	2.4	93
TUCSON	788	928.9	1018.3	19.4	3.9	11.5	0.7	22.8	24+	- 2.8	22+	0	4	- 4.4	39	2	- 21	2	1	0	0	0	4.1	ESE	13.4	SE	23	21	7	3	2.2	94
WINSLOW	1487	856.4	1026.7	7.2	- 8.3	- 0.7	-1.2	15.0	9	-11.7	16	0	31	- 8.9	65	8	- 5	8	2	0	36	25	2.4	SW	17.0*	SSW	9	24	4	3	2.5	
YUMA	61	1014.4	1019.8	22.8	6.1	14.2	-0.2	27.2	28	1.7	25	0	0	- 5.6	30	0	- 8	0	0	0			3.0	N	11.6	N	22	25	4	2	1.9	98
ARKANSAS																																
FORT SMITH	137	1007.1	1024.7	7.2	- 5.0	1.2	-4.5	21.1	6	-17.2	23	0	29	- 6.1	64	57	- 15	49	3	0	102	102	3.1	ENE	14.8	W	8	13	7	11	5.1	62
LITTLE ROCK	78	1010.9	1024.7	6.7	- 5.0	0.8	-4.7	19.4	7	-18.3	24	0	27	- 5.6	65	63	- 41	40	4	0	249	203	3.8	NNE	18.8	W	7	16	1	14	4.9	58
TEXARKANA	110	1010.7	1024.4	8.9	- 1.7	3.7	-4.6	21.1	7	-12.2	23	0	20	- 2.8	67	92	- 23	69	4	0	135	127	4.0	NE								74
CALIFORNIA																																
BAKERSFIELD	151	1005.7	1023.8	9.4	1.1	5.3	-4.1	16.1	8	- 3.3	26	0	9	2.8	86	2	- 23	2	1	0	0	0	2.1	WNW	9.4*	NNE	9	3	4	24	8.4	
BISHOP	1252	879.5		15.6	- 5.0	5.3	1.2	21.7	5	- 9.4	23	0	30			1	- 29	1	1	0	0	0						13	12	6	4.4	
BLUE CANYON	1609	842.9		11.7	3.3	7.4	3.1	20.6	4	- 5.6	10	0	6			41	-219	25	4	0	132	152						10	6	15	6.1	
BURBANK	213	993.4	1019.6	22.2	5.0	13.6	0.4	28.9	29+	1.7	14	0	0	- 2.2	39	1	- 68	1	1	0	0	0	2.5	N	8.9*	NNW	21	21	8	2	2.8	
EUREKA U	13	1020.1		13.9	6.7	10.1	0.7	25.0	30	1.1	11	0	0			81	- 89	29	11	0	0	0	2.3	SE#	20.1	S	24	3	8	20	7.7	56
FRESNO	99	1011.5	1023.8	7.2	1.7	4.4	-3.6	12.2	24	- 2.8	13	0	5	2.8	89	7	- 43	6	3	0	0	0	1.7	SE	7.6	NW	8	0	4	27	9.3	15
LONG BEACH	10	1018.3	1019.9	21.7	6.1	13.8	1.0	29.4	29	1.1	12	0	0	3.3	59	T	- 50	T	0	0	0	0	1.9	WNW	16.5*	W	9	18	10	3	3.2	
LOS ANGELES	30	1015.7	1019.5	21.1	7.8	14.4	1.3	29.4	29	4.4	12	0	0	3.3	54	T	- 61	T	0	0	0	0	3.1	ENE	13.9*	W	9	18	11	2	2.9	
LOS ANGELES U	95			21.7	10.0	15.9	1.3	27.8	29+	5.6	12	0	0			T	- 73	T	0	0	0	0	2.8	NE#	7.6	E	30+	21	8	2	2.8	92
MT SHASTA R	1080	898.0		8.9	- 1.7	3.6	1.4	15.6	31+	- 7.8	11	0	23			24	-134	12	7	0	51	51						6	8	17	6.9	
OAKLAND	1	1022.6	1023.1	10.0	4.4	7.4	-2.3	16.1	29	1.7	18+	0	0	4.4	83	11	- 80	5	4	0	0	0	2.4	E	8.0*	NE	7	7	14	10	6.1	
POINT ARGUELLO R	112	1006.4		18.9	3.9	11.5	0.3	27.8	28	- 0.6	11	0	4			7	- 46	7	2	0	0	0	2.7		10.3*	NW	20	15	10	6	3.8	
RED BLUFF	104	1010.8	1024.0	10.0	2.8	6.3	-2.1	17.8	23+	- 1.1	24+	0	3	2.2	83	12	- 95	8	7	0	0	0	2.9	NNW	10.7	N	10	3	5	23	8.2	36
SACRAMENTO	5	1023.2	1024.5	7.8	2.8	5.1	-3.5	11.1	23+	- 3.3	11	0	4	4.4	97	11	- 71	6	4	0	0	0	1.4	SE	6.7	W	9	2	3	26	9.0	19
SACRAMENTO U	7			8.3	3.3	5.8	-2.9	13.3	23	- 1.1	11	0	2			10	- 81	6	4	0	0	0										
SANDBERG R	1377	866.5		11.1	3.9	7.4	1.5	18.3	28	- 3.3	12+	0	6			2	- 62	2	1	0	15	T	6.2	ENE	15.6	E	29+	15	9	7	3.8	
SAN DIEGO	4	1015.4	1018.8	21.7	7.8	14.7	0.5	31.1	29	5.0	14	0	0	3.3	55	3	- 50	3	2	0	0	0	2.1	NW	8.9	W	9	25	3	3	2.5	89
SAN FRANCISCO	2	1022.4	1023.2	11.7	3.9	7.9	-2.1	17.8	8	0.6	17+	0	0	4.4	81	14	- 90	7	6	0	0	0	2.7	E	13.9	WSW	8	6	8	17	6.7	
SAN FRANCISCO U	16			11.7	6.1	9.1	-2.3	16.1	31	2.8	16+	0	0			22	- 86	10	5	0	0	0	2.9	N#	11.2	NW	8					74
SANTA CATALINA	478	963.2		18.3	12.8	15.5		25.6	28	7.2	12	0	0			3		3	1	0	0	0						19	10	2	2.9	
SANTA MARIA	73	1012.2	1021.0	20.0	1.1	10.4	-0.9	26.1	28	- 3.3	11	0	13	2.2	68	3	- 62	3	2	0	0	0	2.7	ESE	9.4*	N	21	21	8	2	3.0	
STOCKTON	9	1022.8	1024.5	6.1	1.7	4.0		11.1	22	- 2.2	11	0	6	2.8	94	1		1	2	0	0	0	2.1	SE	6.7*	SE	8	0	2	29	9.6	
COLORADO																																
ALAMOSA	2297	772.4		3.9	-19.4	- 7.6	-0.4	8.9	24	-26.1	14	0	31			1	- 5	1	2	0	23	T						18	8	5	3.4	
COLORADO SPRINGS	1882	811.6	1023.5	4.4	-10.0	- 2.7	-2.5	15.6	25	-21.7	13	0	31	-12.8	52	16	10	11	3	0	234	152	3.6	NNE	15.6*	WNW	7	15	8	8	4.4	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet		Average speed	Prevailing direction	Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground			Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
COLORADO																																
DENVER	1610	839.2	1022.2	6.7	-10.6	- 1.9	-2.6	17.8	6	-23.9	11	0	31	-11.1	58	13	1	6	7	0	150	51	3.6	S	19.2	W	7+	12	9	10	5.0	76
GRAND JUNCTION	1478	865.4	1027.4	4.4	- 9.4	- 2.7	-1.1	10.6	1	-18.3	13	0	31	-10.6	60	11	- 3	6	3	0	178	76	1.7	SE	8.9	E	10	13	7	11	5.0	63
PUEBLO	1414	859.3	1024.5	5.6	-11.1	- 2.9	-3.6	18.3	25	-23.3	14	0	31	-10.6	63	11	4	8	4	0	150	102	3.2	WSW	15.2	NW	7	16	9	6	3.8	80
CONNECTICUT																																
BRIDGEPORT	2	1017.1	1017.9	1.1	- 5.6	- 2.4	-3.1	12.2	8	-15.6	31+	0	29	- 7.2	71	55	- 34	17	10	0	411	152	6.1	WNW	15.6*	SSE	9	10	7	14	5.7	
HARTFORD	52	1010.3	1016.4	- 1.1	10.6	- 5.8	-4.4	12.2	9	-22.2	31	0	31	-10.0	75	61	- 27	27	12	0	409	178	3.5	N	14.3	S	9	10	6	15	6.2	56
NEW HAVEN	2	1016.6		1.1	- 6.7	- 2.9	-3.2	11.7	9	-18.3	31	0	30			61	- 41	0			457	178	4.0		15.6	SE	9					
DELAWARE																																
WILMINGTON	24	1015.8	1019.0	2.2	- 6.1	- 2.0	-3.7	12.8	8	-15.0	31	0	30	- 6.7	71	47	- 30	19	6	1	203	152	3.8	WNW	13.4*	WSW	8	13	5	13	5.3	
DIST. OF COLUMBIA																																
WASHINGTON U	22			3.9	- 2.8	0.6		14.4	26	-10.6	31+	0	20			48	- 22	21	7	0												
WASH NATL AP	4	1017.5	1019.7	3.9	- 4.4	- 0.5	-3.9	11.7	8	-12.2	31	0	28	- 6.7	64	44	- 27	16	8	0	163	152	3.8	NW	13.4	WSW	8	14	3	14	5.3	60
FLORIDA																																
APALACHICOLA U	4	1018.8		13.9	5.0	9.6	-3.6	21.1	27+	- 2.2	19	0	4			81	5	35	9	2	0	0	3.8		12.1	N	31+	11	5	15	5.7	63
DAYTONA BEACH	9	1018.6	1020.4	18.3	7.2	12.7	-3.1	27.8	13	- 1.1	25	0	1	7.8	75	55	6	19	7	0	0	0	4.3	NW	12.1*	N	16	7	6	18	7.1	
FORT MYERS	4	1019.1		21.7	8.9	15.2	-3.1	27.8	14	3.9	25+	0	0			58	25	30	6	0	0	0	4.1		13.0*	ENE	31+	8	11	12	5.9	
JACKSONVILLE	7	1019.1	1020.6	15.0	3.9	9.4	-3.9	24.4	14	- 3.3	19	0	7	3.3	70	91	35	46	5	0	0	0	4.1	NW	27.7	N	31	8	3	20	6.9	60
KEY WEST	2	1017.8	1019.0	21.7	16.7	19.3	-2.2	28.9	14	12.8	19	0	0	14.4	76	35	- 8	22	5	1	0	0	5.3	NNE	13.4	NE	17	8	11	12	6.1	64
LAKELAND U	65			18.3	8.3	13.4	-3.4	28.3	14	1.1	25+	0	0			53	6	30	10	0	0	0	3.6					9	9	13	5.8	48
MIAMI BEACH	3			22.2	15.0	18.8	-2.5	26.7	14	6.7	25	0	0			49	4	20	6		0	0	5.7	N				14	7	10	4.8	64
MIAMI	2	1017.6	1018.9	22.8	12.8	17.5	-2.6	29.4	14	6.1	25	0	0	13.3	79	108	66	61	7	3	0	0	3.3	NW	10.7*	NE	17	8	9	14	5.9	
ORLANDO	32	1015.5	1020.2	19.4	7.8	13.6	-2.7	28.9	14	0.6	25	0	0	7.8	73	57	9	26	8	0	0	0	4.5	NNE	12.5*	WNW	23	7	11	13	6.5	
PENSACOLA	4			13.3	1.7	7.6		21.7	11	- 4.4	24	0	14			158		56	11	2	T	0	4.0	N	17.4	N	31					46
TALLAHASSEE	18	1018.8	1021.7	13.9	1.1	7.4	-4.9	23.3	12	- 5.6	20	0	13	1.1	69	179	91	79	9	2	0	0	4.1	N	10.3*	N	14	9	6	16	6.1	
TAMPA	6	1019.1	1020.7	18.9	6.7	12.7	-4.1	26.1	14	- 0.6	19	0	1	7.8	76	59	11	30	8	0	0	0	5.3	N	12.1*	W	31+	8	7	16	6.7	47
WEST PALM BEACH	5	1018.6	1019.7	22.2	11.1	16.8	-3.3	30.0	14	3.9	25	0	0	11.7	76	123	58	85	5	1	0	0	4.1	NW	13.0*	ENE	30	10	8	13	5.7	
GEORGIA																																
ATHENS	245	990.8	1020.8	8.3	- 2.8	2.8	-4.2	16.7	26	-11.1	19	0	27	- 3.3	68	147	32	53	8	0	51	51	3.8	WNW	10.3*	WNW	14	14	5	12	5.0	
ATLANTA	306	978.0	1021.6	6.7	- 2.8	1.9	-4.8	16.1	26	-11.7	19	0	25	- 5.0	65	149	38	58	8	1	64	51	3.9	NW	17.0*	E	31	14	4	13	5.1	67
AUGUSTA	44	1013.9	1020.9	10.6	- 2.2	4.2	-4.3	18.9	26	- 8.9	19	0	26	- 2.2	69	137	52	34	7	0	T	0	3.2	NW	10.3*	NW	18+	14	4	13	5.3	
COLUMBUS	117	1006.9		11.1	- 1.1	4.8	-3.9	17.8	26	- 9.4	19	0	25			124	8	37	7	0	T	T	3.7		13.0*	NNE	31	10	8	13	5.4	
MACON	109	1007.3	1021.4	11.1	- 0.6	5.2	-4.2	17.8	27+	- 9.4	19	0	21	- 3.3	60	130	27	38	6	1	13	25	3.6	NW	13.0	NW	8	11	9	11	5.3	64
ROME	194	998.3		7.2	- 5.0	1.1	-4.7	17.2	26	-13.3	19	0	28			139	8	61	10	0	188	127						14	5	12	5.0	
SAVANNAH	15	1018.1	1020.9	12.8	0.6	6.5	-4.3	18.9	27+	- 6.7	19	0	18	1.1	64	45	- 26	17	6	0	0	0	4.6	NE	12.5	NW	13	11	4	16	5.7	63
THOMASVILLE U	86			12.8	2.2	7.5	-4.7	21.7	12	- 6.7	19	0	8			99	14	44	9	2	0	0										
HAWAII																																
HILO	9	1014.3	1015.1	27.8	17.8	22.8	0.9	29.4	26+	16.7	26+	0	0	17.8	76	20	-366	8	13	0	0	0	3.9	SW	12.5	NNE	22+	12	13	6	5.1	35
HONOLULU	2	1014.9	1015.2	27.2	19.4	23.3	0.2	28.9	13+	16.1	24	0	0	17.2	70	36	- 40	26	9	0	0	0	3.3	N	11.6	N	22	14	8	9	4.8	62
KAHULUI	13	1012.0	1015.1	27.2	18.3	22.9		29.4	5+	13.9	24	0	0	18.3	78	23		10	8	0	0	0	4.0	NE	11.6*	NW	22	14	12	5	4.1	67
LIHUE	35	1010.0	1015.8	26.7	18.3	22.6	0.2	28.9	9	15.6	25	0	0	17.8	77	53	- 78	34	11	0	0	0	3.8	WNW	11.6	NE	31+	12	9	10	4.6	68
IDAHO																																
BOISE	865	928.7	1028.5	1.1	- 5.6	- 2.2	-2.3	6.1	6	-12.2	11	0	31	- 3.9	88	26	- 8	11	8	0	140	51	2.0	SE	13.0	NW	6	4	4	23	8.2	41
IDAHO FALLS 42NW R	1460			- 2.8	-17.2	-10.1	-2.7	3.3	6	-32.8	13	0	31			11	- 4	7	6				1.4	NNW	13.9A	NW	21					
IDAHO FALLS 46W R	1504	854.1		- 2.8	-17.2	- 9.8	-3.6	2.8	19+	-28.9	11	0	31			13	- 2	6	10	0	211	152	1.1	NNE	8.0A	WSW	25					
LEWISTON	431	972.4		3.9	- 1.7	1.1	-0.6	11.7	31+	- 8.3	10	0	26			38	3	11	17	0	183	102						3	2	26	8.8	
POCATELLO	1355	869.3	1029.3	- 0.6	-11.1	- 5.9	-3.3	5.6	17	-23.3	11	0	31	- 7.2	89	31	6	11	12	0	442	178	2.7	NE	19.2	SW	6	2	10	19	7.9	35
ILLINOIS																																
CAIRO U	96	1010.2		2.8	- 5.6	- 1.3	-5.5	18.9	6	-13.3	24	0	24			35	- 58	13	5	1	152	152	4.0	N#	15.6	W	7	14	7	10	4.5	72
CHICAGO O HARE	201	994.9	1020.9	- 5.0	-16.1	-10.4		13.3	7	-26.7	20	0	31	-13.9	77	19		8	9	0	226	127	4.1	WNW	9.4*	WSW	13	15	4	12	5.2	
CHICAGO MIDWAY	186	996.6	1021.4	- 3.3	-12.2	- 7.8	-6.3	15.0	7	-22.8	20	0	31	-12.2	71	19	- 29	7	8	0	201	102	4.6	SW	12.5	S	7	11	6	14	5.5	55
MOLINE	177	999.2	1022.8	- 5.6	-15.0	-10.1	-7.6	12.8	7	-30.0	21	0	31	-13.9	74	24	- 18	8	7	0	246	152	4.2	WNW	11.6	NW	27	15	3	13	4.8	62
PEORIA	199	1000.0	1023.6	- 5.0	-13.3	- 9.2	-7.6	13.9	7	-27.8	21	0	30	-13.3	73	20	- 29	7	6	0	155	76	3.7	WNW	11.6	W	9+	13	6	12	5.2	62
ROCKFORD	222	992.2	1020.9	- 5.6	-15.6	-10.4	-6.9	12.8	7	-28.9	21+	0	31	-14.4	72	20	- 23	8	6	0	218	178	3.8	NW	9.8*	NW	9	15	3	13	4.8	
SPRINGFIELD	179	998.7	1023.2	- 2.2	-12.2	- 7.3	-7.0	18.3	7	-23.9	21	0	29	-12.2	69	15	- 33	6	6	0	132	76	4.8	W	16.1	W	8	13	7	11	5.1	73

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
INDIANA																																
EVANSVILLE	116	1008.6	1023.6	1.7	-10.0	- 4.3	-6.6	17.8	7	-22.8	19	0	29	- 9.4	68	30	- 48	14	7	0	208	178	3.4	NW	13.4	S	8	10	10	11	5.3	54
FORT WAYNE	241	987.9	1020.8	- 3.3	-11.1	- 7.1	-5.3	14.4	7	-23.3	20	0	31	-10.6	77	21	- 32	9	12	0	163	102	4.6	WSW	14.3	SW	24	8	8	15	6.5	43
INDIANAPOLIS	242	990.5	1022.1	- 2.8	-12.2	- 7.5	-7.0	16.7	7	-25.6	21	0	30	-11.7	72	22	- 46	8	9	1	198	102	4.1	WSW	13.9*	SW	8	9	10	12	5.8	57
SOUTH BEND	234	990.6	1019.9	- 2.8	-11.1	- 7.0	-5.2	13.3	7	-24.4	31	0	31	-10.6	76	48	- 7	10	21	0	635	330	5.1	SW	11.2*	W	9	5	5	21	7.6	
IOWA																																
BURLINGTON	212	996.6	1023.7	- 3.9	-13.3	- 8.7	-6.7	13.3	7+	-26.1	21	0	30	-13.3	72	21	- 20	8	6	0	257	152	5.0	NW	14.8	W	8	14	3	14	5.1	64
DES MOINES	289	990.9	1023.9	- 4.4	-13.9	- 9.3	-6.3	15.0	6	-26.7	22	0	31	-13.9	71	14	- 15	5	4	0	193	102	4.8	NNW	17.9	NW	8	12	4	15	5.4	55
DUBUQUE	325	995.3		- 6.7	-15.6	-11.2	-6.4	9.4	7	-26.7	21	0	31			19	- 30	11	4	0	206	152			11.2*	WSW	13	14	4	13	5.2	
SIOUX CITY	334	980.5	1024.3	- 3.3	-15.0	- 9.2	-5.0	16.1	5	-27.2	21	0	31	-13.9	70	12	- 7	6	6	0	150	102	4.8	NW	22.8	NW	8	9	7	15	5.8	59
WATERLOO	265	988.1	1022.0	- 6.7	-17.2	-12.0	-7.1	10.0	6	-32.8	21	0	31	-14.4	76	13	- 15	4	5	0	178	127	4.5	NW	13.4*	NNW	27+	11	8	12	5.6	
KANSAS																																
CONCORDIA	448	972.2	1024.7	0.6	-10.0	- 4.9		16.7	6	-22.2	14	0	31	-11.1	65	5		4	5	0	76	51	5.7	WSW	20.1	NW	8	11	6	14	5.5	56
DODGE CITY	791	932.5	1024.5	3.3	- 9.4	- 3.1	-4.6	18.9	5	-20.0	12	0	31	-10.0	66	16	4	11	5	0	178	152	5.8	NNW	20.6	NW	7	15	4	12	4.9	68
GOODLAND	1111	891.6	1024.2	2.8	-11.7	- 4.4	-3.5	20.0	5	-26.7	14	0	31	-10.6	69	10	- 1	4	5	0	269	127	5.7	WSW	23.2*	NNW	7	13	7	11	5.1	
TOPEKA	267	987.4	1025.1	1.1	-11.1	- 4.8	-5.6	21.1	6	-20.6	23	0	30	-11.1	65	6	- 30	4	4	0	91	51	4.8	W	27.3	NW	8	11	6	14	5.5	62
WICHITA	403	973.5	1024.6	2.8	- 8.3	- 3.0	-5.1	17.2	6	-18.9	22	0	31	- 8.3	71	9	- 15	8	3	0	119	102	4.9	S	24.1	NW	8	11	8	12	5.4	56
KENTUCKY																																
COVINGTON	265	988.2	1021.4	- 0.6	- 9.4	- 5.1	-6.3	15.6	7	-23.9	21	0	30	- 9.4	74	27	- 42	12	9	1	193	76	4.0	WSW	12.5*	WSW	8	8	11	12	5.9	
LEXINGTON	298	985.2	1022.3	0.6	- 7.8	- 3.6	-5.8	16.7	7	-20.0	19	0	30	- 8.3	71	21	- 67	7	9	0	208	127	3.6	WNW	10.3*	SW	8+	9	11	11	5.4	
LOUISVILLE	144	1002.6	1022.6	1.7	- 7.8	- 2.9	-5.1	16.7	7	-18.3	19	0	29	- 8.9	64	27	- 55	8	10	0	180	76	3.6	W	13.0	S	8	11	9	11	5.6	53
LOUISIANA																																
ALEXANDRIA	28	1019.3	1024.0	11.1	- 1.7	4.9		22.8	26	-11.1	24	0	24	- 1.1	71	90		34	9	0	10	T	3.0	NE	11.2	NW	8	9	7	15	6.4	
BATON ROUGE	20	1020.0	1023.2	13.3	1.7	7.3	-4.7	23.9	11	- 7.2	24	0	10	0.0	65	132	2	49	9	1	T		3.9	N	11.2	NW	22+	9	4	18	6.6	
LAKE CHARLES	4	1022.0	1023.5	13.3	2.8	7.8	-4.7	23.9	11	- 6.1	24+	0	8	1.7	69	85	- 61	41	9	0	T	T	4.4	NNE	10.3*	NNE	14	9	6	16	6.4	
NEW ORLEANS	1	1020.5	1022.8	13.3	2.2	7.8	-4.9	24.4	11	- 5.0	24	0	11	3.3	76	133	29	63	10	1	69	76	3.9	NE	10.3*	N	14	8	5	18	6.7	
NEW ORLEANS AUDUBON	2	1015.5		13.9	4.4	9.1		24.4	11	- 3.9	24	0	8			146		78	10	1	114	102	2.5	N#	7.6	NW	8	11	6	14	6.0	40
SHREVEPORT	77	1015.2	1024.7	10.0	- 1.1	4.4	-5.4	21.7	26	-12.8	23	0	20	- 2.2	68	76	- 50	34	6	0	81	76	4.9	NNE	14.3	NW	7	11	7	13	5.7	57
MAINE																																
CARIBOU	190	988.4		- 8.9	-17.2	-12.9	-3.8	2.8	9	-26.7	31	0	31			19	- 43	11	8	0	165	102						9	9	13	6.2	
PORTLAND	19	1011.0	1015.1	- 2.8	-14.4	- 8.6	-5.1	10.0	9	-29.4	31	0	31	-12.8	69	55	- 43	18	13	0	503	229	4.0	N	20.1	E	9	11	6	14	5.5	68
MARYLAND																																
BALTIMORE	45	1014.6	1019.5	2.8	- 6.1	- 1.8	-3.9	11.7	8	-16.7	31	0	30	- 7.8	65	53	- 23	23	6	0	246	203	4.0	WNW	17.0	W	8	14	3	14	5.1	64
BALTIMORE U	4			3.3	- 2.8	0.1	-3.8	12.2	8	-11.1	20	0	22			54	- 26	23	7													
MASSACHUSETTS																																
BLUE HILL OBS R	192	989.3		- 1.7	- 8.9	- 5.2	-4.1	10.0	9	-18.3	21	0	30			85	- 15	21	13	0	640	279	6.6	W	19.2	WNW	30					55
BOSTON	5	1010.7	1015.6	- 0.6	- 6.7	- 3.4	-4.1	11.1	9	-16.1	21	0	30	- 9.4	67	77	- 15	19	11	0	450	178	6.6	WNW				11	7	13	5.6	59
NANTUCKET	13	1014.8	1015.3	2.2	- 3.9	- 0.7	-2.7	11.1	9	-12.2	21	0	27	- 6.7	67	116	16	42	16	0	627	356	6.5	NW	17.9	NW	19	9	7	15	6.3	54
PITTSFIELD	357			- 3.3	-11.7	- 7.4	-3.7	8.3	9+	-22.2	31+	0	31			53	- 30	30	11		427	203										
WORCESTER	301	977.4	1014.9	- 2.8	-10.0	- 6.6	-3.9	9.4	9	-19.4	21	0	31	-10.0	76	60	- 31	26	10	0	424	254	5.0	W	13.9*	WNW	30+	12	5	14	5.7	
MICHIGAN																																
ALPENA	210	990.9		- 2.8	-12.2	- 7.7	-3.6	6.1	8	-23.9	31	0	31			47		13	18	0	648	229	3.2	SW	11.2	NW	20	4	7	20	7.7	51
DETROIT	189	991.1	1018.9	- 1.7	- 7.2	- 4.6	-3.4	10.6	7	-15.0	30+	0	30	- 8.3	75	35	- 18	12	13	0	262	127	4.9	W	14.8	NW	18+	6	8	17	6.6	44
DETROIT M WAYNE CO	193	994.2	1019.3	- 2.2	-10.0	- 6.2	-4.4	10.6	7	-22.2	31	0	31	-10.0	73	28	- 20	10	12	0	226	127	3.1	SW				8	7	16	6.5	
DETROIT WILLOW RUN	217	989.4	1018.9	- 1.1	- 8.3	- 4.9	-3.4	11.7	7	-21.1	31	0	31	- 8.3	77	25	- 25	10	10	0	226	127	4.6	SW	16.1*	NW	18	10	5	16	6.3	
FLINT	233	990.3	1019.3	- 1.7	-10.6	- 6.2	-3.4	12.8	7	-23.9	31	0	31	- 9.4	75	20	- 26	5	14	0	305	152	4.4	SW	12.1*	NW	18+	10	7	14	6.2	
GRAND RAPIDS	210	992.0	1018.7	- 1.7	-10.0	- 5.9	-3.7	13.3	7	-21.1	31	0	31	- 7.8	86	39	- 12	10	19	0	549	229	3.9	SSW	13.4	NW	24+	6	7	18	7.4	33
LANSING	260	984.8	1018.6	- 1.7	-11.1	- 6.3	-3.8	15.0	7	-23.3	31	0	31	- 8.3	81	24	- 27	8	10	0	221	152	3.2	SW	13.0	SW	20+	7	9	15	6.5	37
MARQUETTE U	206	989.5		- 3.9	-10.6	- 7.3	-2.9	5.6	8	-18.9	30+	0	31			60	11	14	18	0	706	381	4.1	W#	15.6	SW	31	5	8	18	7.2	41
MUSKEGON	191	994.7	1018.7	- 1.1	- 8.9	- 5.1	-3.4	12.2	7	-22.2	31	0	31	- 7.2	81	79	28	16	22	0	2098	864	5.3	NW	13.4*	SW	13	0	3	28	9.1	
SAULT STE MARIE	220	993.0	1017.1	- 5.0	-12.8	- 8.7	-2.3	4.4	8+	-21.1	30	0	29	-11.1	83	59	2	13	20	0	1049	559	4.6	E	17.0*	NW	20	3	3	25	8.1	37
MINNESOTA																																
DULUTH	435	976.5	1020.3	- 8.3	-16.1	-12.4	-2.4	3.3	8+	-27.8	20	0	31	-16.1	73	27	- 2	18	10	0	404	203	5.2	NW	17.9	NW	14	8	8	15	6.2	54
INTERNATIONAL FALLS	359	976.9	1020.8	-11.1	-21.1	-16.1	-3.5	3.3	5	-34.4	16	0	31	-19.4	73	30	9	13	10	0	384	356	4.7	W	13.0*	NNE	8	11	5	15	5.9	
MINNEAPOLIS	251	986.7	1022.3	- 7.8	-16.7	-12.2	-4.3	6.1	7+	-28.9	16	0	31	-16.7	69	15	- 7	11	7	0	193	127	4.0	NW	12.5	NNW	8	9	5	17	6.5	52

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

State and Station	Elevation (ground)	Pressure		Temperature										Average relative humidity	Precipitation							Wind					No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
											No. of days							No. of days		Snow, Sleet				Fastest mile (1.6 kilometers)							
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	Max. 32.2 °C or above	Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	.25 mm. or more	With thunderstorms	Total	Maximum depth on ground	Average speed	Prevailing direction	Speed	Direction	Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
MINNESOTA																																
ROCHESTER	395	971.1	1021.9	- 8.3	-16.7	-12.4	-5.6	6.7	7	-28.9	21+	0	31	-15.6	76	10	- 15	3	7	0	211	127	5.8	NW	12.5*	W	13+	9	8	14	6.2	
ST CLOUD	315	981.2		- 8.3	-18.3	-13.3	-4.8	5.0	5	-31.1	20	0	31			17	- 2	12	9	0	234	178						6	8	17	0.7	
MISSISSIPPI																																
JACKSON	93	1010.9	1023.5	8.9	- 1.7	3.7		20.6	26+	-10.6	24	0	21	- 2.8	67	112		34	12	0	79	51	3.8	NNE	13.0	NW	11	9	10	12	5.8	
MERIDIAN	89	1009.2	1023.7	10.0	- 3.3	3.3	-5.7	20.0	26	-11.1	24	0	26	- 2.2	72	114	- 21	29	10	2	447	356	3.3	N	10.3*	N	14+	11	7	13	5.9	
VICKSBURG U	71	1014.0		8.9	- 1.1	3.8	-6.3	20.6	26+	- 9.4	24	0	17			109	- 17	28	11	1	64	51	3.5		14.8	NW	8	8	13	10	5.8	50
MISSOURI																																
COLUMBIA	237	993.5	1023.3	- 0.6	-10.6	- 5.5	-6.5	21.1	6	-22.2	22+	0	28	-11.1	68	15	- 35	7	5	0	168	102	4.6	WNW	19.2	NW	8	14	9	8	4.5	72
KANSAS CITY	226	987.4	1024.1	1.1	- 8.3	- 3.8	-5.3	20.0	6	-19.4	22	0	29	-11.1	58	9	- 29	8	4	0	109	76	4.3	NNE	17.0	NW	8	12	8	11	5.1	60
ST JOSEPH	247	988.0		0.0	-12.2	- 6.1	-5.8	19.4	6	-25.0	23	0	30			6	- 28	4	2	0	76	51	3.8	NW	19.7*	WNW	8	15	3	13	4.8	
ST LOUIS	163	998.6	1023.8	- 0.6	-10.0	- 5.4	-7.0	19.4	6	-21.1	21	0	30	-11.7	64	17	- 33	8	6	0	163	127	4.2	WNW	15.6	W	8	14	7	10	4.7	69
ST LOUIS RFC	142			0.6	- 7.8	- 3.7	-6.2	20.6	6	-18.3	21	0	25			14	- 41	9	5		91	76										
SPRINGFIELD	386	974.3	1023.9	2.8	- 8.9	- 3.3	-5.9	21.1	6	-20.6	23	0	29	- 8.9	69	11	- 44	10	4	0	30	25	4.1	WNW	16.1	W	8	10	7	14	5.8	58
MONTANA																																
BILLINGS	1087	895.2	1024.6	- 0.6	-10.0	- 5.3	-3.6	13.3	5	-26.7	13	0	28	-11.7	68	36	21	10	10	0	549	330	6.6	WSW	21.9	W	25	6	11	14	6.6	55
GLASGOW	694	946.3		- 3.9	-13.9	- 8.7	-0.7	13.3	31	-30.6	18	0	31			8	- 4	3	10	0	64	51						4	9	18	7.5	
GREAT FALLS	1116	892.3	1025.8	0.0	- 9.4	- 4.7	-2.7	15.0	31	-28.3	13	0	24	-12.8	59	26	11	10	9	0	269	229	6.3	SW	22.8	SW	31	4	6	21	8.0	37
HAVRE	787	931.7		- 2.8	-14.4	- 8.8	-2.6	12.8	31+	-32.2	18	0	29			13	1	4	7	0	213	178	4.1	SW#	17.9	W	31	6	7	18	7.2	51
HELENA	1187	878.2	1028.1	- 2.2	-14.4	- 8.4	-4.1	9.4	31+	-27.8	11	0	31	-12.8	72	32	19	0			538	330	2.8	WNW	17.0	W	25					
KALISPELL	904	918.6		- 1.1	-10.0	- 5.6	-0.3	8.9	31	-20.0	11	0	31			34	0	12	14	0	465	254	2.2					4	1	26	8.6	
MILES CITY	801			- 1.1	-12.8	- 6.8	-1.9	14.4	5	-31.1	14	0	31			17	7	7	9	0	155	127	5.1	NW	12.5*	W	23					
MISSOULA	972	908.7	1028.8	- 3.9	-11.7	- 7.8	-3.1	6.1	31	-20.6	11	0	31	- 9.4	88	27	- 1	9	11	0	523	254	1.9	SE	12.5	SW	6	2	2	27	8.6	18
NEBRASKA																																
GRAND ISLAND	561	954.9	1024.6	0.6	-11.7	- 5.6	-3.8	18.3	5	-25.6	18	0	31	-12.2	63	3	- 11	2	2	0	58	51	5.3	NW	20.6*	NW	8	7	7	17	6.4	
LINCOLN U	351			- 1.1	-11.1	- 6.2	-5.4	17.2	5	-22.8	22	0	30			8	- 14	4	4	0	107	76	4.4	SW#	25.0	NW	8	9	10	12	5.8	59
NORFOLK	471	965.2		- 2.2	-13.3	- 7.8	-4.1	17.2	25+	-26.7	15	0	31			6	- 12	3	6	0	71	51						8	8	15	6.2	
NORTH PLATTE	847	919.8	1023.8	1.7	-12.8	- 5.6	-3.1	17.8	25	-25.6	14	0	31	-12.2	66	6	- 4	3	5	0	135	51	4.6	NW	21.0	NW	7	12	7	12	5.5	77
OMAHA	298	982.1	1024.4	- 2.2	-13.9	- 7.9	-5.8	16.1	6	-25.0	22+	0	31	-13.9	63	12	- 8	6	6	0	168	102	4.5	NNW	21.9	NW	8	11	8	12	5.5	62
OMAHA N OMAHA AP	403	973.1		- 2.8	-13.9	- 8.3	-5.1	15.0	6	-26.1	21	0	31			12	- 11	6	7	0	150	102						9	9	13	5.7	
SCOTTSBLUFF	1204	882.2	1024.2	2.2	-11.7	- 4.6	-2.4	18.3	6	-24.4	14	0	31	-11.7	65	8	- 2	3	7	0	122	51	5.4	NW	20.6*	WNW	6	9	9	13	5.7	
VALENTINE	789	928.4		- 0.6	-13.3	- 6.8	-2.9	17.8	5	-30.0	18	0	31			4	- 4	2	6	0	64	51	4.6	W#	22.4	NW	7	9	6	16	6.3	67
NEVADA																																
ELKO	1547	850.8	1028.2	3.3	-10.6	- 3.8	-0.7	8.9	19+	-24.4	11	0	31	- 7.2	81	11	- 15	6	7	0	140	102	2.0	E	10.3*	wNW	20	9	3	19	6.6	
ELY	1907	812.7	1025.9	6.1	-11.1	- 2.4	0.4	14.4	31	-23.9	11	0	31	- 9.4	70	5	- 12	4	4	0	89	102	3.0	S	11.2	SE	9	9	9	13	5.7	79
LAS VEGAS	659	944.7	1023.7	13.9	0.0	7.0	-0.3	18.3	29	- 4.4	12	0	15	- 7.8	37	0	- 10	0	0	0	0	0	2.9	W	19.7*	WSW	9	12	16	3	4.0	94
RENO	1342	868.4	1026.6	9.4	- 6.1	1.7	0.9	16.1	8	-10.0	24+	0	31	- 4.4	73	2	- 25	1	3	0	25	25	1.7	SW	14.3	SW	20	6	9	16	6.4	65
WINNEMUCCA	1310	874.3		7.2	- 8.3	- 0.6	0.7	11.7	17	-17.8	11	0	31			19	- 5	11	5	0	104	76	2.3	NE	14.8	W	20	6	8	17	7.0	42
NEW HAMPSHIRE																																
CONCORD	103	1004.3	1015.6	- 2.8	-13.9	- 8.2	-4.3	8.3	9	-28.9	31	0	31	-12.8	70	40	- 43	20	10	0	429	279	3.4	NW	12.5	NW	20	11	4	16	5.7	58
MT WASHINGTON OBS	1909	791.3		-13.9	-22.2	-17.9	-5.1	- 0.6	8	-35.6	30	0	31			190	29	60	17	0	1234	254	17.8	NW#	55.0Y	NW	20	6	10	15	6.9	41
NEW JERSEY																																
ATLANTIC CITY	18	1016.8	1018.9	3.3	- 5.0	- 0.8	-3.4	13.3	8	-12.8	31	0	28	- 6.1	69	60	- 22	24	8	1	193	152	4.7	WNW	13.4*	NW	16+	11	8	12	5.4	48
ATLANTIC CITY U	3			3.3	- 3.3	- 0.1	-3.6	12.2	8	-10.6	20	0	27			56	- 33	22	8				6.3	NW	17.9*	SE	8					
NEWARK	3	1016.9	1018.1	1.7	- 4.4	- 1.5	-3.0	12.2	8	-12.2	20	0	27	- 7.2	67	50	- 32	21	9	0	272	178	4.9	WNW	17.9*	SSW	8	9	10	12	5.5	
TRENTON U	17	1010.6		1.7	- 4.4	- 1.4	-3.2	13.3	8	-12.2	20	0	28			50	- 23	21	8	1	259	178	4.0	W#	13.0	SE	8	10	10	11	5.3	65
NEW MEXICO																																
ALBUQUERQUE	1618	851.6	1022.4	8.9	- 5.6	1.6	-1.2	12.8	25+	-11.7	14	0	31	-10.0	46	T	- 12	T	0	0	T	0	3.1	N	17.0	NW	7	25	3	3	2.3	90
CLAYTON	1515	847.1		8.3	- 8.3	- 0.1	-2.3	22.8	25	-16.7	14+	0	30			2	- 7	1	3	0	41	25						18	3	10	4.0	
RATON	1944	806.3		8.3	-12.2	- 1.9	-1.4	20.0	25	-20.0	14	0	31			4	- 3	3	3	0	43	25						20	5	6	3.4	
ROSWELL	1103	896.5		11.1	- 7.8	1.7	-1.3	22.2	1	-15.0	23	0	31			4	- 10	3	2	0	25	25	3.4	SE	16.5	NW	29	14	7	10	4.3	73
SILVER CITY	1638	838.0		13.3	- 4.4	4.4		20.6	25	-10.6	30+	0	27			T		T	0		T	T						23	3	5	2.2	
NEW YORK																																
ALBANY	84	1014.0	1017.6	- 2.8	-12.2	- 7.7	-4.7	9.4	9+	-25.0	31	0	31	-11.7	73	47	- 19	14	13	0	533	229	3.2	WNW	14.8	W	10	5	10	16	6.8	49
BINGHAMTON	485	954.6	1015.8	- 4.4	-10.0	- 7.1	-3.6	7.2	8	-20.0	21	0	31	- 8.9	89	64	- 1	25	22	1	688	330	4.0	WNW	13.9	NW	15	1	8	22	8.2	27

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	C.	C.	C.	C.	°C.		°C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
NEW YORK																																
BUFFALO	215	987.5	1017.2	- 2.2	- 7.2	- 4.8	-2.1	9.4	8	-16.1	20	0	30	- 8.9	75	46	- 30	14	24	0	610	330	4.6	WNW	19.2	SW	24	4	8	19	7.7	34
NEW YORK U	40	1005.5		2.2	- 3.3	- 0.4	-2.6	12.8	8	-11.7	21+	0	22			59	- 24	23	9	0	287	152	4.3	W#	11.6	NW	16	12	9	10	5.0	63
NEW YORK LA GUARDIA	6	1016.0	1017.7	1.1	- 2.8	- 0.8	-3.3	12.8	8	-11.1	21+	0	23	- 7.2	63	54	- 32	18	9	2	295	178	5.8	WNW	14.8	NW	10	8	12	11	5.8	
ROCHESTER	166	997.9	1017.8	- 1.7	- 9.4	- 5.7	-3.9	8.3	8	-20.6	31	0	31	- 8.9	77	48	- 12	8	18	0	879	330	5.2	W	17.9	NW	10	5	7	19	7.6	39
SCHENECTADY	66			- 2.2	-10.0	- 6.2	-3.3	8.9	9	-22.2	31	0	30			52	- 14	14	15	0	490	279						15	3	13	5.4	
SYRACUSE	127	994.1	1017.0	- 2.2	-10.0	- 6.2	-3.9	7.8	8	-19.4	31+	0	31	- 9.4	77	52	- 28	20	21	0	721	356	3.7	WSW	14.8	W	20+	4	8	19	7.7	37
NORTH CAROLINA																																
ASHEVILLE U	671	938.1		4.4	- 5.0	- 0.3	-4.8	15.6	26	-13.9	19	0	28			62	- 12	34	9	0	226	51	3.8	NW#	14.8	NW	14	8	11	12	5.8	52
CAPE HATTERAS R	2	1018.5	1019.1	9.4	0.6	5.1	-3.9	20.0	8	- 3.9	21+	0	20	- 0.6	72	101	- 16	34	10	0	0	0	4.9	N	14.3*	SSW	8	14	6	11	5.2	57
CHARLOTTE	224	991.4	1020.4	7.2	- 3.3	2.0	-4.2	17.8	26	-11.7	19	0	28	- 5.6	63	77	- 15	22	9	0	28	25	3.1	NE	9.8	SW	8	13	6	12	5.3	60
GREENSBORO	272	987.6	1020.6	5.6	- 5.0	0.2	-4.2	14.4	7	-13.3	21	0	29	- 6.7	64	39	- 40	11	9	0	66	25	3.5	NNE	14.3	NE	31	14	6	11	4.9	61
RALEIGH	132	1005.4	1020.1	7.2	- 3.9	1.5	-4.0	16.7	26+	-13.3	21	0	28	- 5.0	67	83	7	25	9	0	T	T	3.3	NW	11.2*	SSW	8	14	5	12	5.3	54
WILMINGTON	9	1017.6	1020.4	11.1	0.0	5.7	-3.3	19.4	27	- 5.0	17	0	21	- 2.2	62	69	- 18	21	8	0	T	0	3.7	N	16.5	NE	31	10	10	11	5.6	65
WINSTON SALEM	295	984.0	1020.3	5.0	- 4.4	0.3	-4.6	13.9	7	-12.8	21	0	29	- 6.7	62	54	- 31	16	9	0	81	51	3.7	NNW	11.2*	WNW	9	15	4	12	5.1	
NORTH DAKOTA																																
BISMARCK	502	960.0	1024.2	- 5.6	-17.8	-11.9	-3.4	11.1	31	-34.4	15	0	31	-16.7	66	21	11	10	8	0	239	127	4.4	NW	21.0	NW	12	3	12	16	6.9	51
FARGO	274	985.9	1022.6	- 7.8	-18.3	-13.0	-2.9	6.1	5	-33.3	21	0	31	-17.8	66	10	- 5	8	5	0	109	102	4.8	N	20.6	N	8	6	8	17	7.1	45
WILLISTON	579	952.7		- 4.4	-16.7	-10.7	-2.8	10.6	31	-33.9	15	0	31			8	- 5	3	8	0	76	51	4.4		21.9	NW	12	2	11	18	7.4	53
OHIO																																
AKRON	369	980.2	1019.8	- 3.3	- 9.4	- 6.4	-5.0	8.9	7	-21.1	20	0	31	- 9.4	80	38	- 20	12	14	0	300	102	4.5	WSW	11.2*	WNW	18	5	8	18	7.3	
CINCINNATI OBS	232			0.0	- 8.3	- 4.2	-6.1	15.6	7	-20.0	21+	0	30			24	- 46	8	9	0	188	76	2.9	W#	9.4	SW	8					55
CINCINNATI U	169	997.7		1.1	- 7.2	- 3.1		16.7	7	-17.8	21+	0	29			25		9	9		178											
CLEVELAND	237	990.2	1019.2	- 2.8	- 8.3	- 5.6	-4.2	10.6	7	-20.0	20	0	31	- 9.4	75	27	- 33	7	16	0	358	102	4.4	SW	13.4	SW	24+	5	8	18	7.4	41
COLUMBUS	247	990.1	1021.5	- 1.7	- 9.4	- 5.8	-6.1	14.4	7	-23.3	20	0	30	-10.0	74	22	- 38	9	9	0	185	102	4.1	W	13.0	W	27+	5	11	15	7.2	37
COLUMBUS U	221			- 1.1	- 8.3	- 4.8	-5.6	14.4	7	-20.6	20	0	30			22	- 35	8	9	0	229	127										
DAYTON	304	987.2	1021.2	- 1.1	-10.0	- 5.7	-5.3	15.0	7	-24.4	20	0	30	- 9.4	74	15	- 45	5	9	0	198	127	4.7	WSW	13.9	W	8	6	11	14	6.5	56
MANSFIELD	395			- 3.3	-10.6	- 6.7	-5.2	12.2	7	-21.1	20+	0	31			19	- 49	7	10	0	201	102						7	4	20	7.5	
TOLEDO	206	993.4	1019.9	- 2.8	-10.6	- 6.9	-4.8	12.2	7	-22.8	31	0	31	-10.0	79	21	- 28	7	16	0	206	76	4.3	WSW	12.5	SW	24	7	7	17	6.5	46
YOUNGSTOWN	359	974.7	1019.2	- 3.3	- 8.9	- 6.3	-5.4	7.2	8+	-20.6	20	0	31	- 9.4	80	32	- 36	8	16	0	584	203	4.9	SW	10.7*	WSW	18	5	8	18	7.4	
OKLAHOMA																																
OKLAHOMA CITY	390	978.1	1024.3	5.6	- 4.4	0.6	-3.8	20.6	6	-15.0	23	0	27	- 6.1	65	23	- 13	18	6	1	64	25	5.3	N	16.1	NW	7	13	4	14	5.5	61
TULSA	206	999.3	1024.9	5.6	- 6.1	- 0.4	-5.2	22.2	6	-19.4	23	0	29	- 7.8	64	25	- 16	17	4	0	10	102	4.5	S	13.0	W	8+	11	7	13	5.7	57
OREGON																																
ASTORIA	2	1020.1	1020.7	10.6	3.3	6.9	0.8	17.2	24	- 3.3	11+	0	6	5.0	87	232	-115	34	19	1	0	0	3.6	ESE	13.9*	SSW	24	4	2	25	8.5	
BURNS U	1265			2.8	- 7.8	- 2.4	-0.8	10.0	17	-21.1	11	0	31			26	- 10	10	8	0	206	102						5	5	21	7.7	
EUGENE	110	1008.9		9.4	1.7	5.7	0.2	16.1	30	- 5.0	11	0	11			78	- 89	19	15	1	0	0	2.6		17.0*	SW	24	2	1	28	9.0	
MEACHAM	1234			1.1	- 3.9	- 1.2	0.0	5.6	25	-15.6	11+	0	30			66	- 49	16	15	0	378	152						4	3	24	8.5	
MEDFORD	396	975.6	1024.6	6.1	- 1.7	2.2	-1.4	11.7	25	- 8.9	11	0	23	0.6	95	27	- 59	10	11	0	T	0	1.2	N	6.3*	WNW	8	2	5	24	8.7	
PENDLETON	452	970.4	1025.9	2.8	- 2.2	0.4	-1.8	15.6	24	-12.2	11	0	24	- 1.7	88	33	- 5	11	17	0	51	25	2.9	NW	15.6*	WNW	20+	1	3	27	9.0	
PORTLAND	6	1017.1	1022.8	6.7	0.0	3.3	-1.8	11.1	25	- 6.7	11	0	16	0.6	82	91	- 71	22	16	0	0	0	4.6	ESE	13.4	SE	30+	3	4	24	8.4	27
PORTLAND U	9			8.9	3.3	6.2	0.1	15.0	31	- 1.7	11	0	4			119	- 69	26	13		0	0										
ROSEBURG	154	1003.7		9.4	1.7	5.6	0.1	17.2	31+	- 6.7	11	0	8			51	- 94	20	12	1	0	0	1.3	S#	11.6	S	24	1	4	26	9.1	28
SALEM	59	1015.6	1022.9	8.3	0.6	4.4	-0.9	14.4	31	- 5.6	13	0	17	1.7	86	98	- 89	16	15	0	0	0	2.9	S	10.3*	SSE	8	4	3	24	8.2	
SEXTON SUMMIT R	1169	887.6		8.9	2.8	5.8	2.8	16.1	2	- 6.1	10	0	9			72	- 49	25	12	0	81	25	6.0	S				4	5	22	7.9	
PACIFIC AREA																																
CANTON ISLAND	3	1007.7	1008.0	32.2	25.6	28.9	0.6	33.3	21+	23.3	30+	23	0	23.3	73	244	179	96	12	0	0	0	3.4	E	15.6*	WNW	27+	6	5	20	7.4	
ENIWETOK	5	1009.4		30.0	25.0	27.4	-0.3	31.1	16+	22.2	23+	0	0			166	99	40		0	0	0	8.4										
TAGUAC GUAM R	110			28.9	22.8	26.0	0.1	31.1	28	18.9	22+	0	0			411	256	155	22	0	0	0	3.8	E#	15.6	SW	25					51
JOHNSTON	2	1013.1	1013.9	26.7	23.9	25.4	-0.2	27.2	29+	22.8	26+	0	0	20.6	75	25	- 51	6	15	0	0	0	7.0	ENE	14.3	NE	22+	5	18	8	5.7	60
KOROR R	29	1007.6	1010.1	31.1	23.9	27.6	0.4	32.2	5+	22.8	28+	2	0	24.4	87	340	43	96	20	2	0	0	2.6	NE	9.4	NE	13	0	0	31	10.0	61
KWAJALEIN		1009.3	1009.4	30.0	24.4	27.2	0.1	31.1	19+	20.6	19	0	0	23.9	82	358	131	170	18	1	0	0	5.6	ENE	17.4	SE	21	1	5	25	9.1	
PONAPE R	37	1004.6	1009.0	30.6	23.9	27.3	0.5	32.2	24	22.2	21	1	0	23.3	82	231	-235	72	26	2	0	0	3.5	ENE	8.0	E	4	0	2	29	9.5	54
TRUK MOEN ISLAND	2	1008.1	1008.7	30.0	25.0	27.5	0.4	31.7	25	21.7	18	0	0	23.9	81	241	- 96	75	24	2	0	0	3.0	NNE	13.0	SE	6	0	2	29	9.4	38
WAKE	3	1014.9	1015.2	28.9	23.9	26.4	0.4	30.6	1	20.6	30	0	0	19.4	67	44	- 2	27	7	0	0	0	5.6	ENE	13.9*	ENE	8	9	15	7	5.5	
YAP R	16	1008.4		30.0	24.4	27.3	0.1	31.7	27+	22.2	28	0	0			258		70			0	0	3.5	NE	12.1	NE	11					

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure		Temperature											Average relative humidity	Precipitation							Wind				No. of days (sunrise to sunset)			Sky cover, tenths (sunrise to sunset)	Possible sunshine
		Station Ø	Sea level	Average maximum	Average minimum	Average	Departure from normal	Highest	Date	Lowest	Date	No. of days: Max 32.2 °C or above	No. of days: Min. 0 °C or lower	Average dew point		Total	Departure from normal	Greatest in 24 hours	No. of days: .25 mm or more	No. of days: With thunderstorms	Snow, Sleet: Total	Snow, Sleet: Maximum depth on ground	Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Fastest mile (1.6 kilometers): Direction	Fastest mile (1.6 kilometers): Date	Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10		
	M.	Mb.	Mb.	C.	C.	C.	C.	C.		C.				C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
PENNSYLVANIA																																
ALLENTOWN	115	1003.8	1018.6	0.0	- 7.8	- 3.9	-3.6	10.6	8	-21.1	31	0	31	- 8.3	74	56	- 27	25	7	0	279	178	4.8	W	13.4*	W	20+	10	6	15	5.9	
ERIE	223	991.0	1018.2	- 1.1	- 6.1	- 3.7	-3.0	9.4	8	-15.6	31	0	31	- 6.7	81	81	14	10	27	0	1422	406	7.1	SW	14.8*	SW	24	2	1	28	9.2	
HARRISBURG	102	1005.2	1019.3	1.1	- 6.7	- 2.8	-3.7	10.0	8	-19.4	31	0	29	- 8.9	64	60	- 14	28	8	0	401	254	4.2	W	13.9	W	25+	9	6	16	6.3	50
PHILADELPHIA	2	1016.8	1018.8	1.7	- 6.1	- 2.3	-3.3	12.2	8	-15.6	31	0	31	- 6.7	70	45	- 30	21	7	0	203	127	4.1	WNW	12.5	SW	8	12	4	15	5.7	60
PITTSBURGH	347	988.1	1019.6	- 2.2	- 8.3	- 5.3	-4.6	10.0	7	-20.0	20	0	31	- 8.9	77	31	- 29	8	14	1	417	178	4.9	WSW	14.3*	WSW	9	3	5	23	8.1	34
PITTSBURGH U	228			- 0.6	- 6.1	- 3.3	-5.0	12.2	7	-17.2	20	0	30			40	- 24	10	14		300											39
READING U	81	1006.1		1.1	- 5.0	- 1.7	-3.2	11.1	8	-16.7	31	0	28			48	- 32	23	7	0	262	178	4.6	W#	20.1	E	8	11	6	14	5.8	50
SCRANTON	287	982.3	1017.6	- 1.1	- 7.2	- 4.3	-2.6	11.1	8	-20.0	31	0	31	- 8.9	71	49	- 13	35	11	0	333	152	3.5	SW	10.3	E	8	4	7	20	7.5	41
WILLIAMSPORT	161	998.6	1018.8	0.0	- 7.2	- 3.7	-2.8	8.3	8	-19.4	31	0	31	- 8.3	71	61	- 16	29	8	0	389	203	4.3	W	11.2*	W	9	4	11	16	7.3	
RHODE ISLAND																																
BLOCK ISLAND	34	1011.1		1.7	- 3.9	- 1.1	-3.3	12.2	9	-13.9	21	0	25			82	- 9	19	10	0	264	102						6	13	12	6.4	
PROVIDENCE	17	1009.8	1015.9	0.0	- 7.8	- 4.1	-4.1	11.7	9	-18.3	31	0	31	- 9.4	69	55	- 37	19	9	0	503	178	4.8	WNW	12.5*	WNW	21	12	8	11	5.3	59
SOUTH CAROLINA																																
CHARLESTON	12	1018.4	1020.5	13.3	0.0	6.6	-3.4	20.6	27	- 6.7	19	0	20	- 1.1	66	81	8	35	7	0	0	0	3.1	NNE	17.9Y	W	18	12	7	12	5.2	51
CHARLESTON U	3			11.7	3.3	7.3	-3.7	18.3	27+	- 3.9	19	0	9			68	- 1	27	7	0	0	0	4.6		17.9	NE	31					
COLUMBIA	66	1007.7	1021.1	10.0	- 1.7	4.2	-3.8	17.8	26	- 9.4	19	0	25	- 2.8	66	128	39	37	7	0	T	T	2.7	WSW	9.8*	WNW	18+	13	5	13	5.2	64
FLORENCE	45	1014.3	1020.5	10.0	- 1.1	4.2	-4.2	19.4	8	- 7.2	19+	0	24	- 3.3	63	62	- 16	25	7	0	. T	T	3.5	NE	12.1*	NW	18	10	6	15	5.6	
GNVLE SPARTANBURG	292	982.5	1020.8	7.8	- 2.8	2.4	-4.2	16.7	27+	-10.0	19	0	26	- 4.4	65	96	- 6	32	8	0	53	25	3.4	NE	21.0	NE	31	13	7	11	5.0	62
SOUTH DAKOTA																																
HURON	391	974.0	1024.2	- 5.0	-17.8	-11.4	-4.9	13.9	4	-32.2	21	0	31	-16.1	70	12	- 2	11	4	0	170	127	5.6	NW	26.4	NW	8	8	9	14	6.4	52
RAPID CITY	965	904.9	1024.0	0.6	-11.1	- 5.2	-2.5	17.8	5	-24.4	14	0	29	-12.8	61	8	1	5	9	0	76	51	5.2	NW	19.2	NW	8	8	10	13	6.2	48
SIOUX FALLS	433	968.9	1023.5	- 3.9	-16.7	-10.4	-4.4	15.0	5	-28.9	18+	0	31	-14.4	73	22	3	17	5	0	295	178	4.6	NW	17.0*	NW	8	8	10	13	6.0	
TENNESSEE																																
BRISTOL	459	964.6	1021.2	2.2	- 6.7	- 2.3	-5.8	13.3	7	-15.6	19	0	29	- 7.2	72	51	- 31	23	12	0	328	203	2.0	WSW	10.3*	ENE	31+	8	6	17	6.7	
CHATTANOOGA	204	994.1	1022.8	6.1	- 3.3	1.4	-4.2	15.6	26+	-12.2	19	0	26	- 4.4	69	128	- 4	51	9	0	231	127	3.5	NNE	13.4	SW	8	10	5	16	5.9	53
KNOXVILLE	290	982.2	1022.6	3.3	- 5.0	- 1.0	-6.1	10.6	7	-13.3	19	0	27	- 5.6	72	73	- 35	25	9	1	335	152	3.0	NE	13.4	SW	8	10	2	19	6.4	45
MEMPHIS	79	1008.8	1024.3	4.4	- 5.0	- 0.3	-6.7	17.8	7	-25.0	24	0	26	- 5.6	69	84	- 41	52	4	1	363	356	3.8	N	13.9	SW	8	13	6	12	5.2	70
MEMPHIS U	83			4.4	- 2.8	0.8	-5.9	17.2	7	-11.1	24	0	21			79	- 40	53	4	0	351	330										
NASHVILLE	176	1002.2	1022.9	3.9	- 5.6	- 0.8	-6.1	16.1	7+	-15.0	19	0	28	- 6.7	69	55	- 52	24	8	0	335	178	4.0	NNW	14.3	NW	18	10	8	13	5.5	56
OAK RIDGE	276			3.9	- 5.6	- 0.8	-5.3	12.2	7	-15.6	19	0	26			76	- 74	0			376	279	1.9		16.1Y							
TEXAS																																
ABILENE	536	960.4	1023.1	11.1	- 1.1	5.2	-2.6	23.9	25	- 8.9	23	0	22	- 2.2	65	11	- 21	4	7	0	18	25	3.9	S	13.9	S	9+	8	7	16	6.3	44
AMARILLO	1099	892.2	1022.1	7.2	- 6.1	0.3	-3.5	20.0	25	-15.0	22	0	31	- 7.8	62	7	- 12	5	6	0	91	51	5.7	SW	16.5	N	7	12	8	11	5.2	67
AUSTIN	182	1001.5	1024.1	12.8	1.7	7.3	-4.2	25.0	7	- 5.6	23	0	11	0.0	66	36	- 28	13	9	0	T	T	4.2	NNE	11.6	N	30+	9	2	20	6.9	42
BROWNSVILLE	5	1021.8	1022.0	17.2	7.2	12.4	-4.7	28.9	11	- 2.8	24	0	2	7.8	79	70	26	36	8	1	0	0	5.6	NNW	15.6	S	10	8	5	18	6.7	46
CORPUS CHRISTI	13	1022.0	1023.2	15.6	5.6	10.6	-4.6	28.3	11	- 2.8	23	0	3	5.0	72	22	- 31	7	8	0	0	0	5.1	NNE	15.6	NNE	11	7	3	21	7.3	37
DALLAS	147	1005.3	1024.5	10.0	- 0.6	4.8	-4.2	20.0	25+	-12.2	23	0	18	- 3.3	60	46	- 22	35	7	0	56	51	4.6	NNW	13.9	NW	8	10	6	15	6.1	53
DEL RIO	313	987.8		13.3	1.7	7.7		25.0	26	- 5.0	31+	0	8			17		15	5	0	0	0	3.8					8	3	20	6.9	
EL PASO	1194	889.6	1020.2	13.3	- 1.7	5.9	-1.3	18.3	9+	- 8.3	31+	0	22	- 7.2	44	T	- 12	T	0	0	T	T	2.7	NNE	19.2	NW	21	22	2	7	2.9	88
FORT WORTH	166	1002.8	1024.5	10.6	- 1.1	4.6	-4.1	21.1	25	-12.2	23	0	21	- 3.3	62	37	- 23	30	8	0	66	51	4.4	NNW	13.9*	NW	8	11	5	15	5.9	
GALVESTON U	2			13.3	6.1	9.6	-4.4	22.8	11	- 5.6	23	0	3			71	- 28	35	6	0	0	0	8.5	NE	14.3	NE	14					47
HOUSTON U	12			14.4	5.0	9.7	-3.9	25.6	7	- 5.6	23	0	4			97	- 7	34	7		0	0										
HOUSTON	15	1020.6	1023.3	13.9	2.8	8.4	-5.1	26.1	7	- 7.2	23	0	7	1.7	69	123	12	45	8	0	0	0	4.9	N	13.0*	NNW	22	8	3	20	7.0	61
LAREDO	152	1007.5	1023.2	15.6	5.0	10.1	-5.0	28.3	7	- 2.8	23	0	4	3.3	67	36	7	13	11	0	0	0	4.0	ENE	14.3*	NNW	11	8	4	19	6.9	
LUBBOCK	988	907.5	1022.5	9.4	- 4.4	2.6	-2.4	21.7	25	-12.8	22	0	28	- 5.6	64	5	- 11	2	5	0	38	25	5.5	S	17.9*	NNE	29	12	6	13	5.5	
MIDLAND	870	919.7	1021.0	10.6	- 1.7	4.6	-3.2	20.0	25+	- 7.8	23	0	22	- 4.4	63	7	- 10	5	6	0	T	T	4.4	SW	13.9*	NE	29	8	10	13	6.2	
PORT ARTHUR	5	1021.4	1023.0	13.9	2.2	7.9	-4.5	25.0	11	- 8.3	23	0	12	2.8	76	73	- 56	30	8	0	0	T	4.7	NNE	14.8	N	14	9	5	17	6.5	57
SAN ANGELO	580	953.7	1023.0	11.1	- 1.7	4.9	-4.4	23.3	25	- 7.8	23	0	24	- 1.7	71	7	- 14	4	6	0	18	25	3.5	N	10.7*	NNW	26	10	3	18	6.5	
SAN ANTONIO	241	997.9	1023.6	13.3	1.7	7.6	-4.4	24.4	7	- 4.4	23	0	7	0.6	65	24	- 21	13	7	0	T	0	3.8	NNE	13.0	NNW	11	9	2	20	6.9	54
VICTORIA	32	1018.5		14.4	3.9	9.3	-4.7	26.1	7	- 5.0	23	0	4			48	- 19	24	9	0	0	0	5.4		20.1Y		11	8	3	20	7.0	
WACO	152	1002.1	1024.1	10.6	- 0.6	5.1	-5.1	22.2	25	-10.0	23	0	20	0.6	71	28	- 42	10	5	0	25	25	5.8	NNW	15.6*	NW	11+	8	3	20	6.8	
WICHITA FALLS	303	985.7	1024.0	9.4	- 2.2	3.4	-3.3	22.8	25	-11.1	23	0	23	- 3.3	66	23	- 14	18	7	0	33	25	4.9	N	13.9*	NNW	7	10	4	17	6.0	
UTAH																																
MILFORD	1533	849.5		3.9	-10.6	- 3.3	-1.2	13.3	19	-19.4	13	0	31			5	- 13	3	3	0	56	51						6	16	9	5.8	
SALT LAKE CITY	1286	875.3	1029.6	0.0	- 8.3	- 4.2	-4.0	6.7	17	-20.6	11	0	31	- 7.2	81	20	- 11	8	7	0	328	127	2.7	SSE	9.8	S	9	4	3	24	8.3	38
WENDOVER	1291	878.3		- 0.6	- 6.7	- 3.5	-2.3	4.4	6	-13.9	12	0	31			6	- 1	4	5	1	46	25						5	4	22	7.6	

See footnotes at end of table

CLIMATOLOGICAL DATA

METRIC UNITS

DECEMBER 1963

State and Station	Elevation (ground)	Pressure: Station Ø	Pressure: Sea level	Temperature: Average maximum	Temperature: Average minimum	Temperature: Average	Temperature: Departure from normal	Temperature: Highest	Temperature: Date	Temperature: Lowest	Temperature: Date	Temperature: No. of days: Max. 32.2 °C or above	Temperature: No. of days: Min. 0 °C or lower	Temperature: Average dew point	Average relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: No. of days: .25 mm. or more	Precipitation: No. of days: With thunderstorms	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Maximum depth on ground	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	No. of days (sunrise to sunset): Clear, 0-3	No. of days (sunrise to sunset): Partly cloudy, 4-7	No. of days (sunrise to sunset): Cloudy, 8-10	Sky cover, tenths (sunrise to sunset)	Possible sunshine
	M.	Mb.	Mb.	°C.	°C.	C.	°C.	°C.		C.				°C.	%	Mm.	Mm.	Mm.			Mm.	Mm.	M.p.s.		M.p.s.							%
VERMONT																																
BURLINGTON	101	1001.3	1016.6	- 6.1	-15.0	-10.6	-5.6	5.0	9	-28.3	31	0	31	-14.4	72	24	- 30	10	11	0	376	178	4.0	S	16.1	SE	9	8	4	19	7.0	53
VIRGINIA																																
LYNCHBURG	289	993.9		3.3	- 5.0	- 0.9	-4.6	15.6	7	-13.3	20	0	30			38	- 41	19	7	0	140	102	3.0		12.5	W	18	15	5	11	4.8	58
NORFOLK	8	1018.8	1020.1	5.6	- 2.2	1.8	-4.1	17.8	8	- 8.3	21	0	23	- 3.9	69	72	3	26	8	0	T	0	5.3	NW	20.6	SE	8	13	6	12	5.2	70
RICHMOND	49	1013.7	1020.1	5.6	- 5.0	0.2	-4.1	16.7	26+	-13.9	21	0	30	- 6.1	67	71	- 4	31	7	0	10	T	3.3	SW	11.2	NW	18	14	5	12	5.0	63
ROANOKE	358	976.6	1020.3	3.3	- 5.0	- 0.8	-4.4	15.0	7	-12.2	20	0	30	- 7.8	60	47	- 28	27	7	0	257	178	4.6	WNW	14.3*	NW	18	13	7	11	5.2	
WASHINGTON																																
OLYMPIA	58	1014.0	1021.1	8.9	1.7	5.3	0.5	13.9	31+	- 6.1	11	0	11	3.3	87	141	- 89	27	18	0	0	0	2.5	SSW	12.5*	SSW	23	1	3	27	9.0	
SEATTLE TACOMA	122	1007.2	1021.5	7.8	2.2	4.9	0.0	13.3	31+	- 3.9	11	0	8	2.2	86	147	- 13	27	21	0	T	0	3.3	SE	11.6*	SW	25+	1	4	26	8.9	
SEATTLE U	4			8.9	5.0	7.0	0.4	14.4	31	- 0.6	11	0	1			125	- 12	22	21		0	0			19.7	SW	25					13
SPOKANE	718	954.6	1025.3	- 0.6	- 5.6	- 3.1	-1.7	5.0	31+	-20.6	11	0	30	- 4.4	89	58	- 4	13	14	0	498	305	2.7	NE	13.0	SW	25	5	2	24	8.4	25
STAMPEDE PASS R	1206	882.6		0.0	- 5.6	- 3.0	-0.2	7.8	23	-12.2	11	0	31			192	-220	46	20	0	1308	1524						4	0	27	8.5	
TATOOSH ISLAND R	31	1016.2	1019.1	9.4	6.1	7.9	1.0	15.0	24	2.8	11+	0	0	5.0	84	384	75	98	22	0	0	0	9.3	ENE	25.5	S	24+	4	3	24	8.5	19
WALLA WALLA U	289			2.8	- 1.1	0.8	-2.4	16.1	23	- 8.3	11	0	24			51	4	15	12	0	79	51										
YAKIMA	323	986.3	1026.6	1.7	- 4.4	- 1.3	-1.1	10.6	25	-15.6	11	0	24	- 3.9	82	25	- 3	8	9	0	150		2.1	WSW	9.4*	NNE	9	3	2	26	8.5	
WEST INDIES																																
SAN JUAN P.R.	2	1013.7	1016.3	30.6	21.7	26.1	1.5	32.2	27+	19.4	28	2	0	21.7	78	17	-121	5	0	0	0	0	3.0	ENE	9.8	E	31+	11	19	1	4.3	71
SWAN ISLAND	9	1013.9		28.3	23.9	25.9	0.0	30.0	16+	20.6	24	0	0			33	-110	14	12	1	0	0						1	16	14	6.9	
WEST VIRGINIA																																
BECKLEY	763	928.7	1021.9	- 0.6	- 8.9	- 4.9		13.3	7	-19.4	21+	0	31	- 8.3	78	61		36	12	0	561	356	3.5	WNW	11.2*	SE	31	8	5	18	7.0	
CHARLESTON	286	984.5	1021.5	0.6	- 7.2	- 3.3	-6.4	15.0	7	-18.9	21	0	29	- 7.2	76	37	- 46	15	9	0	320	152	3.0	SW	10.3*	WNW	18+	4	10	17	7.0	
ELKINS	600	948.1	1020.2	0.0	-10.0	- 5.2		13.9	7	-22.8	22	0	31	- 8.3	77	42		12	14	0	368	152	3.5	W	15.6*	WNW	18	3	6	22	8.0	
HUNTINGTON	252	990.7	1022.2	0.6	- 7.8	- 3.7		15.6	7	-20.6	21	0	30	- 7.8	77	31	- 45	12	9	1	203	152	3.1	WSW	9.8*	WSW	8	6	10	15	6.8	
PARKERSBURG U	187			0.0	- 7.2	- 3.6	-5.7	15.6	7	-17.8	22+	0	30			30	- 42	10	9	1	206	127	3.2		13.4	W	18					33
WISCONSIN																																
GREEN BAY	208	995.7	1019.5	- 6.1	-15.6	-11.1	-5.2	8.9	7	-26.7	30	0	31	-15.6	72	19	- 11	10	9	0	104	25	4.3	WNW	12.5	N	26	14	4	13	5.2	60
LA CROSSE	199	995.8	1021.9	- 6.7	-15.0	-10.8	-5.2	7.8	7	-27.8	20	0	31	-14.4	71	12	- 17	5	8	0	193	102	4.2	S	11.6*	NNW	9	11	6	14	5.9	
MADISON	262	983.4	1020.8	- 6.1	-16.7	-11.5	-6.3	10.6	7	-27.2	23+	0	31	-15.6	71	17	- 17	6	7	0	208	152	3.6	WNW	13.0	W	27	12	3	16	5.9	53
MILWAUKEE	205	994.1	1020.4	- 5.6	-15.0	-10.4	-6.3	12.2	7	-26.1	31	0	31	-13.9	76	18	- 24	8	9	0	325	152	4.6	WNW	12.5	SW	13	12	9	10	4.9	58
WYOMING																																
CASPER	1618	838.9	1022.9	1.7	- 9.4	- 3.9	-1.3	11.1	5	-25.6	11	0	29	-11.7	60	8	- 4	4	6	0	130	51	6.1	SW	16.5*	WSW	6	9	4	18	6.4	
CHEYENNE	1867	813.7	1022.4	3.3	- 9.4	- 2.8	-1.7	13.9	6+	-23.9	11	0	29	-12.2	54	11	- 1	4	6	0	152	51	6.6	WNW	21.9	N	7	10	12	9	5.3	78
LANDER	1696	837.7	1025.4	- 1.1	-13.3	- 7.1	-2.2	12.8	5	-25.0	13+	0	31	-13.9	64	15	5	8	4	0	328	203	1.9	W	13.9	NW	7+	11	6	14	6.0	61
SHERIDAN	1202	887.5	1024.8	1.1	-11.1	- 5.0	-1.8	16.7	5+	-25.0	11	0	31	-10.6	69	23	7	6	13	0	467	178	3.6	NW	23.2	NW	6	9	8	14	6.3	54

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.

* Value entered in column "Fastest Mile" is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which "Fastest Mile" data can be evaluated.

A Maximum hourly average.

\+ And also on an earlier date or dates.

Ø Station pressures apply to elevations shown in the "Elevations - Station Pressure" table of the annual issue of this publication.

B Number of days maximum 21.1°C. or above for Alaskan Stations.

\# Wind direction to 8 compass points only.

Y Peak Gust.

Precipitation data in column headed "Greatest in 24 hours" are computed on a 24 hour basis without regard to calendar day and may include precipitation from the last day of the previous month or the first day of the following month.

Data in this table are obtained by conversion from data in the English Units table.

Z Sun continuously below horizon.

HEATING DEGREE DAYS

(Base 65°F.)

DECEMBER 1963

State and station	Current season: This month	Current season: Period July through this month	Normals: July through this month
ALABAMA			
Birmingham	869	1258	1139
Huntsville	958	1392	1228
Mobile	616	819	646
Montgomery	719	1045	925
ALASKA			
Anchorage	1237	4503	4838
Annette	792	2616	3026
Barrow	2139	8700	8511
Barter Island	2029	8290	8260
Bethel	1541	5934	5667
Cold Bay	1022	4298	4258
Cordova	990	3992	4298
Fairbanks	1890	6332	6435
Juneau	993	3618	3903
King Salmon	1239	5008	4952
Kotzebue	1792	6958	6654
McGrath	2029	6706	6386
Nome	1529	6270	6039
St. Paul Is.	1080	4820	4772
Shemya	989	4125	4255
Yakutat	1007	3744	3955
ARIZONA			
Flagstaff	1071	2559	2749
Phoenix (U)	313	423	
Phoenix	403	536	607
Prescott	780	1457	1648
Tucson	372	560	696
Winslow	1053	1734	1921
Yuma	222	285	335
ARKANSAS			
Ft. Smith	952	1360	1293
Little Rock	973	1353	1317
Texarkana	811	1060	984
CALIFORNIA			
Bakersfield	722	1066	821
Bishop	724	1475	1681
Blue Canyon	601	1917	1895
Burbank	264	462	527
Eureka (U)	456	1699	2027
Fresno	767	1207	1015
Long Beach	250	402	543
Los Angeles (U)	145	249	398
Los Angeles	220	328	641
Mt. Shasta (R)	816	2201	2186
Oakland	601	1138	1065
Point Arguello (R)	376	1282	1446
Red Bluff	661	1169	926
Sacramento (U)	693	1113	907
Sacramento	734	1197	923
Sandberg (R)	600	1457	1403
San Diego	202	323	444
San Francisco (U)	514	1190	1205
San Francisco	577	1141	1130
Santa Catalina	178	429	
Santa Maria	436	1030	1095
Stockton	794	1271	
COLORADO			
Alamosa	1437	3217	3567
Colorado Springs	1165	2094	2504
Denver	1125	2086	2280
Grand Junction	1166	1941	2242
Pueblo	1180	1964	2116
CONNECTICUT			
Bridgeport	1144	1990	1974
Hartford	1342	2340	2338
Middletown	1273	2451	
New Haven	1180	2094	2105
DELAWARE			
Wilmington	1128	1936	1836
DIST. OF COLUMBIA			
Washington (U)	985	1536	
Washington	1042	1690	1603
FLORIDA			
Apalachicola (U)	483	655	488
Daytona Beach	321	427	286
Fort Myers	189	224	133
Jacksonville	493	676	466
Key West	27	32	28
Lakeland (U)	284	363	221
Miami	85	110	65
Miami Beach	51	63	40
Orlando	272	347	261
Pensacola	595	829	549
Tallahassee	609	891	586
Tampa	316	406	231
West Palm Beach	114	144	71
GEORGIA			
Athens	859	1317	1164
Atlanta	907	1379	1207
Augusta	782	1176	963
Columbus	747	1109	963
Macon	722	1060	870
Rome	958	1534	1360
Savannah	653	928	730
Thomasville (U)	597	827	589
IDAHO			
Boise	1138	2046	2298
IDAHO (Cont'd.)			
Idaho Falls 46W (R)	1563	3245	3369
Idaho Falls 42NW(R)	1578	3271	3525
Lewiston	956	1937	2215
Pocatello	1345	2517	2739
ILLINOIS			
Cairo (U)	1090	1543	1504
Chicago (Midway)	1454	2189	2251
Chicago (O'Hare)	1599	2585	
Moline	1585	2445	2413
Peoria	1534	2367	2291
Rockford	1605	2493	2587
Springfield	1420	2154	2113
INDIANA			
Evansville	1258	1918	1801
Ft. Wayne	1409	2235	2370
Indianapolis	1437	2235	2180
South Bend	1407	2269	2391
IOWA			
Burlington	1508	2287	2318
Des Moines	1542	2358	2456
Dubuque	1645	2669	2842
Sioux City	1530	2447	2667
Waterloo	1691	2702	2762
KANSAS			
Concordia	1288	1976	2019
Dodge City	1186	1817	1889
Goodland	1260	2179	2351
Topeka	1286	1889	1979
Wichita	1184	1766	1785
KENTUCKY			
Lexington	1217	1897	1804
Louisville	1178	1829	1849
LOUISIANA			
Alexandria	747	1061	
Baton Rouge	607	799	631
Lake Charles	576	734	564
New Orleans (Audubon Park)	515	612	
New Orleans	583	762	558
Shreveport	772	1018	848
MAINE			
Caribou	1741	3829	3790
Greenville (U)	1684	3771	
Portland	1497	3007	2790
MARYLAND			
Baltimore (U)	1010	1572	1508
Baltimore	116	1934	1802
MASSACHUSETTS			
Blue Hill Obs. (R)	1302	2410	2286
Boston	1207	2064	1971
Nantucket	1053	1997	1995
Pittsfield	1431	2936	2889
Worcester	1383	2645	2583
MICHIGAN			
Alpena	1447	3026	3044
Detroit (City AP)	1269	2073	2279
Detroit (M. Wayne Co.)	1365	2459	2382
Detroit (Willow Run)	1288	2279	2301
Escanaba (U)	1447	2890	3145
Flint	1362	2501	2606
Grand Rapids	1345	2347	2557
Lansing	1370	2474	2573
Marquette (U)	1422	2812	3111
Muskegon	1299	2349	2563
S. Ste. Marie	1502	3161	3496
MINNESOTA			
Duluth	1715	3242	3854
Internat. Falls	1917	3635	4207
Minneapolis	1703	2874	3255
Rochester	1714	2928	3132
St. Cloud	1764	3061	3414
MISSISSIPPI			
Jackson	810	1105	882
Meridian	828	1203	938
Vicksburg (U)	801	1062	794
MISSOURI			
Columbia	1321	1947	1923
Kansas City	1225	1719	1838
St. Joseph	1360	1964	2098
St. Louis (RFC)	1222	1773	1698
St. Louis	1320	2010	1856
Springfield	1198	1784	1745
MONTANA			
Billings	1316	2531	2680
Butte	1471	3417	
Glasgow	1503	2917	3526
Great Falls	1279	2548	2859
Havre	1508	3024	3369
Helena	1484	3003	3252
Kalispell	1327	3209	3568
Miles City	1396	2543	2956
Missoula	1449	3193	3384
NEBRASKA			
Grand Island	1328	2280	2373
Lincoln (U)	1362	2051	2174
Norfolk	1455	2427	2624
North Platte	1329	2394	2620
Omaha	1458	2217	2346
Omaha N. Omaha AP	1487	2294	2560
Scottsbluff	1269	2297	2632
Valentine	1397	2465	2858
NEVADA			
Elko	1228	2751	2950
Ely	1152	2707	3020
Las Vegas	626	938	1063
Reno	921	2230	2496
Tonopah	937	2047	
Winnemucca	1048	2273	2747
NEW HAMPSHIRE			
Concord	1472	2833	2907
Mt. Washington Obs. (R)	2024	6116	
NEW JERSEY			
Atlantic City	1059	1770	1719
Atlantic City (U)	1020	1776	
Newark	1100	1801	1842
Trenton (U)	1097	1839	1821
NEW MEXICO			
Albuquerque	931	1628	1721
Clayton	1020	1741	1980
Raton	1121	2162	2467
Roswell	921	1492	1691
Silver City	767	1371	
NEW YORK			
Albany	1446	2652	2568
Binghamton	1409	2891	2784
Buffalo	1282	2490	2601
New York (U)	1040	1730	1696
New York (LaGuardia)	1063	1703	1665
Rochester	1335	2526	2453
Schenectady	1365	2530	
Syracuse	1365	2535	2478
NORTH CAROLINA			
Asheville (U)	1038	1770	1623
Cape Hatteras (R)	732	1068	872
Charlotte	904	1370	1247
Greensboro	1008	1693	1516
Raleigh	933	1552	1351
Wilmington	701	1068	886
Winston-Salem	999	1621	1422
NORTH DAKOTA			
Bismarck	1683	3107	3447
Devils Lake (U)	1830	3386	3833
Fargo	1748	3057	3564
Grand Forks FAA	1814	3199	
Pembina	1901	3433	
Williston	1620	3052	
OHIO			
Akron	1372	2408	2378
Cincinnati (U)	1184	1741	
Cincinnati	1296	2083	1924
Cincinnati Obs.	1257	1896	1835
Cleveland	1326	2358	2444
Columbus	1336	2226	2092
Columbus (U)	1283	1995	
Dayton	1335	2119	2119
Mansfield	1391	2369	2420
Toledo	1399	2406	2469
Youngstown	1368	2541	2344
OKLAHOMA			
Oklahoma City	988	1399	1483
Tulsa	1038	1439	1388
OREGON			
Astoria	629	1823	2129
Burns (U)	1152	2672	2754
Eugene	699	1658	1867
Meacham	1084	2948	3085
Medford	893	1897	1886
Pendleton	993	1986	2102
Portland (U)	667	1431	1583
Portland	830	1857	1834
Roseburg	703	1609	1752
Salem	770	1849	1828
Sexton Summit (R)	694	2458	2319
PENNSYLVANIA			
Allentown	1235	2184	2181
Erie	1222	2258	2295
Harrisburg	1173	2142	1971
Philadelphia (U)	1016	1566	
Philadelphia	1144	2013	1942
Pittsburgh (U)	1201	1957	1896
Pittsburgh	1315	2327	2278
Reading (U)	1115	1847	1847
Scranton	1254	2301	2496
Williamsport	1220	2269	2285
RHODE ISLAND			
Block Island	1076	1998	1882
Providence	1242	2224	2167
SOUTH CAROLINA			
Charleston (U)	609	828	669
Charleston	650	918	812
Columbia	779	1174	1006
Florence	778	1175	945
Greenville-Spartanburg	880	1337	
SOUTH DAKOTA			
Huron	1658	2786	3024
Pierre	1429	2494	
Rapid City	1305	2332	2749
Sioux Falls	1603	2708	3007
TENNESSEE			
Bristol	1148	1800	1724
Chattanooga	940	1415	1384
Knoxville	1072	1716	1446
Memphis (U)	969	1317	1158
Memphis	1034	1429	1241
Nashville	1062	1603	1415
Oak Ridge	1064	1699	1534
TEXAS			
Abilene	725	984	1051
Amarillo	1000	1511	1647
Austin	610	747	644
Brownsville	342	390	215
Corpus Christi	440	509	340
Dallas	749	1015	907
Del Rio	587	713	
El Paso	683	1041	1069
Fort Worth	760	991	925
Galveston (U)	480	560	408
Houston (U)	480	573	453
Houston	551	659	472
Laredo	456	531	322
Lubbock	872	1335	1449
Midland	761	1039	1060
Port Arthur	579	724	591
San Angelo	747	1023	861
San Antonio	592	733	601
Victoria	499	594	426
Waco	726	936	769
Wichita Falls	825	1112	1153
UTAH			
Milford	1201	2275	2550
Salt Lake City	1252	2291	2302
Wendover	1209	2245	2333
VERMONT			
Burlington	1609	3246	2886
VIRGINIA			
Lynchburg	1070	1726	1636
Norfolk	920	1504	1242
Richmond	1004	1711	1517
Roanoke	1063	1763	1654
WASHINGTON			
Olympia	721	1941	2148
Seattle (U)	626	1531	1755
Seattle	660	1536	1992
Seattle-Tacoma	743	1861	2130
Spokane	1186	2554	2741
Stampede Pass (R)	1181	3830	3844
Tatoosh Island (R)	578	2118	2459
Walla Walla	984	1865	
Walla Walla (U)	971	1807	1921
Yakima	1093	2344	2473
WEST VIRGINIA			
Beckley	1288	2425	
Charleston	1200	2032	1745
Elkins	1306	2646	
Huntington	1222	2001	1629
Parkersburg (U)	1218	1991	1835
WISCONSIN			
Green Bay	1635	2983	3125
La Crosse	1623	2632	2931
Madison	1660	2880	2846
Milwaukee	1601	2703	2663
WYOMING			
Casper	1236	2422	3021
Cheyenne	1174	2328	2912
Lander	1415	2709	3339
Sheridan	1293	2508	3113

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

STORM SUMMARY

DECEMBER 1963

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				ø ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
Alabama																		0	0	6	5	0	0	5	5				
Alaska										0	0	4	0																
Arizona *																													
Arkansas										1	0	4	0					2	?	5	0								
California										5	6	3	0																
Colorado										0	0	4	0																
Connecticut *																													
Delaware *																													
Florida *																													
Georgia																						0	0	7	0				
Hawaii *																													
Idaho																											12	4	
Illinois *																													
Indiana																										1	0	0	0
Iowa *																													
Kansas																						8							
Kentucky *																													
Louisiana										1	2	?	0					0	0	5	0	0	0	3	0	0	0	5	5
Maine *																													
Maryland										0	0	3	0	81	0	6	0	1	0	4	0								
Massachusetts										0	1	3	0					0	0	3	0								
Michigan *																													
Minnesota *																													
Mississippi																		0	1	5	0	0	0	3	0	0	0	4	4
Missouri										0	0	4	0									0	0	4					
Montana *																													
Nebraska										0	0	5	0																
Nevada N																													
New Hampshire										0	4	3	0																
New Jersey										0	0	4	0																
New Mexico *																													
New York																		8	2	5									
North Carolina										0	0	4	0									0	15	5	0				
North Dakota																		4	0	0	0								
Ohio *																													
Oklahoma										0	0	?	?									0	0	?	?				
Oregon *																													
Pacific Area																										0	Few	S	S
Pennsylvania *																													
Puerto Rico *																													
Rhode Island *																													
South Carolina																						0	26	6	5				
South Dakota																		0	?	?	0								
Tennessee																		2	1	5	0								
Texas *																													
Utah N																													
Vermont *																													
U.S. Virgin Is. *																													
Virginia *																													
Washington *																													
West Virginia *																													
Wisconsin *																													
Wyoming *																													

* No occurrence of storms or unusual weather phenomena.
‡ Includes heavy sleet storm.
\# Freezing drizzle and freezing rain, commonly known as glaze.
ø For breakdown of "All Others", and for detailed listing of other storms, see the U. S. Weather Bureau monthly publication STORM DATA.
N No report received by printing deadline.
S Typhoon SUSAN hit Eniwetok, Guam, Rota, Tinian, Saipan, and Marcus Island; damage to property and crops. Amount of damage unknown. Will publish later in Mariners Weather Log, May 1964 and Climatological Data, National Summary Annual 1963.

† Storm damages are placed in categories varying from 1 to 9 as follows:
1 Less than $50
2 $50 to $500
3 $500 to $5,000
4 $5,000 to $50,000
5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 to $500,000,000
9 $500,000,000 to $5,000,000,000

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

DECEMBER 1963

The only flooding reported in continental United States during December was in South Carolina. It was very shallow and no damage was reported. Near record low stages were reached on the Lower Mississippi near the end of the month.

ATLANTIC SLOPE DRAINAGE

Most streams in Maine were ice-covered by the end of the month. Snow depth ranged from negligible amounts to more than 12 inches at the higher altitudes.

This was the coldest December at Boston, Mass., since 1917. The monthly temperature averaged 25.9°, which was 7.4° below normal.

The Lehigh River at Lehighton, Pa., was frozen over from the 27th to the 31st. Snow on the ground on the 31st averaged 10 inches above the Blue Mountain and 5 inches in the lower basin. The Lackawaxen River at Hawley, Pa., was frozen over from the 21st to the 31st except on the 27th. Snow on the ground ranged from 7 inches at Hawley, Pa., to 13 inches at Pleasant Mount on the 31st.

Ice began to form over the Susquehanna Basin in Pennsylvania during the second week of December. It was estimated to be 6 to 7 inches thick by the end of the month. The average snow cover over the basin by the end of December was 7 inches with an average density of 18 percent.

A substantial rise occurred along the middle and lower Pee Dee River in South Carolina with a crest near 15.1 feet at Peedee on the 18th. This was about 4 feet below flood stage. Shallow flooding occurred along the South Carolina coast on the 31st due to northeasterly gale winds 40 to 50 m.p.h.

Heavy rains during the latter part of November ranging up to 4 inches caused the Saluda River at Pelzer, S. C., to rise to flood stage on December 1. No damage was reported.

MISSISSIPPI SYSTEM

Upper Mississippi Basin.--Navigation on the Mississippi River closed at St. Paul, Minn., on the 9th and at La Crosse, Wis., and Guttenberg, Iowa, on the 14th. The last tow went downstream at Burlington, Iowa, on the 18th bucking 6 inches of ice, ending another record-breaking navigation season for total tonnage hauled on the Main Stem.

Floating ice was reported in the Mississippi River at Cape Girardeau, Mo., from the 17th to the 26th. At times the river was full of heavy floating ice which hampered navigation. The extreme low stages between St. Louis, Mo., and Cairo, Ill., made navigation difficult. Heavy draft boats and barges were forced to stay in the Cairo Harbor. Following are some of the lowest levels reached compared to the lowest levels of record:

St.Louis,Mo. -5.2 ft. Dec.20, 1963; -6.1 ft. Jan.16, 1940

Chester,Ill. -4.1 ft. Dec.20, 1963; -4.1 ft. Jan. 3, 1900

Missouri Basin.--Ice began to form on the Missouri River at Sioux City, Iowa, on the 9th and 10th. By the 11th and 12th the Missouri became choked with heavy ice. It was generally frozen over from the 12th to the end of the month. Small tributary streams to the Missouri generally froze over on the 9th and 10th. Intermittent ice blocked the Missouri in the reach from Plattsmouth, Nebr., to Jefferson City, Mo., after the 14th. The temperatures from the 8th to the 21st were unseasonably cold, averaging 20° to 30° below normal. Most of the precipitation during this period fell as snow, totalling 5 to 7 inches. A warmer trend during the last 10 days of the month melted most of the snow cover except for about 1 inch in the tri-state area of northwest Iowa.

Ohio Basin.--Air temperatures well below normal resulted in an ice cover forming on the Allegheny, Monongahela, and the upper Ohio and major tributary streams. As of December 31, the Allegheny River was frozen over intermittently from Pittsburgh upstream to Olean, N. Y., with ice thickness varying from 1 to 16 inches. The immediate areas above the navigation dams in the upper pools on the Monongahela River from Lock 4, Charleroi, Pa., upstream to Lock 15, Hoult, W. Va., were frozen over with ice 1 to 7 inches thick. The upper Ohio River from Pittsburgh downstream to Dam 13, McMechen, W. Va., reported thin ice.

The Scioto River above Columbus, Ohio, was frozen over after mid-December. There was some shore ice and floating ice from Columbus downstream the last half of the month. Precipitation was generally less than 50 percent of normal.

Increased flow from the end-of-November storm produced open river conditions on the Ohio River from Portsmouth, Ohio, to Meldahl Dam December 1 to 4. This was the first time that any navigation dams were lowered since August 5. With this exception, the Ohio was in pool throughout December. The prolonged drought was reflected in the generally falling discharge throughout the month. At Golconda, Ill., the Ohio River flow declined to about 20,000 c.f.s., a near record low for this time of year, and 70,000 c.f.s. below the average minimum for the end of December. Rainfall on the 10th and 11th produced enough runoff to cause a slight rise on the Cumberland River. Light ice (1/2 inch thick) was reported at Dams 16 to 23 on the 20th, which thickened to 1 to 2 inches by the 23d due to severely cold weather. A moderating trend began on Christmas Day, which melted away most of this ice by the 27th. Another cold spell beginning on the 29th formed light ice again on the upper Ohio pools which persisted through the end of the month. The light floating ice caused minor trouble in locking boats through the dams.

Arkansas Basin.--No precipitation was reported in the Arkansas Basin on 23 days during December. Light to heavy snow fell over the basin on the 20th-23d. The Arkansas River at Tulsa, Okla., had a monthly average stage of 2.0 feet, 2.4 feet below normal. This was the fourth coldest December on record for the Wichita, Kans., area.

Lower Mississippi Basin.--Ice in the Mississippi River reached to below New Madrid, Mo., on December 22. By the 27th, the ice had cleared out at this point. The river at New Madrid reached a stage of -0.3 foot on the 31st which tied the previous record low stage of January 22, 1956. On January 1, 1964, the river at New Madrid reached a record low stage of -0.8 foot.

The Mississippi River was below 0.0 foot (zero) at Memphis, Tenn., from September 10 through December 2 for a total of 84 days. The record is 97 consecutive days in 1953. It was below zero again on the 5th and 6th and from the 10th to the end of December. The Missis-

sippi reached its lowest stage (-3.6 ft.) on the 27th through the 31st at Memphis since January 24, 1956, when it reached the record low stage of -5.35 feet.

PACIFIC SLOPE DRAINAGE

Sacramento and San Joaquin Basins.--December was one of the driest of record in California. Not since 1912 had so little precipitation been recorded statewide during December. Precipitation averaged about 15 percent of normal in the Sacramento Basin and 20 percent or less in the San Joaquin Basin.

Columbia Basin.--December precipitation was deficient over much of the Columbia Basin. It averaged generally less than 75 percent of normal over most of Oregon and southern Idaho. In northwestern and central Washington and western Montana, precipitation averaged in excess of 125 percent of normal. The mean monthly stage of the Willamette River at Portland, Oreg., was 3.7 feet, 1.8 feet below the 85-year normal. This was the lowest December average since 1954.

FLOOD STAGE DATA

(All dates in December unless otherwise specified)

River and station	Flood stage	Above flood stages -dates		Crest*	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE	*Ft.*			*Ft.*	
Saluda: Pelzer, S. C.	6	1	1	6.0	1

* Provisional

RAWINSONDE DATA

Average monthly values

DECEMBER 1963

ALBANY, N. Y. 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
SURFACE	31	86	- 9.7	78	295	2.7
1000	31	133			299	5.4
950	31	530	- 8.8	73	296	14.0
900	31	949	-10.6	76	296	18.6
850	31	1,389	-11.3	71	296	19.6
800	31	1,852	-13.1	68	294	23.1
750	31	2,341	-14.9	62	291	24.7
700	31	2,863	-16.5	54	284	28.6
650	31	3,418	-18.8	48	280	33.2
600	31	4,010	-21.5	42	276	37.7
550	31	4,650	-25.2	38	271	42.0
500	31	5,335	-29.7	36	269	47.4
450	31	6,077	-34.6		270	49.5
400	31	6,894	-39.5		267	55.8
350	31	7,798	-44.6		263	59.6
300	31	8,819	-49.5		261	62.7
250	31	10,002	-52.6		259	66.4
200	31	11,436	-54.7		260	59.8
175	31	12,293	-54.3		264	57.9
150	31	13,280	-55.1		262	55.2
125	30	14,441	-55.8		261	50.5
100	30	15,855	-57.9		260	40.7
80	30	17,256	-59.2		258	45.6
70	30	18,093	-59.5		259	44.3
60	28	19,059	-59.4		261	41.6
50	26	20,207	-59.0		267	31.7
40	25	21,619	-58.8		262	32.8
30	23	23,433	-57.6		259	34.4
25	22	24,595	-55.6		259	35.7
20	20	25,998	-54.3		256	40.6
15	17	27,865	-52.1		259	38.9
10	5	30,354	-52.1			
7						

ALBUQUERQUE, N. MEX. 842 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
30	1,619	- 2.5	56	16	4.3
30	226				
30	645				
30	1,083				
30	1,538				
30	2,026	.4	36	331	7.4
30	2,541	- .9	34	311	11.5
30	3,091	- 3.0	31	306	15.3
30	3,673	- 5.8	30	308	18.1
30	4,300	- 8.9		309	19.6
30	4,963	-12.9		304	22.1
30	5,690	-17.9		306	26.2
30	6,461	-24.0		301	24.5
30	7,318	-30.9		307	28.2
30	8,251	-38.1		306	28.9
30	9,294	-45.9		299	33.0
30	10,486	-53.8		300	39.2
30	11,900	-59.1		293	36.7
30	12,733	-60.6		284	42.0
30	13,692	-61.5		291	42.3
30	14,817	-63.7		289	41.6
30	16,178	-65.6		291	38.1
30	17,535	-65.7		293	30.7
30	18,353	-65.1		300	25.8
30	19,289	-64.2		297	22.7
30	20,409	-62.5		295	20.4
28	21,796	-60.7		302	20.2
28	23,599	-57.9		293	23.3
25	24,755	-56.1		282	28.4
23	26,197	-52.4		272	33.8
14	28,127	-47.8		267	45.3
5	31,022	-38.3			

AMARILLO, TEXAS 895 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	1,095	- 3.5	70	276	3.5
31	208				
31	623				
31	1,057				
31	1,508	.9	49	289	7.6
31	1,995	.5	41	290	10.1
31	2,512	- .6	32	291	12.8
31	3,061	- 3.2	30	293	16.5
31	3,640	- 6.1		295	18.1
31	4,267	- 9.6		293	25.4
31	4,928	-13.7		288	27.0
31	5,651	-18.9		287	29.3
31	6,419	-24.9		286	33.0
31	7,272	-31.5		284	38.3
31	8,204	-38.7		283	39.8
31	9,246	-46.1		280	45.6
31	10,437	-53.9		279	48.6
31	11,851	-58.9		280	52.1
30	12,686	-60.1		281	52.1
30	13,648	-61.0		282	49.1
30	14,777	-62.6		279	48.0
30	16,149	-64.5		285	45.1
30	17,508	-65.0		282	35.9
30	18,327	-64.7		285	30.7
30	19,264	-63.5		286	26.8
29	20,385	-62.3		288	23.5
29	21,767	-60.8		290	22.1
27	23,563	-57.9		282	27.2
27	24,719	-55.6		278	32.2
24	26,150	-52.7		272	36.5
16	28,034	-50.4		263	39.6

ANCHORAGE, ALASKA 1000 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	29	- 4.0	78	351	1.6
31	28			28	1.9
31	435	- .7	61	65	4.7
31	868	- .9	56	114	10.1
31	1,322	- 3.7	59	123	14.6
31	1,799	- 6.5	62	130	19.0
31	2,299	- 9.0	60	143	21.6
31	2,833	-11.7	52	154	21.2
31	3,391	-15.5	49	167	20.8
31	3,997	-19.4	46	171	21.6
31	4,633	-23.6	46	177	21.6
31	5,329	-28.2	46	185	21.4
31	6,069	-33.6	47	186	22.0
31	6,893	-40.1		188	23.5
31	7,791	-46.8		193	24.1
31	8,797	-53.2		196	29.5
31	9,959	-57.5		209	31.5
31	11,367	-56.9		216	28.2
31	12,216	-55.3		222	24.7
31	13,201	-54.8		227	25.4
31	14,366	-55.2		231	25.6
30	15,786	-55.3		243	24.9
29	17,207	-56.3		252	26.4
29	18,052	-57.0		257	28.0
29	19,027	-58.1		263	31.7
29	20,173	-58.9		273	37.3
29	21,590	-59.2		279	40.6
28	23,404	-60.2		285	50.5
25	24,555	-60.8		290	54.0
22	25,938	-62.2		296	62.5
12	27,675	-62.8			

* ANNETTE, ALASKA 1011 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	37	3.9	76	147	8.0
31	129			126	8.5
31	537	1.6	72	144	14.6
31	974	- .6	72	162	17.5
31	1,430	- 2.9	72	180	17.3
31	1,909	- 4.7	56	201	15.7
31	2,414	- 6.8	56	217	15.2
31	2,952	- 9.7	56	226	15.2
31	3,518	-12.9	51	227	20.2
31	4,128	-16.5	49	233	22.7
31	4,773	-21.0	49	237	24.3
31	5,476	-25.4	48	245	28.0
31	6,227	-30.9	46	253	30.9
31	7,059	-37.1	45	254	34.8
31	7,970	-43.6		252	35.9
30	8,999	-50.4		258	35.7
29	10,169	-56.6		263	45.8
29	11,577	-58.3		274	42.5
29	12,418	-57.7		278	36.7
29	13,392	-57.0		276	33.6
28	14,551	-57.4		278	33.8
28	15,956	-58.5		283	30.9
27	17,362	-58.7		284	29.7
26	18,206	-59.1		290	32.4
26	19,169	-59.7		293	29.9
26	20,306	-60.5		297	31.7
26	21,693	-61.2		303	34.0
23	23,481	-62.9		307	45.1
21	24,612	-62.5		306	49.1
20	26,010	-63.4		315	53.2
20	27,766	-66.0		321	63.1
17	30,215	-65.6		322	77.5
11	32,540	-63.3			

ATHENS, GA. 991 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
SURFACE	31	246	- 1.2	79	291	2.7
1000	31	171				
950	31	582	1.6	53	303	8.2
900	31	1,019	1.5	48	294	11.3
850	31	1,480	1.4	48	282	15.3
800	31	1,967	0.0	48	273	22.5
750	31	2,482	- 1.8	46	272	28.6
700	31	3,030	- 3.7	43	272	35.9
650	31	3,608	- 6.4	40	272	40.0
600	31	4,235	- 9.9	39	268	48.8
550	31	4,897	-13.6	38	265	55.0
500	31	5,620	-18.0	36	266	58.1
450	31	6,392	-23.3		263	63.3
400	31	7,251	-29.5		262	70.3
350	31	8,190	-36.5		261	78.3
300	31	9,240	-44.3		260	88.2
250	31	10,439	-52.6		262	95.2
200	31	11,858	-58.2		263	92.5
175	31	12,697	-59.6		264	90.5
150	31	13,655	-61.6		268	85.5
125	31	14,778	-64.3		271	71.5
100	31	16,136	-65.6		268	63.3
80	29	17,484	-66.0		267	43.1
70	29	18,298	-65.0		267	39.4
60	29	19,237	-63.7		268	31.5
50	29	20,361	-61.8		265	34.0
40	29	21,752	-58.8		265	30.7
30	29	23,576	-54.0		264	35.0
25	29	24,757	-49.5		260	37.5
20	27	26,222	-45.9		257	47.0
15	19	28,151	-43.3		253	58.7
10						

* BARROW, ALASKA 1013 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	8	-19.6	68	83	6.6
31	105			96	11.8
31	498	-13.2	70	112	15.0
31	908	-10.4	62	104	12.2
31	1,348	-10.5	55	110	10.9
31	1,813	-12.5	54	109	9.3
31	2,302	-14.9	52	122	8.2
31	2,823	-17.7	53	141	6.4
31	3,373	-21.1	53	163	5.6
31	3,960	-25.0	52	178	5.6
31	4,586	-29.2	50	203	7.4
31	5,262	-33.9	51	216	9.5
31	5,991	-39.1		223	8.7
31	6,791	-44.4		242	10.5
31	7,674	-50.0		237	12.2
31	8,665	-56.1		247	14.2
31	9,817	-59.1		253	16.9
31	11,214	-59.1		254	16.9
31	12,053	-58.3		258	19.2
31	13,022	-58.7		258	21.6
31	14,165	-59.4		259	23.9
30	15,552	-60.6		262	27.0
29	16,932	-61.7		267	36.3
27	17,757	-62.4		270	39.0
26	18,701	-63.7		277	43.3
25	19,816	-64.9		279	50.7
25	21,172	-66.1		284	58.3
23	22,926	-67.3		282	73.8
20	24,045	-68.3		289	78.7
16	25,404	-69.0		291	92.1
13	27,155	-69.0		292	109.8
5	29,773	-65.3			

BARTER IS., ALASKA 1013 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	15	-17.8	75	93	4.9
31	113			106	9.3
31	508	-12.1	56	116	10.5
31	918	- 9.0	43	131	7.8
31	1,361	- 9.4	36	139	7.2
31	1,827	-10.8	33	139	7.8
31	2,320	-13.2	32	137	7.6
31	2,844	-16.2	34	149	7.4
31	3,396	-19.4	38	162	7.2
31	3,988	-23.5	42	179	7.0
31	4,615	-27.7	45	195	6.8
31	5,298	-32.6	45	218	8.7
31	6,029	-37.8	47	227	9.7
31	6,835	-43.6		237	11.3
31	7,721	-49.3		244	15.5
31	8,717	-55.6		253	16.7
31	9,866	-59.2		254	18.8
31	11,264	-58.7		264	20.4
30	12,104	-58.6		265	22.3
30	13,072	-58.8		268	24.7
29	14,211	-59.4		267	28.7
27	15,604	-60.4		271	32.6
26	16,990	-61.5		276	37.5
26	17,820	-62.4		276	40.0
26	18,764	-63.7		276	44.3
25	19,879	-64.9		282	48.0
25	21,235	-66.2		281	52.1
22	22,980	-67.6		285	62.4
17	24,068	-68.9		292	63.5
8	25,335	-70.3			

BETHEL, ALASKA 993 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
30	39	- 9.5	84	56	6.6
30	- 18			92	5.4
30	384	- 3.7	73	93	12.4
30	810	- 4.5	71	125	14.2
30	1,258	- 6.3	69	142	13.0
30	1,731	- 8.4	65	145	12.6
30	2,224	-11.0	62	144	12.4
30	2,757	-14.1	60	144	13.6
30	3,314	-17.4	59	147	13.2
30	3,911	-21.0	54	152	15.0
30	4,543	-25.3	51	157	16.5
30	5,234	-30.4	52	161	17.5
30	5,970	-36.0	53	160	18.5
30	6,783	-42.1		165	21.8
30	7,673	-48.2		170	24.5
30	8,674	-53.7		174	27.2
29	9,841	-55.6		179	26.4
28	11,268	-53.1		189	22.7
27	12,133	-53.0		195	21.8
27	13,128	-52.6		203	20.2
27	14,305	-53.0		213	19.6
27	15,741	-53.4		225	22.1
27	17,177	-53.6		236	23.7
27	18,036	-53.5		244	26.4
27	19,026	-54.3		251	27.6
27	20,193	-54.9		255	32.2
27	21,621	-55.5		267	33.6
26	23,421	-57.3		279	41.8
25	24,584	-57.8		280	48.0
24	25,920	-59.8		287	55.9

BISMARCK, N. DAK. 961 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	505	-14.2	72	311	4.7
31	198				
31	591	-13.6	63	293	5.8
31	1,004	- 9.7	58	311	15.0
31	1,446	- 8.8	57	318	20.0
31	1,916	- 9.5	58	322	22.9
31	2,410	-10.8	58	320	25.6
31	2,942	-12.7	53	323	28.6
31	3,500	-15.3	52	319	32.2
31	4,106	-18.2	47	318	35.7
31	4,765	-21.9	47	319	39.8
31	5,447	-26.5	45	317	40.6
31	6,192	-32.0	44	317	42.3
31	7,023	-37.7		317	45.1
31	7,931	-44.2		317	51.3
31	8,948	-51.3		314	46.2
31	10,117	-56.5		312	46.6
31	11,527	-57.7		310	43.3
31	12,370	-57.4		309	42.9
31	13,344	-57.3		305	42.0
31	14,495	-58.2		306	41.6
31	15,897	-59.0		306	39.0
30	17,286	-60.5		304	38.3
30	18,118	-60.8		304	38.1
29	19,072	-61.6		303	40.4
29	20,198	-61.8		303	39.0
26	21,570	-62.6		298	42.0
26	23,347	-61.9		291	45.8
24	24,494	-61.4		288	45.3
23	25,891	-61.1		276	54.4
11	27,791	-56.9			

BOISE, IDAHO 925 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
SURFACE	31	868	- 3.6	91	146	1.2
1000	31	247				
950	31	655				
900	31	1,086	- 2.9	76	143	2.1
850	31	1,541	- 1.4	69	166	2.7
800	31	2,024	- 1.2	57	267	6.6
750	31	2,535	- 2.5	53	285	12.2
700	31	3,083	- 5.0	50	293	15.0
650	31	3,657	- 7.9	48	300	17.1
600	31	4,280	-11.8	47	296	20.0
550	31	4,937	-15.8	43	293	23.3
500	31	5,654	-20.5	37	291	26.8
450	31	6,427	-25.8	37	295	30.5
400	31	7,270	-32.0		292	34.8
350	30	8,202	-39.1		289	37.9
300	30	9,242	-46.9		291	42.0
250	30	10,427	-55.1		301	45.8
200	30	11,832	-60.6		300	47.6
175	30	12,663	-60.7		301	42.7
150	28	13,616	-60.5		299	40.6
125	27	14,751	-61.5		300	34.2
100	26	16,123	-62.0		302	32.2
80	26	17,500	-62.8		306	28.6
70	26	18,329	-62.5		306	26.4
60	25	19,277	-61.9		307	26.4
50	24	20,413	-61.6		309	24.9
40	21	21,790	-61.8		314	25.3
30	18	23,555	-62.9		306	31.1
25	14	24,698	-61.6			
20	11	26,113	-60.0			
15	5	27,979	-55.4			
10						
7						
5						
4						

* BROWNSVILLE, TEXAS 1021 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	7	9.5	86	333	5.8
31	179	11.4	81	344	7.0
31	609	11.1	77	38	3.7
31	1,059	10.4	73	172	2.3
31	1,535	9.1	66	265	4.9
31	2,036	7.7	65	263	9.7
31	2,564	5.6	58	272	14.2
31	3,128	2.9	56	270	16.5
31	3,717	- .1	51	267	22.9
30	4,363	- 3.7	50	267	24.9
29	5,035	- 8.3	49	264	27.8
29	5,779	-12.7	50	262	35.7
29	6,563	-18.0	51	260	39.8
29	7,447	-23.9	51	260	50.5
29	8,408	-30.8	51	259	62.2
29	9,484	-38.9	50	261	68.6
29	10,710	-48.2		262	82.6
29	12,148	-57.1		259	97.3
29	12,985	-60.6		258	92.3
28	13,935	-64.1		257	83.3
28	15,042	-67.5		255	69.9
27	16,372	-71.9		258	55.4
26	17,681	-73.0		260	43.9
26	18,472	-71.1		259	33.4
23	19,392	-67.6		263	23.7
21	20,503	-63.0		265	19.0
20	21,890	-59.4		263	19.4
19	23,722	-53.2		262	24.1
19	24,908	-49.0		264	24.3
18	26,377	-46.9		265	21.2
18	28,290	-45.0		250	8.4
17	31,016	-40.5		256	33.8
14	33,464	-35.5			
13	35,822	-32.1			
6	37,412	-29.3			

BUFFALO, N. Y. 990 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	218	- 5.9	78	259	3.1
31	139				
31	539	- 7.3	74	269	8.9
31	961	- 9.6	76	267	12.8
31	1,401	-11.2	73	268	16.7
31	1,864	-13.4	72	271	21.4
31	2,354	-15.3	65	274	24.9
31	2,873	-17.0	54	275	27.0
31	3,425	-19.1	43	278	29.3
31	4,019	-22.1	38	276	32.6
31	4,651	-25.6		276	36.1
31	5,340	-29.8	41	276	38.9
31	6,077	-34.8		275	42.2
31	6,897	-40.2		274	49.1
31	7,798	-45.2		272	55.6
31	8,815	-50.2		271	62.9
31	9,996	-53.3		272	64.1
31	11,430	-53.6		270	60.0
31	12,288	-54.1		270	57.5
31	13,274	-55.2		269	57.3
31	14,434	-56.6		267	53.6
31	15,844	-58.3		266	50.7
30	17,245	-58.9		266	45.5
29	18,084	-59.0		265	41.4
29	19,004	-60.1		266	42.5
27	20,190	-60.1		263	40.4
27	21,586	-59.1		263	43.7
24	23,398	-57.0		264	43.7
24	24,559	-54.7		264	48.4
22	25,978	-51.5		260	53.4
18	27,850	-49.9		256	52.6

* BURRWOOD, LA. 1021 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
31	3	10.8	80	27	10.9
31	178	10.2	70	27	11.5
31	607	8.2	66	38	7.6
31	1,051	8.0	54	325	5.1
31	1,522	6.9	48	292	9.3
31	2,019	5.3	46	279	14.6
31	2,542	3.3	44	276	19.6
31	3,102	.9	40	271	22.7
31	3,692	- 2.2	40	272	23.5
31	4,327	- 5.5	36	267	30.9
31	4,996	- 9.5	35	265	35.2
31	5,735	-14.2	33	264	39.6
31	6,521	-19.6	34	263	45.1
31	7,391	-25.7	38	259	50.5
31	8,345	-32.3	38	258	58.1
31	9,415	-40.0	39	256	59.0
31	10,636	-48.9		257	78.7
31	12,072	-57.5		261	86.2
31	12,911	-61.0		262	86.4
30	13,862	-63.5		261	82.0
28	14,974	-66.8		262	73.4
28	16,309	-70.3		263	66.0
27	17,632	-70.5		267	48.0
27	18,434	-68.8		266	39.2
26	19,355	-66.1		263	32.2
25	20,470	-62.2		264	26.6
23	21,861	-58.2		265	27.0
23	23,695	-52.7		262	29.1
23	24,882	-48.7		260	33.6
22	26,376	-43.5		263	33.2
20	28,320	-41.2		264	31.7
16	31,087	-40.1		214	26.8
16	33,547	-35.4		204	31.3
10	35,893	-30.1			

*CANTON IS., PACIFIC AREA 1009 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
30	4	27.3	77	50	3.5
30	81	26.9	74	51	3.9
29	533	23.4	78	63	6.2
29	1,005	20.6	69	66	5.4
29	1,499	18.4	58	67	4.9
29	2,016	15.9	50	63	2.9
29	2,562	13.2	46	72	2.9
29	3,141	9.9	50	80	3.9
29	3,752	6.6	45	82	4.9
28	4,407	2.9	46	85	6.0
29	5,105	- .8	39	87	6.8
29	5,863	- 4.8	38	89	7.0
29	6,683	- 9.3	34	89	6.4
29	7,588	-15.0	34	105	6.8
29	8,585	-21.7	29	146	5.4
29	9,702	-30.0	28	159	6.4
29	10,974	-40.1	24	157	9.1
29	12,455	-52.8		167	8.5
28	13,303	-59.8		164	9.3
28	14,248	-67.6		155	8.5
25	15,324	-76.1		117	8.0
25	16,582	-83.7		98	7.8
19	17,833	-76.5		70	1.4
17	18,612	-70.9		260	14.0
16	19,535	-65.2		274	16.7
16	20,656	-61.6		266	20.8
16	22,052	-57.6		269	16.1
16	23,882	-54.6		266	15.0
16	25,054	-52.6		249	13.2
16	26,501	-50.5		249	7.6
15	28,390	-47.1		162	7.0
15	31,188	-45.2		107	4.7
12	33,498	-43.1		232	7.5
9	35,774	-38.1			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind: Direction	Wind: Speed
CAPE HATTERAS, N. C. 1018 MB						
SURFACE	31	4	3.6	76	349	6.2
1000	31	152	4.6	68	347	9.3
950	31	565	2.9	62	324	8.7
900	31	1,005	1.5	52	281	11.3
850	31	1,465	.8	41	263	18.5
800	31	1,951	- .7	38	264	25.6
750	31	2,465	- 2.9	42	267	31.3
700	31	3,012	- 4.3	41	268	37.1
650	31	3,589	- 7.1	40	266	41.6
600	31	4,214	-10.3	40	266	47.2
550	31	4,874	-14.1	39	263	53.8
500	31	5,597	-18.5	42	263	61.6
450	31	6,369	-23.5	38	262	68.6
400	31	7,228	-29.2	39	264	76.0
350	31	8,168	-36.0		262	84.1
300	31	9,222	-43.1		263	90.5
250	31	10,430	-50.9		261	91.7
200	31	11,859	-56.6		263	86.6
175	31	12,703	-58.0		263	85.5
150	31	13,671	-59.4		267	79.4
125	31	14,805	-61.8		265	65.9
100	31	16,178	-64.1		262	56.3
80	31	17,542	-64.4		265	46.8
70	31	18,367	-63.4		267	35.9
60	31	19,310	-61.7		260	34.2
50	31	20,442	-60.8		262	27.2
40	31	21,840	-57.0		266	32.1
30	31	23,682	-52.0		264	30.7
25	29	24,876	-47.7		261	33.4
20	27	26,360	-44.5		261	39.4
15	26	28,295	-41.3		255	45.1
10	25	31,063	-36.3		254	47.6
7	19	33,553	-34.0		256	84.9
5	8	35,958	-31.4			
CARIBOU, ME. 988 MB						
	30	191	-14.4	76	278	5.4
	30	100				
	30	488	-13.7	68	289	10.3
	30	901	-14.4	65	297	15.3
	30	1,334	-14.7	61	302	17.1
	30	1,792	-15.8	58	296	18.5
	30	2,278	-17.4	55	289	18.8
	30	2,793	-19.0	51	282	22.3
	30	3,342	-21.6	50	278	25.8
	30	3,928	-24.5	46	272	28.9
	30	4,554	-28.1	44	268	32.8
	30	5,236	-32.3	40	265	35.7
	30	5,969	-36.8		264	36.9
	30	6,780	-41.7		260	42.0
	30	7,676	-46.4		257	42.9
	30	8,680	-50.8		255	48.6
	30	9,871	-52.3		257	47.8
	30	11,312	-53.1		258	51.3
	30	12,172	-53.4		256	46.0
	30	13,163	-53.6		255	45.6
	30	14,333	-54.5		255	45.8
	30	15,755	-56.4		256	46.4
	30	17,168	-57.8		256	47.8
	30	18,001	-58.4		257	47.0
	29	18,974	-58.1		258	48.2
	29	20,120	-58.7		258	47.8
	29	21,521	-58.7		257	51.5
	28	23,336	-56.8		256	59.8
	28	24,495	-55.3		257	62.5
	28	25,927	-52.8		255	68.2
	27	27,796	-48.5		256	86.8
	22	30,481	-41.1		258	113.1
	19	32,998	-33.2		259	124.9
	7	35,323	-34.3			
CHARLESTON, S. C. 1019 MB						
	31	13	2.4	77	329	2.5
	31	166	4.6	64	335	4.9
	31	584	5.3	53	307	6.4
	31	1,026	4.7	46	274	9.5
	31	1,492	3.9	40	262	15.0
	31	1,984	2.5	40	262	19.8
	31	2,502	.4	41	266	25.6
	31	3,055	- 2.2	39	265	30.9
	31	3,638	- 4.5	37	266	36.3
	31	4,270	- 7.4	34	265	43.9
	31	4,939	-11.4	34	265	52.1
	31	5,668	-16.2	33	264	53.4
	31	6,448	-21.4		263	62.2
	31	7,314	-27.5		259	65.7
	31	8,261	-34.6		264	73.0
	31	9,320	-42.6		259	83.9
	31	10,528	-51.1		260	82.8
	31	11,955	-57.9		261	87.2
	31	12,794	-60.0		267	73.8
	31	13,753	-61.7		267	69.5
	30	14,875	-64.2		266	60.4
	30	16,232	-66.7		265	51.3
	31	17,576	-67.4		266	44.7
	30	18,390	-65.8		267	34.0
	30	19,324	-63.5		267	31.1
	30	20,449	-61.4		267	27.4
	30	21,843	-58.1		273	23.7
	29	23,677	-51.9		265	32.1
	24	24,876	-47.3		262	31.7
	23	26,368	-44.5		263	39.2
	18	28,320	-41.0		248	31.5
*** COLD BAY, ALASKA 989 MB**						
	31	30	- .1	84	99	2.9
	31	- 62			135	5.1
	31	352	- 1.5	75	98	5.1
	31	776	- 4.5	84	115	6.8
	31	1,224	- 7.3	82	114	8.4
	31	1,695	- 9.3	69	122	9.3
	31	2,190	-11.7	63	136	10.9
	31	2,717	-14.5	59	144	12.4
	31	3,273	-17.7	50	152	11.1
	31	3,870	-21.3	47	158	13.6
	31	4,501	-25.8	46	158	12.6
	31	5,190	-30.6	46	159	14.0
	31	5,925	-35.9	45	155	17.7
	31	6,738	-41.8		163	19.4
	31	7,631	-47.7		162	21.4
	31	8,635	-53.1		165	20.8
	31	9,807	-53.1		179	21.8
	31	11,253	-50.5		197	18.6
	31	12,124	-50.5		197	20.0
	31	13,129	-50.6		204	20.4
	30	14,314	-50.6		208	19.8
	31	15,757	-51.1		223	18.8
	28	17,204	-51.2		232	19.2
	28	18,073	-51.8		240	18.3
	28	19,070	-52.1		247	18.6
	28	20,248	-52.7		258	21.4
	28	21,687	-53.1		270	22.3
	28	23,538	-53.7		285	29.1
	28	24,725	-53.9		293	33.0
	27	26,157	-54.1		299	39.0
	27	27,997	-55.3		309	47.8
	23	30,570	-57.2		312	59.8
	18	32,891	-57.5		313	72.3
	7	35,515	-50.6			
COLUMBIA, MO. 994 MB						
	31	238	- 8.5	75	288	2.5
	31	184			350	2.9
	31	580	- 6.6	60	300	9.3
	31	1,010	- 5.2	51	301	15.5
	31	1,459	- 5.6	49	302	18.5
	31	1,934	- 6.3	51	303	22.3
	31	2,435	- 7.2	49	302	27.0
	31	2,974	- 9.3	44	299	31.5
	31	3,538	-12.4	42	296	35.0
	31	4,152	-15.7	39	295	39.4
	31	4,799	-19.4	37	296	41.4
	31	5,507	-23.3		291	46.4
	31	6,264	-28.4		290	52.4
	31	6,738	-41.8		292	52.8
	31	7,105	-34.4		293	55.0
	31	8,026	-41.1		290	60.8
	31	9,057	-48.3		294	58.7
	31	10,240	-54.4		293	56.7
	31	11,660	-56.7		288	56.7
	31	12,507	-57.3		292	50.1
	31	13,479	-58.2		286	51.5
	31	14,624	-59.4		288	47.4
	31	16,015	-61.1		287	44.3
	30	17,395	-62.2		283	39.4
	30	18,218	-62.5		283	36.5
	30	19,172	-61.8		284	35.4
	30	20,301	-61.5		285	31.9
	30	21,685	-60.8		282	31.5
	30	23,485	-58.0		276	41.2
	30	24,639	-56.0		273	44.5
	27	26,080	-52.1		266	63.3
	20	27,989	-47.7		261	66.4
DAYTON, OHIO 984 MB						
SURFACE	31	297	- 8.1	73	245	6.2
1000	31	167				
950	31	565	- 7.3	75	257	11.1
900	31	988	- 7.9	72	277	15.5
850	31	1,431	- 8.8	62	280	18.5
800	31	1,900	- 9.7	52	279	21.4
750	31	2,395	-10.7	46	280	25.8
700	31	2,927	-12.6	44	280	30.1
650	31	3,487	-15.2	41	279	34.8
600	31	4,091	-17.9		277	40.8
550	31	4,737	-21.1	36	275	48.8
500	31	5,436	-25.2		274	54.4
450	31	6,188	-30.1		276	59.1
400	31	7,023	-35.6		278	65.5
350	31	7,930	-42.2		276	69.2
300	31	8,967	-48.6		273	71.3
250	31	10,151	-53.7		274	73.4
200	31	11,579	-55.4		273	69.2
175	31	12,428	-56.1		272	66.8
150	31	13,404	-56.8		272	64.7
125	30	14,555	-58.2		270	55.2
100	30	15,963	-60.3		271	47.4
80	29	17,343	-61.0		274	41.6
70	29	18,177	-61.3		274	36.9
60	28	19,125	-61.6		275	35.0
50	28	20,257	-60.5		276	35.9
40	27	21,647	-59.9		274	35.5
30	23	23,468	-55.9		271	40.8
25	22	24,641	-52.9		269	45.3
20	20	26,094	-49.5		266	55.0
15	15	28,004	-46.4		262	65.7
10						
7						
DEL RIO, TEXAS 986 MB						
	31	314	4.2	78	13	1.9
	31	195				
	31	616	6.1	64	146	2.3
	31	1,058	6.2	55	198	3.1
	31	1,526	5.7	54	234	6.0
	31	2,022	5.3	46	253	8.9
	31	2,548	3.2	40	272	12.6
	31	3,104	.5	36	274	17.3
	31	3,690	- 2.5	32	273	19.0
	31	4,327	- 6.0		272	20.8
	31	4,994	-10.2		269	24.9
	31	5,731	-15.3		270	29.1
	31	6,512	-21.0		267	31.9
	31	7,379	-27.4		267	36.5
	31	8,328	-33.8		262	45.5
	31	9,392	-41.4		260	52.8
	31	10,607	-49.8		261	62.9
	31	12,039	-57.8		271	69.3
	30	12,872	-60.8		273	64.9
	30	13,825	-63.1		271	59.6
	30	14,940	-66.0		276	52.1
	30	16,284	-69.5		278	44.1
	30	17,417	-70.1		275	34.2
	30	18,415	-68.5		276	28.4
	30	19,336	-66.3		278	23.7
	29	20,449	-63.7		277	19.2
	29	21,829	-60.0		274	20.6
	29	23,546	-54.6		267	23.1
	28	24,827	-51.2		267	28.2
	26	26,708	-48.0		261	36.5
	23	28,227	-45.3		252	46.0
	10	30,939	-42.8			
	6	33,232	-42.5			
DENVER, COLO. 940 MB						
	31	1,611	- 5.9	66	231	2.7
	31	222				
	31	631				
	31	1,064				
	31	1,513				
	31	1,996	- .4	41	300	8.5
	31	2,508	- 2.3	37	307	15.5
	31	3,055	- 5.8	38	314	17.3
	31	3,631	- 9.4	41	319	20.4
	31	4,246	-13.4	45	317	23.5
	31	4,901	-17.4	45	314	28.2
	31	5,612	-21.7	38	310	32.8
	31	6,374	-27.2		307	36.5
	31	7,218	-33.5		306	40.0
	31	8,142	-40.6		306	42.2
	31	9,175	-47.9		301	42.7
	31	10,357	-55.0		299	47.6
	31	11,764	-59.6		297	48.0
	31	12,599	-59.8		294	45.8
	30	13,564	-60.3		294	46.6
	30	14,699	-60.9		297	44.1
	30	16,083	-62.4		295	35.0
	30	17,459	-62.8		292	30.7
	30	18,289	-62.9		297	28.2
	29	19,229	-62.2		301	25.8
	28	20,354	-61.9		300	25.4
	28	21,736	-61.4		297	27.8
	25	23,537	-59.7		288	31.1
	23	24,692	-58.3		283	36.1
	20	26,101	-55.4		275	43.5
	18	27,940	-52.4		267	58.5
	8	30,657	-47.1			
DODGE CITY, KANS. 929 MB						
	31	792	- 6.3	70	289	4.3
	31	215				
	31	618				
	31	1,046	- 1.7	53	306	7.2
	31	1,501	- 1.3	49	310	10.1
	31	1,985	- 1.4	44	292	15.9
	31	2,498	- 3.3	41	312	16.7
	31	3,041	- 6.2	41	308	18.6
	31	3,614	- 9.5	41	303	21.4
	31	4,232	-12.8	41	301	25.1
	31	4,885	-17.0	39	295	28.6
	31	5,601	-21.7	39	293	32.4
	31	6,363	-27.2		292	37.5
	31	7,209	-33.1	36	295	40.2
	31	8,134	-40.1		295	38.5
	31	9,168	-47.9		286	45.3
	31	10,350	-55.2		282	49.7
	31	11,760	-58.7		281	53.4
	31	12,597	-59.8		284	52.3
	31	13,560	-59.8		283	47.8
	31	14,694	-61.5		282	48.0
	31	16,072	-62.8		284	36.5
	31	17,444	-63.7		287	33.4
	31	18,270	-63.4		286	29.3
	31	19,211	-62.9		289	28.0
	31	20,336	-62.3		291	26.4
	29	21,713	-61.2		284	28.4
	28	23,506	-59.3		280	30.7
	25	24,653	-56.9		274	34.8
	22	26,076	-54.3		274	38.1
	14	27,983	-48.6		255	49.9
EL PASO, TEXAS 886 MB						
	31	1,193	.6	53	345	1.4
	31	208				
	31	626				
	31	1,071				
	31	1,533	5.7	41	329	3.7
	31	2,027	4.2	40	299	8.0
	31	2,553	2.1	37	286	11.8
	31	3,105	- .7	35	280	13.0
	31	3,693	- 4.0	32	284	16.1
	31	4,322	- 7.5		280	18.3
	31	4,988	-11.7		285	20.2
	31	5,718	-16.9		286	24.1
	31	6,496	-22.5		285	25.6
	31	7,357	-28.9		281	32.1
	31	8,299	-35.8		277	37.1
	31	9,353	-43.6		281	39.0
	31	10,556	-51.7		275	52.4
	31	11,980	-59.0		272	62.2
	31	12,814	-60.7		273	60.0
	31	13,760	-62.0		276	58.1
	31	14,890	-64.7		281	49.1
	31	16,242	-67.4		286	37.1
	30	17,581	-68.5		286	30.9
	30	18,394	-67.1		289	23.9
	30	19,320	-64.7		289	20.8
	30	20,436	-63.4		288	18.8
	29	21,817	-60.8		289	16.7
	28	23,623	-57.0		283	18.1
	27	24,784	-54.0		276	26.4
	21	26,240	-50.8		267	31.5
	13	28,091	-50.2		263	41.0
ELY, NEV. 813 MB						
SURFACE	31	1,908	- 8.6	79	189	5.1
1000	31	269				
950	31	680				
900	31	1,112				
850	31	1,556				
800	31	2,035	- 2.5	54	182	2.9
750	31	2,554	- 1.3	39	338	4.3
700	31	3,097	- 3.7	36	328	9.5
650	31	3,682	- 6.3	35	322	15.5
600	31	4,302	- 9.6	38	317	19.2
550	31	4,967	-13.6	37	314	20.2
500	31	5,688	-18.4	36	313	22.9
450	31	6,462	-24.2	36	313	25.4
400	31	7,316	-30.4		310	29.5
350	31	8,250	-37.8		314	31.3
300	31	9,296	-45.9		308	34.4
250	31	10,486	-54.3		320	35.0
200	31	11,892	-60.6		316	30.9
175	31	12,723	-61.0		312	31.9
150	31	13,680	-61.3		309	36.1
125	31	14,809	-62.4		306	30.1
100	30	16,179	-64.7		304	25.6
80	30	17,543	-64.6		311	24.1
70	30	18,370	-64.5		318	23.5
60	30	19,304	-63.4		317	19.4
50	30	20,430	-62.0		326	20.0
40	29	21,813	-61.0		328	18.5
30	28	23,600	-60.1		325	19.2
25	27	24,740	-58.8		310	23.1
20	26	26,148	-57.6		290	30.7
15	13	27,979	-54.0			
10	6	30,560	-48.5			
*** FAIRBANKS, ALASKA 991 MB**						
	31	135	-16.0	75	33	1.9
	31	68				
	31	464	- 7.3	63	104	9.1
	31	885	- 6.5	62	126	11.7
	31	1,333	- 5.5	59	156	9.5
	31	1,808	- 6.4	55	187	11.1
	31	2,303	- 9.2	55	193	11.1
	31	2,841	-12.7	55	198	11.3
	31	3,395	-16.5	55	202	12.2
	31	3,999	-20.5	54	210	13.2
	31	4,633	-25.1	55	215	14.8
	31	5,323	-29.8	52	218	17.3
	31	6,059	-35.0	49	225	20.8
	31	6,879	-40.8		231	21.8
	31	7,775	-47.2		225	22.5
	31	8,779	-53.9		227	24.9
	31	9,936	-58.6		230	25.3
	30	11,341	-57.5		239	19.4
	30	12,186	-56.3		239	21.2
	30	13,165	-56.4		237	23.5
	30	14,321	-56.6		251	23.3
	29	15,729	-57.3		258	25.8
	28	17,135	-58.0		263	32.2
	27	17,968	-58.6		269	35.9
	26	18,928	-59.8		274	37.9
	26	20,064	-60.9		277	44.5
	26	21,460	-61.6		280	52.6
	20	23,225	-63.5		287	54.2
	18	24,330	-64.7		290	59.4
	18	25,585	-66.6		294	69.3
	12	27,579	-65.2			
	6	30,214	-66.7			
FLINT, MICH. 990 MB						
	30	234	- 7.3	77	240	3.7
	30	152				
	30	551	- 7.8	75	273	7.4
	30	973	- 9.8	74	279	11.7
	30	1,413	-11.6	71	282	14.0
	30	1,876	-12.6	61	283	17.5
	30	2,365	-14.1	54	282	20.6
	30	2,889	-15.8	48	284	23.3
	30	3,439	-18.2	46	283	25.4
	30	4,039	-21.4	42	283	27.4
	30	4,670	-25.1	42	284	33.8
	30	5,362	-29.5	42	277	39.6
	30	6,095	-34.4		278	42.7
	30	6,921	-39.4		281	48.2
	30	7,825	-44.8		280	55.8
	29	8,843	-50.2		279	60.0
	29	10,022	-53.7		276	59.1
	29	11,452	-54.1		275	51.5
	28	12,308	-54.3		274	52.8
	28	13,294	-55.2		272	46.8
	28	14,453	-56.6		274	45.3
	28	15,863	-57.8		270	41.0
	28	17,267	-60.0		271	37.9
	28	18,105	-60.5		275	36.1
	28	19,067	-59.6		276	32.4
	28	20,207	-59.8		274	33.8
	28	21,604	-58.7		271	33.4
	27	23,421	-56.7		270	37.9
	25	24,581	-54.9		268	40.6
	24	26,022	-51.7		264	49.3
	23	27,914	-47.7		258	62.5
	10	30,604	-45.6			
FORT WORTH, TEXAS 1003 MB						
	31	180	1.2	73	322	2.5
	31	203			341	3.9
	31	621	3.5	51	324	3.5
	31	1,058	3.6	44	295	5.4
	31	1,522	2.9	45	284	9.5
	31	2,012	1.5	48	277	12.4
	31	2,532	- .5	42	284	15.2
	31	3,080	- 2.7	36	281	18.6
	31	3,661	- 5.3		283	22.7
	31	4,290	- 8.5		279	25.8
	31	4,953	-12.6		282	28.0
	31	5,681	-17.7		276	33.4
	31	6,456	-23.4		271	35.5
	31	7,314	-29.5		271	40.6
	31	8,253	-36.3		270	47.4
	31	9,305	-44.2		270	53.4
	31	10,505	-52.4		269	64.9
	31	11,923	-59.0		270	71.7
	31	12,759	-60.4		272	64.3
	31	13,716	-61.5		274	59.2
	31	14,840	-63.8		275	53.2
	31	16,199	-66.7		276	47.0
	31	17,547	-66.8		278	37.1
	31	18,366	-65.9		278	31.5
	30	19,294	-64.6		280	27.0
	29	20,415	-62.4		278	23.1
	27	21,801	-59.8		280	25.4
	27	23,524	-55.3		270	27.6
	27	24,792	-52.0		266	35.2
	24	26,265	-48.3		262	41.4
	20	28,206	-44.9		252	39.6
GLASGOW, MONT. 939 MB						
	31	696	-10.7	77	6	1.9
	31	210				
	31	605				
	31	1,025	- 7.6	60	297	10.3
	31	1,470	- 6.6	58	307	18.5
	31	1,943	- 7.6	59	311	21.8
	31	2,440	- 9.7	58	312	24.5
	31	2,975	-11.6	56	314	27.2
	31	3,539	-14.3	53	314	29.9
	31	4,149	-17.6	49	319	34.2
	31	4,786	-21.3	44	319	38.9
	31	5,486	-25.7	43	317	42.2
	31	6,233	-31.0	43	316	46.2
	31	7,067	-36.9		317	49.1
	31	7,978	-43.5		319	53.6
	31	8,999	-50.8		319	54.4
	31	10,167	-57.5		321	56.3
	31	11,567	-59.4		317	55.0
	31	12,403	-58.9		317	51.7
	31	13,369	-59.0		318	48.0
	31	14,512	-59.0		315	45.5
	29	15,899	-60.4		317	41.2
	29	17,285	-61.4		315	40.4
	29	18,109	-62.1		314	37.7
	29	19,063	-62.4		313	38.3
	29	20,184	-63.2		317	41.2
	28	21,659	-63.7		308	41.2
	27	23,334	-63.5		305	44.9
	26	24,450	-63.4		302	50.3
	23	25,809	-62.4		290	60.4
	15	27,646	-60.4		283	82.6
	10	30,152	-54.8			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

GRAND JUNCTION, COLO. 858 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,474	- 6.5	66	120	3.3
1000	31	261				
950	31	668				
900	31	1,100				
850	31	1,548	- 3.8	57	119	3.5
800	31	2,030	- 3.0	51	133	4.3
750	31	2,541	- 4.0	47	227	2.5
700	31	3,083	- 6.0	44	294	9.5
650	31	3,661	- 8.6	38	307	16.7
600	31	4,277	-11.9	37	313	22.0
550	31	4,936	-16.0	40	312	26.8
500	31	5,650	-20.7	40	310	32.4
450	31	6,415	-26.2		304	41.0
400	31	7,263	-32.5		307	45.3
350	31	8,190	-39.6		310	43.1
300	31	9,226	-47.4		316	45.6
250	31	10,411	-54.7		320	42.7
200	31	11,818	-59.4		320	48.2
175	31	12,652	-60.0		313	42.9
150	31	13,613	-60.5		312	43.7
125	31	14,745	-61.8		307	43.3
100	31	16,120	-64.0		308	36.7
80	31	17,485	-64.1		308	32.8
70	31	18,309	-63.9		308	27.0
60	30	19,243	-63.0		308	25.4
50	28	20,374	-62.0		313	22.9
40	26	21,754	-62.0		314	19.6
30	26	23,540	-60.1		302	28.0
25	23	24,682	-58.8		299	30.9
20	22	26,088	-56.7		285	41.4
15	21	27,928	-53.5		273	53.0
10	15	30,646	-46.6		266	73.8
7	12	33,062	-40.5			
5	6	35,250	-42.8			

GREAT FALLS, MONT. 891 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	1,123	- 5.7	63	234	9.7
1000	31	209				
950	31	617				
900	31	1,044				
850	31	1,497	- 1.8	50	248	16.7
800	31	1,978	- 4.0	53	273	16.9
750	31	2,484	- 6.1	54	289	18.3
700	31	3,023	- 8.6	55	299	22.5
650	31	3,594	-11.1	48	302	26.8
600	31	4,207	-14.7	48	303	28.0
550	31	4,855	-19.6	51	308	32.2
500	31	5,565	-23.6	53	309	36.7
450	31	6,321	-28.8	52	311	39.0
400	31	7,162	-34.8	44	309	42.5
350	31	8,081	-41.5		310	50.5
300	31	9,110	-49.3		312	51.9
250	31	10,284	-56.4		305	52.1
200	30	11,677	-60.0		305	52.3
175	30	12,511	-59.7		306	49.3
150	30	13,473	-59.8		308	44.1
125	28	14,608	-59.4		307	42.2
100	25	15,996	-59.3		303	36.7
80	23	17,381	-60.3		306	35.9
70	23	18,213	-60.4		309	33.8
60	23	19,177	-61.4		310	33.0
50	23	20,301	-61.9		307	35.7
40	21	21,599	-61.7		308	35.0
30	18	23,511	-62.4		307	34.4
25	16	24,641	-62.9		314	36.5
20	13	26,053	-62.4		307	38.9
15	11	27,816	-62.1		305	37.5
10	10	30,331	-60.8			
7	7	32,606	-59.2			
5	5	34,729	-56.8			

GREEN BAY, WIS. 992 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	210	-13.5	75	278	5.1
1000	31	147				
950	31	[illegible]	-12.3	70	300	10.1
900	31	956	-11.1	68	301	10.3
850	31	1,394	-11.6	59	300	10.5
800	31	1,858	-12.8	54	298	15.0
750	31	2,346	-14.6	52	299	18.6
700	31	2,870	-16.7	46	298	22.1
650	31	3,420	-19.1	42	300	25.1
600	31	4,017	-21.8	39	301	29.9
550	31	4,647	-25.4	40	298	34.4
500	31	5,330	-29.2	47	301	39.0
450	31	6,078	-34.4		298	38.7
400	31	6,898	-39.5		296	42.2
350	31	7,790	-45.7		294	46.8
300	31	8,814	-50.7		291	52.6
250	31	9,991	-54.2		289	55.6
200	31	11,420	-54.2		285	57.6
175	31	12,275	-54.1		282	49.5
150	31	13,263	-54.8		284	50.9
125	31	14,425	-56.3		284	44.9
100	31	15,838	-57.8		284	44.7
80	30	17,239	-58.7		283	42.5
70	30	18,068	-59.4		281	41.2
60	29	19,036	-6[illegible]		282	[illegible]
50	29	20,173	-60.4		278	37.7
40	28	21,566	-60.1		280	[illegible]
30	26	23,363	-58.7		272	44.1
25	22	24,516	-57.4		270	52.3
20	18	25,931	-54.4		269	58.1
15	13	27,781	-50.[illegible]			
10						
7						
5						

GREENSBORO, N. C. 987 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	273	- 3.2	76	348	1.9
1000	31	171				
950	31	580	- 1.1	55	310	6.6
900	31	1,011	- 1.8	50	291	10.7
850	31	1,466	- 1.8	46	276	16.1
800	31	1,947	- 3.0	43	270	21.6
750	31	2,457	- 4.7	45	266	27.2
700	31	2,999	- 6.3	44	263	33.6
650	31	3,572	- 9.1	43	265	39.0
600	31	4,192	-12.2	41	267	46.6
550	31	4,848	-16.2	42	266	53.8
500	31	5,564	-20.6	46	266	60.6
450	31	6,328	-25.7	45	264	67.0
400	31	7,180	-31.4	41	261	77.1
350	31	8,112	-37.9		258	84.6
300	31	9,158	-45.2		259	91.5
250	31	10,355	-52.5		259	97.1
200	31	11,778	-57.6		261	95.6
175	31	12,619	-58.6		269	81.8
150	31	13,584	-60.0		268	71.5
125	30	14,715	-61.9		269	66.6
100	30	16,090	-63.5		264	52.6
80	30	17,457	-64.3		266	45.8
70	29	18,279	-64.1		266	39.8
60	28	19,219	-62.6		270	36.5
50	28	20,348	-61.0		268	30.7
40	26	21,744	-58.1		263	29.7
30	25	23,580	-53.0		265	37.9
25	25	24,766	-49.2		263	38.5
20	25	26,245	-44.9		259	49.3
15	21	28,201	-40.7		258	65.1
10	15	30,943	-40.4			
7						
5						

GUAM, MARIANA IS. 999 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	111	24.6	91	89	6.0
1000	31	102			86	6.4
950	31	555	23.1	84	88	15.3
900	31	1,025	[illegible]	83	96	15.2
850	31	1,518	18.[illegible]	73	96	13.4
800	31	2,036	15.[illegible]	62	95	13.8
750	31	2,584	13.5	49	96	13.8
700	31	3,161	11.0	37	92	13.6
650	31	3,775	7.6	35	86	14.8
600	31	4,432	3.6	36	96	14.4
550	31	5,131	- .9		98	12.6
500	31	5,887	- 5.5		98	13.8
450	31	6,702	-10.4		100	13.6
400	31	7,605	-16.1		96	13.2
350	31	8,598	-22.7		97	11.7
300	31	9,710	-31.1		106	11.5
250	31	10,976	-40.9		110	11.1
200	31	12,453	-53.2		121	13.6
175	31	13,299	-60.3		125	15.0
150	31	14,242	-68.1		130	15.9
125	31	15,313	-76.5		115	19.4
100	30	16,576	-82.6		113	21.2
80	29	17,835	-77.1		113	9.9
70	29	18,608	-73.5		117	4.9
60	27	19,522	-68.7		196	2.9
50	27	20,630	-62.7		272	9.3
40	26	22,017	-59.3		278	18.5
30	24	23,842	-54.5		277	25.1
25	24	25,018	-51.4		281	[illegible]
20	22	26,478	-48.7		280	31.2
15	15	28,395	-45.6		298	16.3
10	8	31,096	-42.0			
7						
5						

HILO, HAWAII 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	11	19.7	85	229	5.6
1000	31	133	22.3	79	220	4.9
950	31	576	19.6	79	151	4.7
900	31	1,043	16.6	80	137	3.5
850	31	1,528	13.7	79	106	2.3
800	31	2,037	11.0	65	115	3.5
750	31	2,580	10.5	36	98	2.3
700	31	3,149	8.9	24	40	1.4
650	31	3,758	5.6		315	2.7
600	31	4,410	1.9		298	5.2
550	31	5,100	- 2.4		283	9.3
500	31	5,857	- 7.2		283	12.2
450	31	6,666	-12.6		283	14.6
400	31	7,559	-19.2		278	16.7
350	31	8,539	-26.1		279	23.3
300	31	9,637	-33.9		280	26.6
250	31	10,891	-42.9		272	34.8
200	31	12,360	-54.0		270	40.8
175	31	13,205	-60.1		273	41.8
150	31	14,153	-66.3		276	38.9
125	31	15,240	-72.3		280	33.2
100	31	16,534	-77.4		282	24.1
80	29	17,813	-76.8		275	16.5
70	29	18,587	-72.7		278	11.7
60	29	19,501	-67.8		269	6.6
50	29	20,612	-62.8		267	5.6
40	28	21,997	-59.2		274	10.5
30	27	23,818	-53.8		277	14.4
25	27	24,996	-52.3		288	14.0
20	25	26,448	-50.4		288	12.0
15	15	28,308	-50.1		278	14.2
10						
7						
5						

HUNTINGTON, W. VA. 992 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	246	- 5.4	79	242	3.5
1000	31	178				
950	31	580	- 5.5	69	251	9.1
900	31	1,004	- 6.7	70	261	13.8
850	31	1,450	- 6.7	63	268	17.5
800	31	1,921	- 7.7	51	271	22.7
750	31	2,422	- 9.3	46	274	27.8
700	31	2,955	-11.2	48	275	32.2
650	31	3,520	-13.1	44	273	37.9
600	31	4,130	-15.9	43	273	44.1
550	31	4,775	-19.5	45	275	48.6
500	31	5,484	-23.9	45	274	55.0
450	31	6,241	-28.7	42	272	58.9
400	31	7,081	-34.2		272	62.9
350	31	8,002	-40.9		270	68.2
300	31	9,036	-47.7		267	73.0
250	30	10,225	-52.8		270	72.5
200	30	11,654	-55.9		269	71.3
175	30	12,500	-57.2		269	70.5
150	30	13,474	-57.9		269	64.9
125	29	14,609	-59.7		268	55.6
100	29	15,998	-61.5		271	49.7
80	29	17,379	-61.9		269	43.3
70	28	18,209	-61.9		269	40.0
60	28	19,160	-62.1		272	35.5
50	28	20,290	-61.1		272	34.8
40	28	21,682	-59.2		267	33.8
30	28	23,498	-55.5		268	37.5
25	24	24,682	-51.8		263	40.0
20	23	26,151	-47.7		259	48.8
15	17	28,032	-45.2		262	62.9
10	8	30,746	-41.3			
7						
5						

* INTERNAT. FALLS, MINN. 975 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	360	-17.4	75	288	2.3
1000	31	163				
950	31	553	-15.6	78	309	6.0
900	31	958	-14.2	76	328	9.5
850	31	1,392	-13.4	68	322	10.7
800	31	1,853	-13.8	68	319	12.6
750	31	2,341	-15.2	63	319	15.0
700	31	2,862	-18.2	60	320	17.7
650	31	3,417	-19.8	59	320	20.0
600	31	4,005	-22.8	57	315	23.3
550	31	4,633	-26.5	54	315	28.9
500	31	5,322	-30.4	51	314	32.1
450	31	6,054	-35.2	49	312	35.7
400	31	6,875	-41.0	46	312	39.0
350	31	7,771	-46.9		317	34.2
300	31	8,779	-52.6		316	41.6
250	31	9,946	-55.9		316	42.5
200	31	11,364	-55.9		309	42.3
175	31	12,214	-55.7		307	39.6
150	31	13,195	-56.2		308	41.0
125	31	14,351	-57.1		306	41.0
100	31	15,758	-58.6		302	40.4
80	30	17,149	-59.9		301	41.8
70	29	17,974	-60.4		300	42.0
60	29	18,939	-61.0		302	40.6
50	28	20,061	-62.2		298	42.7
40	28	21,438	-62.5		294	44.5
30	28	23,210	-63.1		291	47.6
25	28	24,332	-62.6		288	51.7
20	26	25,712	-62.5		284	56.3
15	23	27,545	-59.9		281	63.3
10	16	30,071	-54.1		273	81.4
7	5	32,666	-38.5			
5						

JACKSON, MISS. 1012 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	94	.3	76	342	2.9
1000	31	187	1.6	64	17	3.5
950	31	603	2.9	51	339	7.0
900	31	1,041	3.7	45	310	10.9
850	31	1,505	2.7	47	298	14.6
800	31	1,995	1.5	47	289	19.6
750	31	2,508	- .2	41	288	23.5
700	31	3,064	- 2.5	38	285	26.0
650	31	3,646	- 4.9	36	282	28.6
600	31	4,277	- 8.2		279	35.2
550	31	4,940	-12.0	36	275	35.4
500	31	5,672	-16.6		270	38.3
450	31	6,447	-22.4		268	43.3
400	31	7,312	-28.3		268	49.1
350	31	8,256	-35.2		268	55.2
300	31	9,313	-42.9		267	58.7
250	31	10,519	-51.1		266	72.5
200	31	11,945	-58.1		272	69.0
175	31	12,781	-60.0		277	61.6
150	31	13,739	-61.4		271	53.0
125	31	14,862	-64.0		268	51.1
100	31	16,220	-66.5		270	40.6
80	29	17,563	-66.9		269	30.9
70	29	18,376	-65.7			
60	28	19,311	-64.1			
50	27	20,432	-62.4			
40	27	21,822	-58.8		274	28.9
30	26	23,653	-53.6		267	25.5
25	25	24,835	-50.1		265	34.4
20	24	26,301	-47.2		258	41.4
15	21	28,215	-43.8			
10	14	30,891	-43.1			
7						
5						

JACKSONVILLE, FLA. 1021 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	5.1	85	323	3.7
1000	31	171	7.4	69	337	6.8
950	31	597	7.7	60	313	5.1
900	31	1,041	7.6	44	269	9.3
850	31	1,512	6.7	43	266	12.4
800	31	2,009	5.1	40	268	17.3
750	31	2,531	3.3	38	268	24.1
700	31	3,092	1.0	37	266	30.5
650	31	3,677	- 1.7		266	32.8
600	31	4,319	- 5.3		263	40.0
550	31	4,987	- 9.4		262	44.7
500	31	5,728	-14.3		261	49.7
450	31	6,513	-19.5		260	57.3
400	31	7,386	-25.7		262	60.8
350	31	8,339	-32.7	41	260	70.5
300	31	9,407	-40.6		265	81.0
250	31	10,625	-49.3		267	89.9
200	30	12,054	-58.[illegible]		267	98.7
175	30	12,889	-60.9		267	93.8
150	30	13,844	-62.6		268	81.6
125	30	14,961	-65.5		272	67.0
100	30	16,306	-68.5		269	57.7
80	30	17,637	-69.5		268	44.9
70	29	18,447	-67.3		270	43.5
60	29	19,372	-64.5		267	35.4
50	28	20,493	-61.3		262	22.9
40	27	21,888	-57.1		266	27.2
30	25	23,733	-50.3		264	24.5
25	22	24,929	-46.1		265	28.2
20	20	26,423	-43.9		266	35.4
15	18	28,366	-40.7		260	42.5
10	18	31,156	-34.8		259	50.3
7	16	33,676	-30.6			
5	5	35,987	-31.5			

JOHNSTON IS., PACIFIC AREA 1014 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	25.1	77	68	13.2
1000	31	127	23.9	77	62	14.4
950	31	574	20.1	79	61	14.8
900	31	1,039	16.6	81	70	14.2
850	31	1,524	13.7	77	78	12.8
800	31	2,034	11.7	51	81	10.9
750	31	2,577	11.2		76	8.4
700	31	3,147	9.1		67	7.4
650	31	3,751	6.3		47	6.2
600	31	4,409	2.8		12	5.2
550	31	5,101	- 1.2		1	7.2
500	31	5,862	- 6.4		5	9.5
450	31	6,670	-12.2		357	11.3
400	31	7,567	-18.6		355	12.2
350	31	8,549	-25.5		332	12.2
300	31	9,650	-33.2		322	14.2
250	31	10,907	-42.2		287	17.1
200	31	12,380	-53.8		278	21.2
175	31	13,224	-60.4		282	21.0
150	31	14,170	-67.2		289	22.0
125	31	15,249	-74.3		294	20.4
100	30	16,529	-79.8		288	11.5
80	30	17,790	-78.9		291	7.8
70	30	18,558	-74.4		279	6.6
60	30	19,467	-68.6		259	6.4
50	30	20,578	-63.0		251	10.5
40	30	21,966	-59.0		271	14.8
30	29	23,792	-54.2		272	15.3
25	28	24,968	-51.9		270	15.9
20	27	26,422	-49.9		269	13.0
15	26	28,314	-47.7		261	14.4
10	23	31,003	-43.7		256	18.8
7	9	33,381	-39.7			

KING SALMON, ALASKA 995 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	15	- 3.9	81	57	7.0
1000	31	- 26			89	9.5
950	31	384	- 1.2	70	96	13.8
900	31	813	- 2.7	67	114	12.2
850	31	1,264	- 4.7	68	130	12.0
800	31	1,740	- 7.0	66	142	15.0
750	31	2,241	- 9.3	58	149	17.3
700	31	2,772	-12.7	54	152	17.7
650	31	3,334	-15.7	51	153	17.9
600	31	3,934	-19.3	51	151	17.5
550	31	4,573	-23.3	54	155	19.0
500	31	5,267	-28.0	55	158	19.4
450	31	6,011	-33.5	57	164	21.0
400	31	6,831	-39.7		163	22.7
350	31	7,731	-46.4		165	25.8
300	31	8,738	-53.2		164	[illegible]
250	31	9,904	-55.7		[illegible]	[illegible]
200	30	11,331	-53.6		[illegible]	[illegible]
175	30	12,191	-52.8		[illegible]	[illegible]
150	29	13,180	-52.7		[illegible]	16.9
125	29	14,356	-53.0		[illegible]	[illegible]
100	29	15,795	[illegible]		[illegible]	[illegible]
80	29	17,233	-53.4		[illegible]	[illegible]
70	29	18,092	-54.1		[illegible]	[illegible]
60	29	19,078	-54.6		[illegible]	[illegible]
50	29	20,244	-55.0		[illegible]	[illegible]
40	28	21,676	-55.6		[illegible]	[illegible]
30	28	23,507	-56.2		[illegible]	[illegible]
25	23	24,707	-56.3		281	44.5
20	22	26,105	-57.3		287	50.5
15	13	28,042	-55.2		[illegible]	[illegible]
10	5	30,783	-53.5			

+ KOROR, CAROLINE IS. 1008 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	3	28.2	81	60	4.1
1000	31	101	27.5	80	59	4.5
950	31	[illegible]	23.7	79	[illegible]	6.6
900	31	1,026	[illegible]	76	58	6.8
850	31	1,520	17.9	74	67	6.8
800	31	2,038	15.4	66	65	[illegible]
750	31	2,582	[illegible]	59	72	5.6
700	31	3,161	[illegible]	49	78	7.4
650	31	3,774	6.9	[illegible]	82	9.3
600	31	4,429	[illegible]	47	80	11.5
550	31	5,123	[illegible]	47	88	13.8
500	31	5,884	[illegible]	43	92	14.2
450	31	6,697	[illegible]	38	89	14.8
400	31	7,605	-15.4	[illegible]	87	16.1
350	31	8,599	-22.5		82	12.8
300	31	9,712	-30.9		92	12.2
250	31	10,979	-41.1		[illegible]	13.4
200	[illegible]	12,454	-53.6		[illegible]	15.1
175	29	13,297	-61.0		[illegible]	[illegible]
150	29	14,238	-68.7		[illegible]	[illegible]
125	[illegible]	15,308	-76.5		[illegible]	[illegible]
100	29	16,577	[illegible]		[illegible]	[illegible]
80	[illegible]	17,851	[illegible]		[illegible]	[illegible]
70	[illegible]	18,636	[illegible]		[illegible]	6.6
60	[illegible]	19,565	[illegible]		[illegible]	11.8
50	[illegible]	20,694	[illegible]		[illegible]	[illegible]
40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
30	27	23,937	[illegible]		[illegible]	[illegible]
25	25	25,118	[illegible]		[illegible]	[illegible]
20	24	26,576	-48.9		[illegible]	[illegible]
15	19	28,490	-45.4		267	[illegible]
10	13	31,215	[illegible]			

KOTZEBUE, ALASKA 1006 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	-13.9	73	88	10.5
1000	31	51			92	13.8
950	31	445	- 8.7	59	105	16.5
900	31	863	- 9.2	54	114	15.3
850	31	1,305	- 9.4	48	118	14.0
800	31	1,773	-10.7	49	122	11.8
750	31	2,262	-12.9	47	134	11.1
700	31	2,791	-15.3	44	143	12.2
650	31	3,340	-18.7	47	155	13.2
600	31	3,939	-22.6	46	156	14.4
550	31	4,564	-27.1	45	164	14.0
500	31	5,252	-31.9	43	171	14.7
450	31	5,981	-37.4		174	15.0
400	31	6,791	-43.3		183	14.8
350	31	7,678	-49.6		187	14.4
300	31	8,673	-55.8		190	16.3
250	31	9,823	-59.2		196	20.2
200	31	11,224	-57.3		203	21.4
175	31	12,071	-56.5		210	22.0
150	31	13,048	-56.6		219	22.9
125	31	14,204	-56.8		229	25.1
100	31	15,615	-57.3		240	28.2
80	31	17,023	-58.3		244	31.3
70	31	17,861	-59.2		247	34.8
60	31	18,825	-59.9		[illegible]	[illegible]
50	[illegible]	19,968	-60.6		262	43.9
40	[illegible]	21,355	-61.2		264	51.3
30	28	23,155	-62.1		272	[illegible]
25	26	24,293	-62.4		279	[illegible]
20	23	[illegible]	-62.4		280	87.6
15	19	[illegible]	-62.8		275	103.1
10	6	29,967	-62.8			

LAKE CHARLES, LA. 1023 MB

Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	5	4.6	78	39	4.5
1000	31	190	6.3	62	36	7.6
950	31	616	6.3	53	27	5.4
900	31	1,056	6.7	56	304	5.1
850	31	1,525	5.4	52	293	9.1
800	31	2,019	3.6	50	292	14.2
750	31	2,543	[illegible]	40	283	18.1
700	31	3,098	- .6	39	277	21.0
650	31	3,689	- 3.0		275	23.5
600	31	4,318	- 6.6		273	26.6
550	31	4,993	-10.5		269	31.3
500	31	5,721	-15.2		266	36.5
450	31	6,508	-20.8		264	38.7
400	31	7,371	-26.9		265	44.3
350	31	8,320	-33.8		263	51.7
300	31	9,382	-41.5		261	59.8
250	31	10,597	-50.0		261	[illegible]
200	31	12,028	-57.8		265	78.7
175	31	12,864	-60.7		264	72.8
150	31	13,819	-62.5		265	69.2
125	31	14,933	-65.3		265	63.7
100	31	16,284	-68.5		266	54.0
80	30	17,615	-68.8		256	[illegible]
70	29	18,433	-67.1		265	30.9
60	29	19,353	-64.6		[illegible]	26.4
50	29	20,474	-61.7		271	24.5
40	29	21,866	-58.6		266	18.6
30	29	23,695	-52.7		267	24.3
25	29	24,883	-48.6		264	31.2
20	29	26,364	[illegible]		260	41.0
15	27	28,297	-43.4		251	43.6
10	13	31,041	-41.[illegible]			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

Standard pressure surface (mb)	LANDER, WYO. 831 MB				Wind		LAS VEGAS, NEV. 946 MB				Wind		* LIHUE, HAWAII 1012 MB				Wind		LITTLE ROCK, ARK. 1015 MB				Wind		MCGRATH, ALASKA 992 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	1,696	- 9.7	65	251	1.0	31	660	2.5	47	286	4.9	31	36	20.2	84	291	4.3	31	79	- 2.2	78	339	3.1	31	103	-17.8	66	298	1.4
1000	31	244					31	207					31	147	21.6	79	328	3.3	31	194	- .5	58	329	4.9	31	43			96	11.8
950	31	645					31	623					31	582	18.5	80	22	2.9	31	606	- .2	52	330	7.4	31	438	-10.6	70	76	7.2
900	31	1,070					31	1,069	8.0	32	349	7.2	31	1,044	15.6	80	328	2.3	31	1,038	- .3	51	314	10.7	31	854	- 5.2	66	103	10.7
850	31	1,472					31	1,540	6.4	31	359	9.7	31	1,527	13.4	67	255	3.5	31	1,496	- .4	49	299	14.6	31	1,304	- 4.5	57	135	8.7
800	31	1,997	- 2.7	50	331	1.9	31	2,035	4.4	30	357	8.4	31	2,017	12.2	47	249	4.7	31	1,981	- 1.0	44	293	20.8	31	1,780	- 7.0	54	158	8.7
750	31	2,506	- 3.7	48	318	6.8	31	2,555	2.4	27	342	7.2	31	2,574	9.9	34	252	6.0	31	2,489	- 2.9	45	290	24.9	31	2,277	- 9.9	53	165	11.5
700	31	3,051	- 6.8	45	309	14.4	31	3,114	- .4		334	7.6	31	3,147	7.5	26	261	8.4	31	3,039	- 5.2	43	294	27.2	31	2,811	-12.9	52	170	15.2
650	31	3,623	-10.0	44	309	20.0	31	3,697	- 3.5		324	9.9	31	3,752	4.2	25	265	11.3	31	3,614	- 7.6	39	292	29.9	31	3,367	-16.5	52	167	15.0
600	31	4,240	-13.5	43	313	25.6	31	4,332	- 7.3		312	14.0	31	4,401	.7	20	272	16.2	31	4,239	-10.9	33	286	34.8	31	3,970	-20.3	50	169	15.7
550	31	4,893	-17.5	42	317	29.5	31	4,994	-11.7		313	16.5	31	5,089	- 3.2	18	272	19.4	31	4,898	-14.7	33	285	38.1	31	4,599	-24.7	48	168	16.5
500	31	5,606	-22.3	40	315	33.4	31	5,729	-16.7		309	18.3	31	5,843	- 8.1	18	276	22.3	31	5,619	-19.3	34	281	45.6	31	5,296	-29.5	46	169	18.8
450	31	6,371	-27.5	35	314	37.3	31	6,500	-22.4	32	302	21.2	31	6,648	-13.7	19	277	26.6	31	6,389	-24.5	35	277	50.3	31	6,029	-35.0	43	168	17.1
400	31	7,211	-33.7		316	42.0	31	7,367	-28.9		308	23.1	31	7,539	-20.1	20	274	30.7	31	7,244	-30.7	38	277	49.3	31	6,852	-41.0		174	20.6
350	31	8,133	-40.8		318	43.7	31	8,308	-36.2		309	26.4	31	8,514	-27.5	23	275	36.1	31	8,178	-37.7		277	55.0	31	7,746	-47.7		181	22.3
300	31	9,164	-48.6		316	49.3	31	9,360	-44.4		316	30.9	31	9,606	-35.3	22	276	38.7	31	9,224	-45.1		278	59.6	31	8,749	-59.8		182	22.5
250	31	10,343	-55.8		315	53.8	31	10,558	-53.1		316	36.5	31	10,853	-43.9		275	44.3	31	10,423	-52.7		283	65.3	31	9,909	-57.1		176	16.9
200	31	11,747	-60.1		316	56.1	31	11,973	-59.3		310	41.8	31	12,318	-56.1		268	51.1	31	11,842	-58.3		283	54.2	31	11,322	-56.3		187	16.9
175	31	12,580	-59.6		312	56.5	30	12,817	-61.1		308	36.9	31	13,164	-59.7		270	52.1	31	12,680	-59.2		285	48.8	31	12,174	-54.6		197	17.1
150	31	13,545	-59.6		309	55.4	30	13,776	-60.9		298	44.7	31	14,114	-65.7		274	48.8	31	13,549	-60.3		278	43.9	31	13,160	-54.6		211	18.5
125	31	14,684	-60.0		310	47.6	30	14,905	-63.0		295	41.4	31	15,205	-71.8		278	44.1	31	14,775	-62.0		281	37.9	31	14,327	-54.7		226	16.3
100	31	16,072	-61.4		306	39.6	30	16,269	-65.9		294	36.3	31	16,504	-77.0		276	36.9	31	16,144	-64.9		279	33.2	31	15,752	-55.3		241	18.5
80	31	17,454	-62.1		302	32.1	30	17,625	-65.6		300	36.3	30	17,785	-75.4		268	23.1	31	17,504	-65.1		278	28.7	31	17,173	-55.9		257	22.5
70	31	18,279	-61.8		304	29.7	29	18,440	-64.8		301	33.7	30	18,561	-72.6		265	15.7	30	18,324	-64.5		282	24.5	31	18,019	-56.4		271	24.3
60	31	19,233	-62.0		305	28.6	29	19,381	-63.4		305	29.6	30	19,476	-67.8		271	10.9	30	19,267	-63.2		280	19.4	31	18,999	-57.1		278	27.6
50	30	20,367	-61.8		306	30.5	27	20,505	-62.1		316	15.2	30	20,583	-63.6		266	7.4	30	20,392	-61.6				31	20,150	-57.8		282	32.4
40	27	21,747	-61.5		305	29.3	22	21,887	-60.6		321	15.0	29	21,962	-60.1		259	8.0	28	21,780	-59.6				31	21,555	-58.7		292	39.0
30	25	23,546	-61.1		303	30.7	21	23,683	-58.7		308	16.5	27	23,777	-55.3		286	9.7	26	23,597	-55.2				28	23,377	-59.8		299	48.8
25	21	24,668	-60.8		296	36.3	18	24,830	-57.6		294	22.0	26	24,947	-52.9		301	8.5	24	24,769	-51.9				24	24,550	-59.5			
20	16	26,039	-57.8		284	50.5	13	26,218	-56.0				26	26,393	-50.8		292	5.8	20	26,220	-49.2				18	26,017	-58.4			
15													25	28,266	-48.9		244	3.9	8	28,147	-44.1				6	27,874	-57.4			
10													24	30,945	-45.5		242	7.2												
7													24	33,351	-40.9		264	14.2												
5													11	35,682	-35.4															

Standard pressure surface (mb)	+ MAJURO, MARSHALL IS. 1009 MB				Wind		MARCUS IS., N. PACIFIC 1016 MB				Wind		MEDFORD, OREG. 976 MB				Wind		* MIAMI, FLA. 1018 MB				Wind		* MIDLAND, TEXAS 920 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	3	28.5	77	73	12.0	31	9	24.6	76	98	7.0	31	401	- .1	98	228	.4	31	4	13.6	92	343	3.3	31	874	- .6	78	328	1.4
1000	31	87	27.5	76	71	14.6	31	147	23.4	72	99	7.6	31	209					31	158	15.9	75	353	4.5	31	206				
950	31	531	23.5	77	70	20.6	31	591	19.7	78	107	7.6	31	625	2.6	81	272	1.2	31	594	14.1	71	37	1.7	31	622				
900	31	1,011	20.7	74	76	20.4	31	1,058	16.7	76	130	5.6	31	1,063	5.0	61	176	3.9	31	1,049	12.5	61	239	3.3	31	1,055	2.9	59	266	1.4
850	31	1,504	18.1	67	78	20.0	31	1,544	14.6	68	167	3.7	31	1,532	5.8	46	211	9.7	31	1,527	11.3	46	258	7.2	31	1,519	4.2	53	265	5.4
800	31	2,022	15.9	63	87	16.3	31	2,056	12.4	54	221	5.6	31	2,026	3.5	48	233	12.4	31	2,032	9.9	42	262	11.3	31	2,012	3.7	43	273	9.3
750	31	2,564	13.9	54	90	13.4	31	2,594	10.3	41	256	7.6	31	2,544	.8	45	247	13.8	31	2,568	7.6	40	257	15.0	31	2,534	1.8	44	284	12.0
700	31	3,148	11.0	48	91	13.2	31	3,169	8.3	39	266	10.9	31	3,099	- 2.2	40	261	14.4	31	3,133	5.1	35	255	19.4	31	3,089	- .6	43	280	15.7
650	31	3,760	7.8	42	89	15.7	31	3,774	5.0	38	266	14.4	31	3,679	- 5.8	41	273	15.3	31	3,729	1.8	34	255	23.1	31	3,676	- 3.7	38	278	17.9
600	31	4,419	4.1	42	88	19.0	31	4,427	1.5	33	263	17.7	31	4,307	- 9.7	41	277	21.0	31	4,375	- 2.1	31	256	27.6	31	4,306	- 7.7	37	279	21.0
550	31	5,115	0.0	43	87	20.2	31	5,118	- 2.1	31	261	21.6	31	4,968	-13.7	45	280	24.1	31	5,051	- 6.2	28	259	32.2	31	4,976	-11.6	36	281	23.7
500	31	5,879	- 4.4	41	88	23.3	31	5,875	- 6.7	29	261	25.3	31	5,692	-18.5	51	280	27.8	31	5,802	-10.7	29	257	36.9	31	5,703	-16.5	34	278	28.0
450	31	6,697	- 9.4	39	85	25.8	31	6,688	-11.6	25	256	28.7	30	6,469	-23.8	51	280	28.2	31	6,596	-16.2	28	261	42.5	31	6,482	-22.3	36	277	33.2
400	31	7,605	-14.4	36	90	28.7	31	7,584	-17.5	29	258	31.5	30	7,327	-30.1	46	279	30.7	31	7,483	-21.8	30	263	49.9	31	7,342	-28.5	36	277	37.9
350	31	8,605	-21.0		90	21.4	31	8,572	-24.2	25	259	35.4	30	8,264	-37.0		274	33.6	31	8,452	-28.8	29	259	57.7	31	8,284	-35.7	35	271	45.5
300	31	9,725	-29.3		101	15.9	31	9,679	-32.2	23	261	38.3	30	9,312	-45.2		283	36.5	31	9,537	-37.1	31	258	62.2	31	9,339	-42.8		268	56.3
250	31	11,000	-39.6		116	15.9	31	10,941	-41.7		263	40.8	30	10,504	-54.4		281	45.1	31	10,772	-46.7		258	68.2	31	10,543	-51.7		270	61.0
200	31	12,486	-52.2		118	16.7	30	12,417	-53.2		262	43.3	29	11,907	-61.7		275	39.6	30	12,217	-57.1		262	75.2	31	11,968	-58.2		267	68.6
175	31	13,336	-59.5		110	16.7	30	13,265	-59.8		261	43.5	29	12,733	-62.4		278	40.4	30	13,052	-62.1		263	73.6	31	12,805	-60.5		271	61.8
150	31	14,282	-67.5		90	15.9	30	14,214	-66.7		259	39.0	29	13,686	-61.7		278	42.7	30	13,996	-65.7		264	73.0	30	13,761	-61.7		275	51.1
125	31	15,358	-75.6		80	21.6	25	15,295	-74.0		260	36.1	29	14,814	-62.6		285	38.7	30	15,094	-69.4		265	66.2	30	14,885	-64.2		277	48.4
100	31	16,625	-82.0		84	26.0	17	16,575	-79.3		254	27.6	29	16,186	-63.6		286	30.5	28	16,412	-73.6		262	53.8	29	16,243	-67.2		278	44.9
80	31	17,889	-75.1		83	11.1	13	17,847	-78.0		256	18.1	28	17,557	-63.5		290	22.7	28	17,713	-73.8		266	38.9	29	17,583	-68.3		280	35.0
70	31	18,675	-69.4		264	3.9	13	18,616	-74.4		259	10.1	27	18,377	-63.0		299	19.8	28	18,504	-72.5		263	33.6	29	18,394	-66.9		282	28.4
60	31	19,605	-64.4		267	17.7	13	19,525	-69.1		269	5.2	27	19,326	-62.6		304	20.2	28	19,408	-68.6		261	28.6	27	19,321	-65.3		286	22.9
50	31	20,733	-59.9		268	28.6	10	20,614	-65.8		292	2.7	25	20,452	-61.3		312	19.6	28	20,512	-64.1		264	27.2	27	20,434	-63.4		289	22.7
40	29	22,136	-57.0		270	35.5	10	21,985	-60.7				25	21,837	-61.3		319	19.4	26	21,895	-59.1		260	25.8	27	21,813	-61.0		281	20.2
30	27	23,976	-52.9		273	40.2	8	23,819	-54.4				23	23,642	-60.9		333	24.3	26	23,723	-52.8		260	27.4	26	23,616	-57.1		275	25.6
25	27	25,158	-50.7		274	37.3	8	24,993	-51.7				21	24,797	-60.4		338	25.4	26	24,912	-48.2		262	26.6	25	24,789	-54.5		276	28.7
20	25	26,625	-48.5		272	29.5	8	26,450	-48.5				18	26,192	-59.4		333	26.8	26	26,400	-43.3		264	25.4	24	26,216	-51.5		268	36.7
15	21	28,530	-45.6		266	25.3	8	28,355	-45.8				16	28,022	-58.4		320	32.8	26	28,369	-41.5		263	20.4	22	28,107	-47.3		261	54.0
10	11	31,266	-39.9				6	31,098	-39.7				14	30,584	-56.3		315	35.9	23	31,098	-39.5		239	20.4	18	30,782	-44.3		253	75.4
7							5	33,546	-35.7				12	32,924	-53.5				21	33,554	-35.0		233	18.6	14	33,185	-39.8		252	90.3
5							5	35,889	-32.9				6	35,031	-53.5				10	35,926	-32.4				8	35,497	-34.5			
4																			5	37,544	-30.5									

Standard pressure surface (mb)	MONTGOMERY, ALA. 1015 MB				Wind		NANTUCKET, MASS. 1014 MB				Wind		NASHVILLE, TENN. 1000 MB				Wind		JOHN F. KENNEDY INT. AP, N. Y. 1017 MB				Wind		NOME, ALASKA 1001 MB				Wind	
	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed	Number of observations	Dynamic height	Temperature	Relative humidity	Direction	Speed
SURFACE	31	61	1.9	76	350	3.5	30	14	- 1.5	71	316	8.4	31	177	- 3.7	76	318	4.7	31	5	- 2.5	61	308	8.5	31	7	- 9.4	76	84	8.2
1000	31	183	2.9	64	354	5.8	30	123			304	9.7	31	178			5	3.9	31	141	- 3.5	62	308	10.9	31	14			96	11.8
950	31	601	3.2	55	339	10.1	30	524	- 4.1	68	284	14.8	31	584	- 4.0	65	299	6.2	31	545	- 5.5	67	300	14.6	31	413	- 7.2	63	102	12.8
900	31	1,038	3.4	51	312	11.1	30	954	- 6.1	65	282	19.4	31	1,010	- 4.3	53	292	11.7	31	969	- 7.2	66	298	18.3	31	836	- 7.4	64	120	12.6
850	31	1,502	3.2	46	293	15.5	30	1,400	- 8.0	60	278	23.1	31	1,461	- 3.7	48	285	16.7	31	1,413	- 8.6	59	296	21.4	31	1,282	- 7.8	62	128	13.6
800	31	1,993	2.0	44	284	19.6	30	1,870	- 9.5	52	275	26.2	31	1,940	- 4.5	48	279	21.2	31	1,882	-10.0	59	287	22.7	31	1,752	- 9.6	59	130	13.2
750	31	2,514	.7		277	24.3	30	2,365	-11.6	46	270	30.5	31	2,445	- 6.2	49	280	25.6	31	2,383	-11.8	50	277	27.4	31	2,245	-12.5	56	137	13.8
700	31	3,065	- 1.5		278	29.3	30	2,895	-13.4	39	268	35.5	31	2,985	- 8.0	46	275	29.5	31	2,905	-13.4	44	275	33.4	31	2,773	-15.3	54	149	15.3
650	31	3,650	- 4.6	38	272	33.8	30	3,465	-15.5	40	265	42.7	31	3,555	-10.0	45	272	33.0	31	3,469	-15.8	39	274	39.4	31	3,322	-18.5	54	146	16.7
600	31	4,278	- 8.2	37	268	36.7	30	4,058	-18.5	40	265	52.4	31	4,173	-13.3	43	270	35.9	31	4,066	-19.1	37	272	42.2	31	3,922	-22.2	51	147	17.7
550	31	4,948	-12.0		266	41.6	30	4,699	-22.3	41	264	54.8	31	4,826	-16.9	42	267	36.5	31	4,712	-23.0	38	271	46.6	31	4,548	-26.5	49	153	17.7
500	31	5,672	-16.3		263	48.6	30	5,397	-26.2	39	261	62.5	31	5,540	-21.4	39	267	43.9	31	5,401	-27.2	37	271	54.2	31	5,238	-31.4	46	160	17.3
450	31	6,452	-21.8		263	55.6	30	6,148	-30.4		269	69.9	31	6,304	-26.6		266	48.6	31	6,154	-31.5		268	64.3	31	5,969	-36.7		169	19.4
400	31	7,314	-28.1		263	62.4	30	6,982	-35.5		258	76.5	31	7,151	-32.2		256	49.1	31	6,979	-36.5		266	74.6	31	6,782	-42.9		158	21.0
350	31	8,259	-35.0		261	66.2	30	7,900	-41.4		254	82.6	31	8,080	-38.9		253	55.9	31	7,891	-42.6		264	84.3	31	7,670	-49.2		166	25.4
300	31	9,318	-42.5		265	73.4	30	8,932	-47.5		251	76.1	31	9,121	-45.9		256	64.7	31	8,920	-47.8		264	86.1	31	8,666	-55.5		154	20.2
250	31	10,528	-51.1		268	76.3	30	10,122	-52.6		253	75.6	31	10,314	-52.7				31	10,110	-52.5		263	91.5	31	9,820	-57.7		162	20.4
200	31	11,956	-57.8		268	92.5	30	11,555	-54.7		254	63.7	28	11,732	-57.5		259	62.0	31	11,546	-54.2		266	77.1	31	11,232	-55.7		187	16.5
175	30	12,794	-60.2		266	88.0	30	12,409	-55.4		257	62.5	28	12,574	-58.6				31	12,400	-55.2		264	69.3	31	12,084	-54.5		203	19.2
150	30	13,751	-62.4		265	81.8	30	13,392	-56.1		256	58.5	27	13,545	-59.4				31	13,390	-56.2		263	61.4	31	13,072	-54.6		216	16.1
125	30	14,872	-64.8		265	68.8	29	14,546	-57.8		254	49.7	26	14,679	-61.2				31	14,544	-58.3		263	60.2	30	14,237	-55.0		221	20.0
100	29	16,228	-67.3		265	60.4	28	15,946	-59.3		252	47.2	23	16,047	-62.9				29	15,942	-60.0		264	54.0	28	15,670	-55.5		234	24.3
80	28	17,571	-67.6		267	45.1	28	17,341	-60.1		258	41.4	21	17,416	-63.3				29	17,334	-60.8		266	50.7	27	17,091	-56.0		245	28.7
70	28	18,381	-66.8		265	36.1	28	18,171	-60.1		258	39.0	21	18,241	-63.2				29	18,171	-60.4		266	43.9	26	17,937	-56.5		250	32.8
60	28	19,311	-65.2		267	31.3	28	19,136	-59.8		255	34.0	21	19,185	-62.4				29	19,127	-59.4		268	37.1	26	18,918	-56.8		255	36.9
50	27	20,430	-62.6		272	25.4	28	20,276	-59.6		258	34.0	21	20,315	-60.6				28	20,274	-59.8		265	36.3	25	20,066	-56.7		262	42.5
40	27	21,815	-59.3		267	28.0	27	21,674	-57.9		258	35.2	21	21,710	-58.6				27	21,673	-58.4		266	40.4	23	21,671	-57.8		268	50.9
30	25	23,636	-54.3		264	30.9	27	23,503	-54.0		256	45.1	20	23,541	-54.5				26	23,493	-55.1		266	42.0	23	23,280	-58.8		272	59.4
25	26	24,818	-50.3		264	32.8	27	24,681	-51.1		248	40.8	18	24,722	-52.0				25	24,669	-52.9		264	44.8	20	24,417	-59.6		277	62.5
20	25	26,283	-46.0		264	36.5	27	26,142	-48.0		256	48.0	16	26,179	-49.1				24	26,105	-50.6		262	49.5	18	25,844	-59.7		279	76.5
15	20	28,182	-43.4		258	49.5	27	28,055	-43.7		256	57.4	12	28,116	-45.0				20	28,024	-46.1		266	56.3	9	27,670	-59.1			
10	8	30,920	-33.4				24	30,792	-39.5		253	81.8	11	30,867	-41.0				8	30,718	-41.5									
7							20	33,271	-35.0		257	103.1	7	33,416	-36.8															
5							17	35,548	-31.0				7	35,742	-35.3															

See reference note at end of table

RAWINSONDE DATA

Average monthly values

DECEMBER 1963

Standard pressure surface (mb.)	NORFOLK, VA. 1019 MB						NORTH PLATTE, NEBR. 931 MB						* OAKLAND, CALIF. 1022 MB						OKLAHOMA CITY, OKLA. 977 MB						OLYMPIA, WASH. 1014 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	9	- .4	76	302	3.9	31	848	- 9.5	72	320	5.2	31	6	4.7	85	90	3.1	31	392	- 2.6	71	31[illegible]	1.9	31	58	4.4	90	206	3.5
1000	31	162	.3	64	315	4.9	31	206					31	187	7.2	59	77	4.1	31	202					31	177	5.2	81	207	4.7
950	31	571	- 1.1	48	321	8.9	31	606					31	619	10.5	[illegible]	48	5.6	31	611	- .5	57	286	4.6	31	591	5.2	68	201	9.3
900	31	1,003	- 2.3	52	295	11.3	31	1,027	- 6.5	65	320	9.5	31	1,063	10.8	43	93	5.1	31	1,044	.2	64	300	8.4	31	1,032	4.1	62	217	12.8
850	31	1,457	- 3.1	45	278	17.3	31	1,477	- 9.8	56	326	17.3	31	1,518	9.2	40	327	6.2	31	1,501	- .2	52	292	11.5	31	1,492	2.9	58	227	15.5
800	31	1,936	- 4.3	40	271	22.9	31	1,956	- 3.9	53	318	22.1	31	2,008	6.8	38	323	8.2	31	1,986	- .5	45	298	14.2	31	1,986	[illegible]	52	235	17.3
750	31	2,443	- 5.5	41	269	30.5	31	2,462	- 6.2	50	317	25.4	31	2,564	4.0	36	315	9.9	31	2,502	- 2.1	38	297	18.5	31	2,499	- 2.0	46	248	19.0
700	31	2,984	- 7.5	40	265	38.7	31	3,000	- 8.7	49	311	27.0	31	3,124	1.0	34	313	12.2	31	3,047	- 4.5	36	296	20.8	31	3,048	- 4.6	44	255	20.8
650	31	3,551	- 9.9	36	266	44.7	31	3,566	-12.1	48	312	28.9	31	3,712	- 2.8	34	311	14.8	31	3,624	- 7.6	33	292	23.9	31	3,623	- 7.6	43	262	19.6
600	31	4,173	-13.2	39	265	49.9	31	4,179	-15.6	49	312	31.3	31	4,346	- 6.9	33	306	17.9	31	4,246	-11.0	34	287	28.9	31	4,247	-12.0	46	267	21.4
550	31	4,823	-17.0	38	266	56.7	31	4,826	-19.5	47	311	33.4	31	5,014	-11.3	33	304	20.4	31	4,908	-14.9	33	286	34.6	31	4,900	-16.4	47	269	23.5
500	31	5,540	-21.5	38	265	64.3	31	5,533	-24.0	44	307	34.8	31	5,745	-16.5	36	305	23.9	31	5,624	-19.8	36	286	37.9	31	5,618	-21.4	44	270	27.2
450	31	6,303	-26.4		264	72.1	31	6,290	-29.3		306	37.1	31	6,523	-22.1	37	305	24.9	31	6,393	-25.1	34	279	44.3	31	6,382	-26.5	44	274	30.3
400	31	7,151	-32.2	38	260	78.5	31	7,125	-35.4		304	39.0	31	7,385	-28.5	40	306	29.3	31	7,244	-31.3	34	273	46.6	31	7,229	-32.4	42	286	32.6
350	31	8,081	-38.5		260	84.9	31	8,042	-41.8		303	42.5	31	8,327	-35.7	38	306	32.8	31	8,175	-38.5		272	53.8	31	8,158	-38.9		286	40.0
300	31	9,126	-45.3		259	94.2	31	9,070	-49.		301	47.0	31	9,382	-43.8		310	38.3	31	9,218	-46.0		270	61.4	31	9,199	-46.4		286	49.0
250	31	10,322	-52.0		259	98.1	31	10,245	-56.0		303	50.9	31	10,583	-52.8		310	42.7	31	10,410	-53.5		275	60.6	31	10,388	-54.5		296	42.0
200	31	11,750	-56.4		263	90.7	31	11,653	-58.9		302	53.0	31	11,998	-55.		306	46.8	31	11,825	-58.6		270	71.5	30	11,796	-60.6		301	41.2
175	31	12,596	-57.1		266	75.8	31	12,488	-58.9		301	51.3	31	12,828	-61.8		302	48.0	31	12,662	-59.6		274	65.7	30	12,626	-60.4		295	39.6
150	31	13,567	-58.8		265	71.5	31	13,458	-58.5		298	48.6	31	13,783	-61.7		300	42.7	31	13,624	-60.6		278	62.9	30	13,589	-59.4		298	38.3
125	31	14,706	-60.8		264	65.1	31	14,601	-59.5		298	44.1	31	14,908	-63.8		297	39.6	31	14,755	-62.1		278	55.6	30	14,729	-60.2		301	35.9
100	30	16,081	-62.5		263	54.2	31	15,992	-61.2		298	38.1	30	16,270	-65.3		295	31.9	30	16,129	-64.0		276	51.5	30	16,117	-61.3		301	32.0
80	30	17,458	-62.9		263	44.3	31	17,373	-62.4		295	36.5	30	17,626	-65.7		298	25.1	29	17,494	-65.0		280	36.5	30	17,501	-61.2		299	28.2
70	30	18,286	-62.5		263	40.2	31	18,203	-62.5		294	35.5	30	18,448	-64.8		301	21.4	29	18,316	-64.4		284	33.2	30	18,333	-61.7		302	26.6
60	30	19,235	-61.1		262	40.0	31	19,148	-62.3		292	32.6	30	19,382	-63.8		304	18.6	29	19,255	-63.2		283	28.6	30	19,284	-61.1		305	25.8
50	30	20,370	-60.2		260	33.0	31	20,274	-62.3		295	32.1	27	20,513	-62.1		319	16.7	29	20,479	-62.2		283	24.5	30	20,415	-61.1		307	24.9
40	29	21,773	-57.0		265	30.7	31	21,653	-61.8		291	29.3	26	21,893	-60.8		322	14.6	29	21,761	-60.7		280	27.0	30	21,799	-61.8		310	25.4
30	28	23,619	-51.8		263	34.0	31	23,438	-60.4		287	35.5	25	23,687	-59.5		313	16.7	27	23,555	-57.5		276	29.7	26	23,601	-61.8		324	25.3
25	27	24,819	-47.6		256	37.3	29	24,677	-59.4		284	38.1	25	24,831	-58.5		313	19.4	22	24,731	-54.8		270	33.8	21	24,757	-61.2		328	26.8
20	22	26,297	-45.1		257	41.6	29	25,978	-57.7		276	44.7	23	26,243	-57.4		303	26.9	19	26,185	-51.5		265	45.1	18	26,148	-60.9		311	38.5
15	14	28,206	-43.9				24	27,807	-55.0		269	49.9	21	28,073	-55.8		286	33.8	11	28,000	-49.5				12	27,894	-62.1			
10							21	29,652	-49.5		262	74.6	18	30,689	-50.8		272	48.8	5	30,676	-47.1									
7							14	32,775	-48.3		260	92.1	10	33,073	-43.6															
5							10	35,134	-42.0																					

Standard pressure surface (mb.)	OMAHA, NEBR. 973 MB						PEORIA, ILL. 998 MB						PITTSBURGH, PA. 975 MB						+ PONAPE, CAROLINE IS. 1005 MB						PORTLAND, ME. 1013 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	403	-10.8	72	312	5.8	31	200	-11.5	76	286	3.7	31	353	- 6.9	79	242	5.2	31	39	28.3	77	71	7.2	31	20	-11.0	75	314	3.3
1000	31	191					31	184			314	4.1	31	163					31	82	27.8	77	73	8.2	31	115	- 9.6	57	317	5.2
950	31	586	- 8.6	67	313	9.5	31	582	- 8.3	66	294	11.7	31	564	- 7.0	78	251	10.1	31	530	23.8	79	78	13.8	31	515	- 8.9	60	298	8.2
900	31	1,007	- 6.5	60	322	16.9	31	1,000	- 7.5	69	298	15.2	31	985	- 7.9	77	270	15.9	31	1,008	20.6	70	83	19.0	31	930	-10.1	61	293	8.9
850	31	1,455	- 5.7	53	313	20.8	31	1,445	- 7.7	62	297	18.6	31	1,427	-10.0	76	274	17.9	31	1,502	18.3	72	81	14.0	31	1,370	-11.0	56	297	13.4
800	31	1,930	- 6.7	51	310	23.9	31	1,916	- 8.7	43	298	23.1	31	1,895	-10.9	67	276	22.3	31	2,021	15.9	68	79	11.3	31	1,835	-12.2	52	294	18.5
750	31	2,428	- 8.2	46	311	26.2	31	2,418	- 9.7	37	299	26.4	31	2,386	-12.6	58	275	27.0	31	2,563	13.5	58	93	11.5	31	2,327	-14.1	51	283	21.2
700	31	2,966	-10.2	43	307	28.2	31	2,946	-11.7	37	296	29.3	31	2,914	-14.6	50	273	30.1	31	3,146	10.6	52	90	12.0	31	2,849	-15.9	50	276	26.0
650	31	3,528	-12.8	39	310	32.2	31	3,511	-14.4	36	296	32.3	31	3,471	-17.1	47	273	34.0	31	3,757	7.2	46	88	14.4	31	3,405	-18.6	49	271	29.5
600	31	4,142	-16.0	36	309	34.8	31	4,115	-17.3	34	294	36.9	31	4,071	-19.6	41	274	36.8	31	4,418	3.5	42	83	16.3	31	3,999	-22.1	47	267	33.4
550	31	4,786	-20.1	38	307	39.2	31	4,761	-21.2	34	294	42.2	31	4,711	-22.8		276	46.6	31	5,113	- .2	38	83	18.8	31	4,632	-25.7	44	268	39.2
500	31	5,493	-24.6		307	39.8	31	5,459	-26.0		293	45.8	31	5,407	-26.9		276	52.3	31	5,877	- 4.7	39	86	19.0	31	5,320	-29.8	40	265	43.3
450	31	6,245	-30.9		305	41.4	31	6,211	-30.8		293	51.1	31	6,156	-31.6		276	61.0	31	6,696	- 9.4	36	90	21.6	31	6,057	-34.8		269	46.0
400	31	7,081	-36.0		302	47.0	31	7,041	-36.2		289	56.1	31	6,987	-36.7		271	65.7	31	7,604	-14.9		94	20.2	31	6,879	-39.8		268	56.7
350	31	7,996	-42.4		299	51.9	31	7,956	-42.2		292	59.8	31	7,900	-42.8		273	66.4	31	8,601	-21.7		94	18.6	31	7,782	-44.5		264	66.0
300	31	9,022	-49.6		293	57.3	31	8,984	-48.8		290	63.7	31	8,925	-49.0		269	72.3	31	9,719	-29.8		101	16.7	31	8,805	-48.7		261	73.2
250	31	10,198	-55.5		293	61.8	31	10,166	-54.1		287	66.0	31	10,108	-53.3		265	75.0	31	10,992	-40.0		104	19.6	31	9,994	-51.8		260	76.5
200	31	11,613	-57.2		290	59.1	31	11,591	-55.3		288	63.3	31	11,540	-54.9		264	67.6	31	12,476	-52.5		105	23.1	31	11,437	-52.7		258	68.2
175	31	12,458	-57.3		290	55.2	31	12,442	-56.1		286	56.7	31	12,392	-55.5		264	58.7	31	13,325	-59.8		100	25.6	31	12,298	-53.1		259	63.1
150	31	13,432	-57.7		291	52.4	31	13,421	-56.5		283	53.6	31	13,371	-57.2		264	60.0	31	14,271	-67.6		93	27.8	31	13,289	-54.1		258	57.7
125	31	14,580	-58.9		289	47.6	31	14,574	-57.9		285	50.7	31	14,520	-58.5		263	52.4	30	15,346	-75.4		83	31.7	31	14,456	-55.3		258	56.5
100	31	15,978	-60.0		288	43.3	31	15,975	-59.8		285	43.5	31	15,918	-59.7		266	48.6	29	16,617	-81.5		85	20.9	31	15,873	-57.4		261	54.0
80	31	17,365	-61.7		290	38.3	30	17,370	-60.5		280	39.6	30	17,315	-59.9		270	40.4	29	17,891	-73.5		93	6.6	31	17,281	-57.9		257	49.9
70	31	18,190	-61.3		291	37.3	30	18,203	-61.0		280	36.7	30	18,149	-59.7		269	38.1	29	18,679	-69.3		268	6.2	30	18,128	-57.9		256	47.6
60	31	19,148	-61.9		290	34.8	30	19,157	-61.3		282	35.5	30	19,111	-60.7		269	36.3	29	19,608	-65.0		269	18.5	30	19,095	-58.0		259	43.3
50	31	20,277	-61.4		289	34.0	30	20,290	-60.9		282	30.7	29	20,245	-60.6		267	34.8	28	20,729	-60.5		266	28.2	30	20,242	-58.2		258	39.8
40	30	21,663	-61.2		289	36.5	29	21,681	-60.0		278	33.2	28	21,644	-58.8		268	37.1	26	22,129	-56.8		269	36.9	30	21,648	-57.6		258	42.5
30	27	23,476	-58.8		282	37.3	29	23,487	-57.6		273	36.3	28	23,454	-55.3		265	38.1	24	23,959	-53.2		270	35.4	30	23,475	-55.0		254	45.3
25	24	24,630	-56.4		281	43.3	29	24,643	-55.4		269	42.5	27	24,620	-53.1		262	44.5	21	25,137	-50.7		268	39.6	28	24,643	-52.8		257	52.4
20	22	26,063	-53.5		274	51.7	28	26,067	-53.4		266	50.5	26	26,086	-49.2		260	53.6	21	26,597	-48.3		265	34.0	24	26,089	-49.6		266	64.1
15	18	27,954	-49.6		268	58.9	28	27,934	-49.7		260	63.1	24	27,982	-46.4		255	61.6	11	28,502	-45.4		262	35.5	9	28,014	-39.6			
10	9	30,674	-43.7				27	30,625	-42.9		256	81.8	22	30,722	-41.6		255	80.2	5	31,192	-41.1									
7							23	33,060	-38.5		257	102.4	15	33,146	-37.8		256	95.8												
5							21	35,336	-34.3				14	35,487	-33.2															

Standard pressure surface (mb.)	RAPID CITY, S. DAK. 908 MB						ST. CLOUD, MINN. 981 MB						ST. PAUL IS., ALASKA 992 MB						SALEM, OREG. 1016 MB						SALT LAKE CITY, UTAH 880 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	966	- 7.9	65	321	5.2	31	316	-14.8	78	303	2.5	31	10	- .6	90	62	3.5	31	61	2.8	89	197	3.3	31	1,288	- 5.6	84	201	2.9
1000	31	207					31	160					31	- 54			158	3.9	31	189	4.3	80	201	4.1	31	271				
950	31	607					31	563	-12.7	72	313	7.2	31	354	- 2.8	86	88	6.2	31	608	6.2	67	207	8.9	31	477				
900	31	1,035	- 7.0	54	319	5.8	31	973	-11.3	71	315	13.4	31	782	- 5.5	83	107	5.4	31	1,052	5.8	61	213	13.0	31	1,109				
850	31	1,483	- 4.6	55	316	17.1	31	1,412	-10.8	62	316	16.1	31	1,229	- 7.9	78	126	5.6	31	1,518	4.1	59	223	14.8	31	1,458	- 3.6	74	195	3.3
800	31	1,960	- 5.6	54	319	25.8	31	1,878	-11.2	55	319	17.5	31	1,698	-10.3	69	122	7.0	31	2,009	2.1	55	234	15.9	31	2,039	- 3.0	60	212	3.9
750	31	2,460	- 7.4	52	322	30.1	31	2,369	-12.7	51	311	21.2	31	2,194	-12.8	55	116	7.0	31	2,524	- .4	50	246	17.3	31	2,551	- 3.9	50	231	4.0
700	31	3,000	-10.3	53	319	33.0	31	2,896	-15.1	47	312	24.5	31	2,717	-15.6	51	115	7.0	31	3,077	- 3.8	45	257	18.5	31	3,092	- 6.1	47	300	10.9
650	31	3,560	-13.3	52	318	33.4	31	3,450	-17.3	46	313	28.2	31	3,273	-18.9	49	124	6.2	31	3,653	- 7.4	40	260	20.6	31	3,670	- 9.1	49	304	16.1
600	31	4,173	-16.2	45	315	33.0	31	4,051	-20.4	47	314	31.7	31	3,865	-22.9	49	135	6.8	31	4,277	-11.3	41	261	23.7	31	4,286	-12.2	47	310	20.0
550	31	4,810	-20.7	42	313	35.9	31	4,687	-24.0	44	313	35.7	31	4,493	-27.4	48	150	6.6	31	4,935	-15.5	45	262	25.8	31	4,947	-16.1	45	313	24.3
500	31	5,522	-25.1	42	312	38.9	31	5,380	-28.4	45	310	35.5	31	5,177	-32.2	46	158	7.8	31	5,653	-19.8	46	269	30.9	31	5,659	-20.4	43	311	29.0
450	31	6,274	-30.2	39	312	42.3	31	6,119	-33.6	46	313	36.9	31	5,900	-37.6		166	8.7	31	6,420	-25.0	45	270	34.0	31	6,430	-25.4	42	316	32.8
400	31	7,108	-36.5		312	43.9	31	6,944	-39.5		314	40.6	31	6,716	-43.3		171	9.0	31	7,273	-31.2	42	272	40.4	31	7,276	-31.9		316	34.8
350	31	8,020	-43.4		312	48.6	31	7,846	-45.7		315	42.3	31	7,604	-48.8		177	12.8	31	8,205	-38.2		276	42.5	31	8,205	-39.4		315	37.5
300	31	9,041	-50.5		312	52.1	31	8,859	-51.3		312	48.2	31	8,605	-53.6		193	14.6	31	9,249	-45.9		280	42.7	31	9,242	-47.7		311	37.9
250	31	10,213	-56.3		313	55.8	31	10,029	-55.6		308	51.7	31	9,773	-53.8		176	14.0	31	10,438	-54.5		283	50.7	31	10,425	-55.3		313	41.4
200	31	11,619	-58.8		311	52.6	31	11,447	-56.4		303	50.1	30	11,217	-51.5		185	14.6	31	11,864	-47.4		286	45.3	31	11,829	-60.1		314	44.9
175	31	12,458	-58.5		311	51.7	31	12,296	-56.0		303	47.8	29	12,077	-51.1		194	15.7	31	12,673	-61.1		291	40.6	31	12,661	-60.8		312	41.2
150	31	13,427	-58.7		305	48.4	31	13,276	-56.6		300	46.0	28	13,079	-50.8		206	16.9	31	13,631	-60.5		299	40.0	31	13,620	-60.8		310	41.2
125	30	14,568	-59.2		302	44.9	31	14,428	-57.8		298	44.5	29	14,266	-50.8		212	16.7	31	14,766	-61.3		296	37.7	31	14,752	-61.6		311	38.1
100	30	15,962	-60.3		303	41.6	31	15,831	-59.0		296	41.6	29	15,719	-50.6		224	17.5	31	16,148	-61.8		294	32.2	31	16,129	-62.7		309	33.4
80	29	17,344	-61.6		300	39.2	31	17,227	-60.0		298	41.8	29	17,171	-51.3		233	19.2	30	17,522	-62.3		297	28.0	31	17,501	-63.4		307	31.3
70	28	18,172	-62.2		301	37.5	31	18,067	-60.9		296	38.9	29	18,039	-51.6		243	21.0	30	18,349	-61.9		300	24.6	31	18,334	-62.7		310	27.8
60	26	19,121	-62.0		301	35.9	31	19,016	-61.5		296	37.3	29	19,037	-52.1		255	21.4	30	19,300	-62.2		302	24.9	31	19,272	-62.9		316	23.3
50	25	20,252	-62.2		303	33.6	31	20,144	-61.9		294	35.9	29	20,217	-52.5		266	25.4	30	20,429	-61.2		305	23.5	30	20,402	-61.8		312	22.7
40	24	21,636	-62.1		297	35.0	27	21,544	-62.2		293	37.1	28	21,659	-52.3		286	29.7	27	21,829	-60.8		314	20.2	29	21,791	-61.4		314	23.9
30	21	23,410	-62.0		293	38.3	26	23,335	-61.2		291	40.6	26	23,506	-53.1		296	34.4	22	23,658	-60.6		324	25.4	28	23,587	-60.7		308	24.3
25	20	24,531	-61.1		288	44.5	23	24,481	-61.3		283	43.5	25	24,694	-52.8		285	39.0	17	24,812	-60.8		337	28.9	24	[illegible]	-59.4		301	31.9
20	17	25,945	-60.3		279	53.0	19	25,868	-60.3		278	51.7	23	26,128	-53.8		289	43.9	14	26,214	-60.8		330	29.1	16	26,134	-56.8		291	32.1
15	8	27,743	-56.7				16	27,747	-56.9		275	68.0	17	28,007	-53.4		302	53.4	7	27,934	-61.7				8	27,943	-60.4			
10							7	30,318	-54.5																A	[illegible]	-6[illegible]			

See reference note at end of table

RAWINSONDE DATA

Average monthly values

SAN ANTONIO, TEXAS — 994 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	243	4.2	76	3	5.4
1000	31	195				
950	31	616	6.1	57	26	3.5
900	31	1,059	5.8	55	163	.6
850	31	1,527	5.8	51	250	5.8
800	31	2,023	4.4	48	261	9.9
750	31	2,548	2.5	44	265	13.4
700	31	3,102	0.0		272	16.1
650	31	3,692	- 2.7		268	20.8
600	31	4,324	- 6.4		267	23.9
550	31	4,995	-10.4		268	27.0
500	31	5,727	-15.5		267	31.1
450	31	6,510	-21.0		265	35.2
400	31	7,376	-27.1		262	41.6
350	31	8,324	-34.1		261	51.7
300	31	9,386	-41.8		258	62.2
250	31	10,599	-50.3		257	68.8
200	30	12,030	-58.1		260	79.4
175	30	12,864	-61.1		262	76.1
150	30	13,815	-63.7		263	69.9
125	30	14,928	-66.0		264	63.1
100	30	16,271	-69.3		263	53.6
80	30	17,600	-69.6		266	39.2
70	29	18,410	-68.3		273	31.5
60	28	19,330	-65.9		270	26.2
50	27	20,444	-63.7		272	21.2
40	26	21,826	-60.0		271	20.8
30	26	23,648	-54.0		264	24.9
25	24	24,823	-50.8		264	30.1
20	23	26,288	-47.4		259	40.6
15	15	28,164	-45.3		253	51.7
10						
7						
5						

SAN DIEGO, CALIF. — 1004 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	124	8.1	69	49	2.3
1000	31	158	11.3	56	48	2.9
950	31	592	14.8	33	45	3.1
900	31	1,047	12.9	27	9	3.7
850	31	1,525	10.6	26	350	3.7
800	31	2,027	8.1	24	332	4.7
750	31	2,551	5.4	22	328	7.4
700	31	3,118	2.7		323	9.1
650	31	3,706	- 1.2		316	10.9
600	31	4,348	- 5.3		316	13.4
550	31	5,014	-10.0		311	16.3
500	31	5,754	-15.3		311	19.4
450	31	6,534	-20.6		306	22.1
400	31	7,404	-27.2		305	25.1
350	31	8,351	-34.6		315	24.7
300	31	9,410	-42.6		310	28.7
250	31	10,619	-51.0		309	31.5
200	31	12,047	-57.6		301	38.9
175	31	12,886	-59.3		296	41.2
150	31	13,847	-61.3		290	42.2
125	31	14,971	-64.1		289	40.0
100	31	16,329	-67.1		291	32.2
80	30	17,669	-67.7		296	24.5
70	29	18,484	-66.4		298	22.3
60	28	19,414	-64.5		306	17.5
50	28	20,531	-63.1		314	12.6
40	28	21,910	-60.9		315	12.4
30	27	23,709	-58.1		305	15.2
25	27	24,861	-56.1		295	18.6
20	25	26,273	-54.4		281	25.6
15	21	28,121	-52.1		274	37.7
10	5	30,730	-48.0			

*1/ SAN JUAN, P. R. — 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	6	22.8	87	118	1.7
1000	31	141	24.1	77	107	6.8
950	31	587	21.2	76	101	13.8
900	31	1,056	18.7	73	102	14.4
850	31	1,544	15.3	70	96	14.4
800	31	2,057	13.2	59	93	12.4
750	31	2,595	11.0	40	94	10.1
700	31	3,171	8.4	33	101	8.7
650	31	3,777	5.5	26	104	8.7
600	31	4,431	2.1	23	99	7.4
550	31	5,121	- 1.8	19	108	3.7
500	31	5,881	- 5.9	16	129	2.7
450	31	6,690	-11.3	17	277	.2
400	31	7,590	-18.0	17	286	3.7
350	31	8,573	-25.6		307	7.6
300	31	9,670	-34.7		298	15.3
250	31	10,917	-44.2		294	21.8
200	31	12,376	-55.4		284	30.9
175	31	13,217	-60.9		280	35.7
150	31	14,163	-66.2		286	37.5
125	31	15,253	-71.6		286	27.2
100	30	16,551	-76.4		284	17.9
80	30	17,831	-76.3		289	8.4
70	30	18,610	-73.5		289	6.2
60	29	19,517	-68.8		281	9.7
50	29	20,625	-62.5		272	15.5
40	29	22,021	-56.4		274	19.4
30	29	23,868	-51.5		285	14.2
25	27	25,059	-48.9		294	9.9
20	26	26,534	-46.1		18	4.1
15	25	28,466	-42.2		88	18.6
10	23	31,219	-39.3		91	24.3
7	19	33,682	-34.6		88	32.2
5	11	36,013	-33.0			

SANTA MONICA, CALIF. — 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	38	11.9	48	35	6.2
1000	31	159	15.0	35	35	6.6
950	31	590	14.8	26	41	4.3
900	31	1,049	12.9	25	36	1.9
850	31	1,527	10.1	24	360	1.9
800	31	2,029	7.4		1	4.5
750	31	2,555	4.8		341	8.0
700	31	3,117	2.0		328	10.1
650	31	3,705	- 1.8		323	12.0
600	31	4,344	- 5.9		325	14.0
550	31	5,011	-10.8		317	17.9
500	31	5,746	-16.0		313	21.6
450	31	6,522	-21.6		314	21.4
400	31	7,389	-28.3		315	22.7
350	31	8,333	-35.6		316	24.9
300	31	9,389	-43.6		319	29.5
250	31	10,594	-52.0		318	32.1
200	31	12,016	-58.8		310	38.9
175	31	12,852	-60.2		301	38.5
150	31	13,811	-61.7		294	39.2
125	31	14,933	-64.8		290	37.7
100	31	16,286	-67.5		293	33.2
80	31	17,629	-67.4		293	23.5
70	31	18,443	-66.4		296	20.2
60	31	19,372	-65.2		308	18.6
50	31	20,488	-63.3		319	14.2
40	31	21,865	-61.2		313	14.2
30	30	23,662	-58.7		303	15.7
25	30	24,812	-56.9		295	19.0
20	30	26,232	-54.5		285	25.4
15	30	28,083	-52.5		275	36.7
10	8	30,734	-48.0			

SAULT STE. MARIE, MICH. — 989 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	221	-10.0	85	62	1.9
1000	31	131				
950	31	525	-10.1	80	293	3.7
900	31	943	-11.5	79	297	7.2
850	31	1,380	-13.2	75	298	10.5
800	31	1,839	-15.3	72	296	13.0
750	31	2,327	-17.1	67	297	14.6
700	31	2,841	-19.2	60	300	16.7
650	31	3,286	-21.6	55	297	19.2
600	31	3,976	-24.8	52	294	22.7
550	31	4,600	-28.4	51	294	24.7
500	31	5,281	-32.7	49	294	27.4
450	31	6,013	-37.2		294	30.1
400	31	6,822	-42.4		297	33.8
350	31	7,713	-47.7		292	34.6
300	31	8,720	-52.3		289	38.3
250	31	9,891	-54.4		287	41.6
200	31	11,321	-53.9		284	44.1
175	31	12,178	-54.1		282	44.7
150	31	13,165	-54.7		284	44.1
125	31	14,328	-56.0		282	44.3
100	29	15,730	-57.7		280	45.8
80	29	17,135	-58.8		280	46.4
70	27	17,982	-59.6		277	44.5
60	27	18,942	-59.9		277	41.6
50	27	20,080	-60.3		274	44.3
40	27	21,469	-60.7		270	48.4
30	26	23,267	-59.7		270	56.5
25	26	24,409	-59.0		266	59.4
20	26	25,814	-57.0		264	73.6
15	24	27,638	-53.5		260	85.1
10	24	30,285	-47.6		254	113.6
7	18	32,660	-41.7		252	138.9
5	13	34,937	-38.2			

SHEMYA, ALASKA — 992 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	38	.6	75	317	5.6
1000	30	- 29				
950	30	385	- 2.3	69	326	6.8
900	30	809	- 5.9	75	307	7.4
850	30	1,253	- 9.3	77	300	7.0
800	30	1,720	-12.4	74	286	6.4
750	30	2,210	-15.2	61	278	7.0
700	30	2,730	-18.1	53	270	6.8
650	30	3,278	-21.5	47	270	7.8
600	30	3,866	-25.0	41	273	8.9
550	30	4,490	-29.2		276	9.7
500	30	5,168	-34.0		271	10.1
450	30	5,894	-39.1		267	14.0
400	30	6,697	-44.7		278	15.0
350	30	7,579	-50.2		271	16.9
300	30	8,575	-54.3		270	17.7
250	30	9,742	-54.1		266	19.2
200	30	11,184	-50.7		262	20.8
175	30	12,055	-50.1		266	20.6
150	30	13,063	-49.7		258	22.0
125	30	14,257	-48.9		260	23.3
100	30	15,722	-48.9		258	23.5
80	30	17,186	-48.9		259	26.8
70	30	18,065	-49.1		260	25.4
60	30	19,075	-48.5		256	24.1
50	29	20,274	-48.2		256	23.7
40	28	21,752	-47.6		260	25.8
30	27	23,651	-47.2		269	24.9
25	26	24,853	-47.2		273	28.2
20	26	26,329	-47.4		281	30.3
15	21	28,250	-47.5		296	34.8
10	8	30,911	-46.2			
7						
5						

* SHREVEPORT, LA. — 1015 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	79	1.2	80	354	1.4
1000	31	200	3.0	63	8	2.1
950	31	620	3.4	54	343	5.2
900	31	1,054	3.5	53	316	8.9
850	31	1,518	2.3	57	297	13.6
800	31	2,007	1.0	57	292	17.5
750	31	2,527	- .4	53	287	20.6
700	31	3,075	- 2.8	50	285	23.9
650	31	3,657	- 5.8	47	282	27.2
600	31	4,283	- 9.1	43	279	30.9
550	31	4,949	-12.9	42	279	35.5
500	31	5,673	-17.4	41	274	38.9
450	31	6,449	-22.8	41	271	41.4
400	31	7,309	-29.2	39	267	47.2
350	31	8,250	-35.8	40	267	59.4
300	31	9,304	-43.4		263	69.3
250	31	10,508	-51.7		261	78.3
200	31	11,930	-58.6		264	84.3
175	31	12,765	-60.1		265	79.4
150	30	13,721	-61.4		266	74.8
125	29	14,846	-64.3		265	64.1
100	29	16,204	-66.5		268	58.7
80	25	17,545	-67.2		271	43.3
70	23	18,367	-65.3		271	34.8
60	22	19,299	-64.7		273	27.4
50	21	20,417	-63.0		268	27.2
40	19	21,807	-59.1		274	25.1
30	17	23,635	-54.7		266	29.3
25	17	24,801	-52.2		262	32.8
20	16	26,272	-48.3		258	38.7
15	16	28,177	-46.2		250	42.0
10	12	30,939	-41.4		243	40.2
7	9	33,457	-36.9			
5	7	35,833	-30.3			

SPOKANE, WASH. — 939 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	722	- 3.4	91	124	1.4
1000	31	216				
950	31	626				
900	31	1,055	- 1.9	80	166	6.6
850	31	1,510	- 1.8	75	221	11.1
800	31	1,992	- 2.2	67	252	14.4
750	31	2,501	- 3.7	61	263	17.3
700	31	3,046	- 6.4	57	271	20.0
650	31	3,615	- 9.5	55	276	23.5
600	31	4,237	-13.2	51	278	25.8
550	31	4,888	-17.3	48	282	29.3
500	31	5,602	-21.9	49	288	32.4
450	31	6,359	-27.0	48	292	36.7
400	31	7,210	-33.1	45	296	40.2
350	31	8,134	-40.1		296	41.8
300	31	9,168	-48.0		298	48.0
250	31	10,349	-55.[illegible]		303	51.1
200	31	11,751	-60.6		306	48.4
175	31	12,583	-60.3		298	48.2
150	31	13,545	-59.4		294	42.9
125	30	14,685	-59.7		299	41.8
100	30	16,073	-61.2		298	36.7
80	30	17,456	-61.6		303	32.8
70	30	18,287	-61.6		309	31.9
60	30	19,240	-61.2		307	29.9
50	29	20,375	-61.9		307	30.9
40	27	21,774	-61.6		313	29.3
30	24	23,579	-62.2		313	34.0
25	24	24,705	-62.5		314	32.4
20	19	26,107	-62.6		322	29.7
15	6	27,831	-63.4			

SWAN ISLAND, W. I. — 1014 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	10	25.0	75	19	9.5
1000	31	132	24.1	75	24	11.5
950	31	578	20.5	79	34	13.8
900	31	1,045	17.2	79	37	10.9
850	31	1,532	14.6	73	20	7.0
800	31	2,043	12.9	65	37	2.1
750	31	2,581	10.9	56	117	3.5
700	31	3,158	8.5	49	136	4.7
650	31	3,763	5.5	41	143	4.1
600	31	4,419	1.9	36	175	3.5
550	31	5,107	- 1.9		232	4.7
500	31	5,868	- 6.5		231	7.2
450	31	6,679	-11.5		255	12.0
400	31	7,577	-17.8		254	15.2
350	31	8,561	-25.0		249	19.8
300	31	9,661	-34.1		251	23.7
250	31	10,909	-44.5		248	28.6
200	31	12,363	-56.2		242	36.3
175	31	13,199	-62.3		247	39.2
150	31	14,138	-67.3		246	37.9
125	30	15,224	-72.2		252	35.0
100	29	16,519	-77.3		259	29.1
80	28	17,795	-77.7		260	15.7
70	28	18,581	-74.2		261	15.2
60	28	19,475	-69.7		263	15.9
50	28	20,579	-63.3		263	21.2
40	28	21,972	-57.5		268	27.2
30	28	23,813	-52.1		271	23.7
25	27	24,999	-49.0		274	18.5
20	24	26,477	-45.9		288	8.7
15	14	28,416	-42.4		230	2.1

TAMPA, FLA. — 1020 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	8	9.1	82	42	5.2
1000	31	171	11.0	72	41	5.4
950	31	601	10.8	66	332	2.9
900	31	1,051	9.8	59	271	7.0
850	31	1,525	8.4	52	266	9.3
800	31	2,025	7.6	43	266	14.0
750	31	2,553	5.4	44	263	18.1
700	31	3,117	2.9	39	263	23.5
650	30	3,710	.3	35	264	29.1
600	30	4,353	- 3.6		259	31.1
550	30	5,028	- 7.7		261	36.5
500	30	5,772	-12.5		260	40.2
450	30	6,564	-18.0		261	45.3
400	30	7,440	-24.0	40	260	52.4
350	30	8,401	-30.6	38	260	59.4
300	30	9,477	-38.7		260	65.5
250	30	10,704	-47.7		260	73.4
200	30	12,143	-57.5		261	81.2
175	30	12,978	-61.3		262	78.1
150	29	13,923	-63.9		260	77.1
125	29	15,030	-67.2		263	68.8
100	29	16,363	-70.4		258	58.9
80	29	17,684	-71.1		262	44.9
70	29	18,485	-69.0		263	35.5
60	29	19,406	-65.7		263	28.7
50	28	20,526	-61.9		260	26.8
40	26	21,919	-57.7		265	24.1
30	24	23,764	-50.3		265	24.[illegible]
25	22	24,977	-45.3		269	18.6
20	20	26,489	-41.7		260	12.4
15	5	28,508	-38.0			

* TATOOSH IS., WASH — 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	31	7.7	83	97	9.9
1000	31	161	7.6	73	124	10.1
950	31	578	5.5	70	183	11.8
900	31	1,023	3.1	72	197	14.8
850	31	1,485	1.9	67	208	14.0
800	31	1,972	- .4	59	222	15.2
750	31	2,485	- 2.8	55	237	16.3
700	31	3,031	- 5.6	51	240	18.3
650	31	3,605	- 8.6	50	251	21.4
600	31	4,226	-12.5	47	253	24.7
550	31	4,880	-16.9	47	257	26.0
500	31	5,594	-21.7	46	259	29.1
450	31	6,355	-27.0	45	261	31.3
400	31	7,203	-32.7	43	264	34.6
350	31	8,130	-39.5	42	275	39.6
300	31	9,168	-47.1		275	46.8
250	31	10,354	-54.6		278	56.5
200	31	11,760	-60.5		279	47.4
175	30	12,583	-60.3		276	42.7
150	29	13,540	-59.6		282	40.4
125	29	14,680	-60.0		282	38.9
100	28	16,068	-60.4		288	34.6
80	25	17,451	-61.4		296	26.4
70	25	18,280	-61.3		298	23.9
60	23	19,236	-61.2		297	26.2
50	23	20,366	-61.7		301	26.0
40	16	21,747	-62.2		303	27.0
30	14	23,553	-62.2		313	32.2
25	13	24,663	-62.9		313	33.4
20	11	26,059	-63.2		317	35.4
15	9	27,880	-63.7			
10	7	30,423	-62.6			
7						
5						
4						

TOPEKA, KANS. — 991 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	269	- 8.2	74	312	4.1
1000	31	199				
950	31	604	- 5.5	58	313	8.0
900	31	1,025	- 4.1	54	312	12.0
850	31	1,477	- 3.8	55	306	15.9
800	31	1,955	- 4.7	53	308	19.4
750	31	2,459	- 6.3	50	303	23.5
700	31	2,999	- 8.5	46	304	28.6
650	31	3,566	-11.2	45	303	32.6
600	31	4,181	-14.7	39	299	34.2
550	31	4,831	-18.4		298	38.7
500	31	5,541	-23.3		297	40.6
450	31	6,297	-28.5		289	44.7
400	31	7,140	-34.2		289	50.1
350	31	8,061	-41.1		287	52.3
300	31	9,094	-48.4		286	52.3
250	30	10,269	-55.0		288	58.9
200	30	11,684	-57.5		287	60.6
175	30	12,526	-57.9		294	54.6
150	30	13,497	-58.2		291	48.8
125	30	14,641	-59.4		288	45.1
100	30	16,031	-61.1		287	41.2
80	30	17,416	-61.6		288	38.5
70	30	18,241	-61.9		289	31.3
60	30	19,196	-62.3		288	30.1
50	30	20,325	-61.2		288	29.3
40	29	21,711	-60.7		286	27.6
30	27	23,512	-58.6		280	36.5
25	25	24,671	-56.4		274	36.1
20	21	26,126	-53.4		267	43.9
15	17	28,012	-50.0		261	55.6
10	11	30,728	-43.3			

TRUK, CAROLINE IS. + — 1010 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	2	28.7	78	38	4.1
1000	31	89	27.9	78	53	6.2
950	31	538	24.1	81	79	11.1
900	31	1,015	21.1	80	84	11.8
850	31	1,510	18.5	75	85	11.8
800	31	2,029	16.1	63	85	10.9
750	31	2,576	13.5	56	81	11.1
700	31	3,156	10.4	54	81	9.9
650	31	3,770	7.2	46	89	12.0
600	31	4,425	3.4	45	91	16.1
550	31	5,120	- .7	45	93	18.6
500	31	5,883	- 5.0	40	98	19.4
450	31	6,699	- 9.5	40	99	18.3
400	31	7,608	-14.7	36	101	18.1
350	31	8,606	-21.5		96	17.7
300	31	9,724	-29.[illegible]		99	15.7
250	31	10,997	-39.9		107	17.5
200	31	12,481	-52.4		109	22.1
175	31	13,330	-59.6		112	26.0
150	31	14,277	-67.4		108	29.9
125	31	15,354	-75.3		96	33.0
100	31	16,627	-79.8		96	24.9
80	31	17,904	-74.4		99	7.4
70	31	18,689	-69.9		258	3.5
60	31	19,621	-64.1		272	16.5
50	31	20,747	-60.3		276	23.1
40	30	22,148	-57.0		273	31.1
30	28	23,982	-53.2		271	36.9
25	28	25,162	-50.8		267	35.9
20	28	26,622	-48.7		267	35.5
15	24	28,514	-46.5		269	35.5
10	23	31,242	-40.3		269	28.9
7	12	33,719	-37.6			

TUCSON, ARIZ. — 928 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	31	789	5.8	53	136	6.4
1000	31	171				
950	31	595				
900	31	1,043	10.8	38	126	[illegible].0
850	31	1,519	9.7	33	121	3.7
800	31	2,019	7.0	33	197	.8
750	31	2,545	4.3	29	291	2.9
700	31	3,106	1.2		306	5.6
650	31	3,692	- 2.1		310	9.7
600	31	4,331	- 5.5		305	14.[illegible]
550	31	4,998	- 9.8		305	19.6
500	31	5,737	-15.3		298	21.0
450	31	6,515	-21.1		294	22.9
400	31	7,384	-27.6		291	25.1
350	30	8,326	-35.0		293	27.2
300	30	9,382	-43.3		295	29.1
250	30	10,586	-51.5		292	35.2
200	30	12,013	-57.4		274	45.8
175	30	12,853	-59.3		276	49.5
150	30	13,814	-61.6		272	45.8
125	30	14,936	-64.3		282	42.2
100	30	16,291	-67.1		286	37.1
80	30	17,636	-67.4		293	29.1
70	30	18,453	-66.3		295	22.9
60	30	19,380	-64.6		293	17.5
50	30	20,497	-63.1		304	15.3
40	30	21,978	-60.7		311	16.9
30	29	23,684	-57.0		287	16.7
25	28	24,846	-54.7		275	22.3
20	27	26,276	-52.4		270	30.7
15	27	28,151	-48.7		257	45.1
10	24	30,858	-43.4		250	66.0
7	13	33,369	-35.3			
5	7	35,811	-32.2			

*WAKE IS., PACIFIC AREA — 1016 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	30	5	25.3	69	74	10.7
1000	30	144	24.3	70	76	15.2
950	30	587	20.3	79	82	17.5
900	30	1,057	16.7	80	86	16.7
850	30	1,543	15.3	55	90	15.5
800	30	2,056	14.3	32	84	13.8
750	30	2,597	12.8	25	76	11.8
700	30	3,176	10.8	18	75	8.2
650	30	3,785	8.0	17	70	5.1
600	30	4,446	4.3	17	77	4.9
550	30	5,139	- .4	18	91	3.3
500	30	5,902	- 5.5	19	147	1.0
450	30	6,715	-10.6	19	357	2.5
400	30	7,617	-16.6	20	338	4.7
350	30	8,607	-23.2	18	299	7.0
300	30	9,717	-31.6	21	291	8.0
250	30	10,979	-41.7		300	9.1
200	30	12,451	-53.7		300	11.7
175	30	13,295	-60.4		294	12.0
150	30	14,238	-67.7		281	9.9
125	29	15,314	-75.2		273	8.5
100	29	16,584	-81.4		276	3.5
80	29	17,837	-80.2		105	3.7
70	29	18,596	-76.6		104	2.5
60	29	19,497	-70.8		223	.6
50	29	20,592	-65.0		256	3.1
40	28	21,966	-61.3		275	5.4
30	28	23,776	-55.5		294	6.2
25	28	24,947	-52.7		288	5.6
20	27	26,399	-49.1		279	5.1
15	26	28,308	-45.9		262	4.7
10	25	31,013	-42.6		88	5.8
7	23	33,436	-39.4		99	10.3
5	20	35,752	-35.4		87	10.3
4	15	37,323	-32.8		78	19.6

See reference note at end of table

RAWINSONDE DATA

Average monthly values

WALLOPS I., VA. NASA
1018 MB

Standard pressure surface (mb)	Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
SURFACE	15	9	- .6		294	5.8
1000	15	145	0.0		305	10.3
950	15	552	- 2.3		310	12.2
900	15	982	- 4.1		303	14.6
850	15	1,432	- 6.0		291	19.0
800	15	1,906	- 7.9		284	25.8
750	15	2,408	- 8.7		276	32.1
700	15	2,941	- 9.8		273	43.3
650	15	3,512	-11.2		271	50.9
600	15	4,122	-14.2		272	56.9
550	15	4,775	-18.0		271	62.4
500	15	5,484	-23.1		269	68.0
450	15	6,244	-28.4		268	76.1
400	15	7,083	-34.2		269	86.3
350	15	8,006	-40.5		265	95.0
300	15	9,043	-46.5		265	93.8
250	15	10,230	-51.7			
200	15	11,675	-55.1			
175	15	12,526	-56.1			
150	15	13,504	-56.8			
125	15	14,652	-58.6			
100	15	16,048	-60.0			
80	14	17,431	-60.9			
70	14	18,260	-60.7			
60	13	19,215	-61.4			
50	13	20,344	-61.2			
40	12	21,736	-60.5			
30	10	23,544	-56.6			
25	10	24,705	-54.7			
20	10	26,138	-53.1			
15	7	28,034	-47.6			
10	5	30,910	-42.3			
7						

WASHINGTON, D. C.
1010 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
31	84	- 5.5	78	319	3.3
31	468	- 4.2	69	321	5.4
31	856	- 4.2	61	297	12.8
31	988	- 6.2	61	296	14.6
31	1,434	- 7.5	60	287	17.9
31	1,905	- 8.5	52	278	22.9
31	2,404	- 9.7	42	274	27.6
31	2,936	-11.5	40	273	32.8
31	3,501	-14.0	41	272	37.5
31	4,106	-16.8	39	274	43.1
31	4,754	-20.2	40	268	51.3
31	5,455	-24.6	39	268	56.3
31	6,210	-29.9	38	268	62.7
31	7,044	-35.4		270	71.9
31	7,962	-41.4		269	79.8
31	8,993	-47.5		264	90.1
31	10,184	-52.5		265	94.9
31	11,615	-55.4		262	84.1
31	12,464	-56.5		267	79.3
31	13,440	-57.1		268	73.2
30	14,588	-59.2		265	62.2
30	15,980	-60.7		264	51.5
30	17,363	-62.1		265	49.0
30	18,200	-62.1		265	44.9
30	19,143	-60.8		268	39.6
30	20,278	-60.4		264	35.5
29	21,670	-59.1		265	36.1
29	23,493	-54.8		260	36.3
28	24,664	-52.0		260	43.9
28	26,120	-48.7		259	55.2
24	28,021	-44.5		258	71.5
17	30,694	-44.1		260	72.1
7	32,858	-47.4			

WINNEMUCCA, NEV.
876 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
31	1,310	- 5.7	86	116	2.1
31	257				
31	666				
31	1,097				
31	1,550	.9	61	166	3.5
31	2,039	1.1	48	230	5.4
31	2,565	.6	45	276	8.2
31	3,134	- 3.1	43	300	11.1
31	3,686	- 6.1	39	304	14.6
31	4,312	- 9.9	38	297	17.1
31	4,972	-14.1	36	305	21.6
31	5,695	-18.6	36	295	24.9
31	6,484	-24.1	36	310	27.0
31	7,320	-30.7		307	29.3
31	8,254	-37.9		306	31.1
31	9,298	-45.9		301	31.9
31	10,488	-54.3		307	37.7
31	11,893	-60.6		305	38.9
31	12,720	-61.6		307	39.0
31	13,679	-60.7		306	39.0
31	14,811	-61.7		304	35.4
30	16,187	-63.9		306	32.6
29	17,555	-63.5		310	25.4
29	18,378	-62.8		312	22.5
29	19,325	-62.8		312	21.0
28	20,450	-61.8		319	18.8
27	21,833	-61.5		331	17.3
24	23,626	-60.5		333	19.0
24	24,765	-59.5		320	20.2
17	26,179	-57.0		309	28.2
12	28,038	-56.0			

[illegible]

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
31	1,492	- 6.2	80	152	1.2
31	254				
31	668				
31	1,099				
31	1,549			142	1.2
31	2,033	1.1	63	161	2.5
31	2,565	.6	53	221	3.5
31	3,134	- 1.3	57	324	8.5
31	3,691	- 4.5		312	10.7
31	4,318	- 8.1		295	14.4
31	4,984	-12.5		315	17.3
31	5,710	-17.3		314	19.0
31	6,488	-22.6		321	23.3
31	7,343	-29.5		326	25.6
31	8,281	-37.1		323	28.9
31	9,329	-45.0		325	31.0
31	10,523	-53.6		317	41.4
31	11,936	-59.0		306	43.7
31	12,772	-59.7		299	44.1
31	13,732	-61.4		300	42.7
31	14,857	-63.3		295	42.0
31	16,220	-65.2		294	38.7
31	17,574	-66.6		301	29.3
31	18,390	-65.2		301	25.4
31	19,326	-64.0		306	22.9
31	20,445	-63.1		304	18.8
31	21,824	-61.1		303	17.9
31	23,617	-58.8		288	22.0
30	24,768	-57.0		287	27.6
27	26,191	-54.3		270	38.3
11	27,965	-52.7			
5	30,611	-49.0			

[illegible]

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
31	12	- .1	92	113	5.2
31	74			105	6.9
31	485	1.1	75	126	15.7
31	922	- 1.3	60	136	18.3
31	1,376	- 3.6	56	147	20.0
31	1,853	- 6.3	67	155	20.0
31	2,361	- 8.9	66	157	15.7
31	2,888	-11.7	58	166	14.4
31	3,456	-15.2	58	177	14.6
31	4,053	-19.4	54	185	14.2
31	4,688	-23.0	51	194	14.4
30	5,380	-27.8	47	199	15.2
30	6,120	-33.0	47	207	16.9
30	6,950	-38.9		221	18.3
30	7,861	-45.8		224	20.4
30	8,873	-51.9		241	23.7
30	10,042	-55.4		242	26.2
30	11,457	-56.6		251	24.8
30	12,303	-56.5		251	26.0
30	13,283	-56.1		251	28.6
30	14,443	-55.7		253	29.7
30	15,865	-56.2		259	30.7
30	17,278	-57.2		270	28.2
30	18,119	-58.0		272	29.7
30	19,089	-58.8		273	34.8
29	20,220	-59.6		282	38.9
29	21,611	-60.7		289	41.4
28	23,408	-62.2		293	49.0
23	24,560	-62.7		297	54.0
13	25,999	-62.1		302	60.0
9	27,960	-60.8			

YAP, CAROLINE IS.
1009 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
31	17	27.8	83	57	10.9
31	93	27.0	83	50	8.5
31	536	23.5	80	63	11.8
31	1,018	20.6	77	70	11.5
31	1,511	17.8	73	80	11.1
31	2,029	15.2	68	86	10.1
31	2,568	12.9	56	88	11.1
31	3,152	10.1	47	85	12.8
31	3,759	6.8	39	78	13.2
31	4,419	2.8	42	85	15.0
31	5,103	- 1.3	40	92	15.7
31	5,873	- 5.6	40	93	17.1
31	6,686	-10.2	35	92	16.3
31	7,593	-15.6	31	86	16.5
31	8,587	-22.7		89	16.7
31	9,698	-31.1		97	13.8
31	10,965	-41.0		102	14.2
30	12,441	-53.6		105	17.9
30	13,287	-60.7		106	18.6
30	14,228	-68.4		104	22.3
30	15,299	-76.4		100	25.4
30	16,565	-81.3		99	21.6
29	17,830	-75.9		93	12.8
29	18,609	-71.6		168	.4
29	19,531	-65.5		291	8.7
29	20,653	-60.6		286	15.2
28	22,054	-56.9		279	21.8
28	23,891	-53.2		268	26.4
24	25,065	-50.9		267	27.2
24	26,523	-48.8		263	22.7
20	28,422	-46.5		263	24.7
12	31,126	-42.5			

YUCCA FLAT, NEV.
887 MB

Number of observations	Dynamic height	Temperature	Relative humidity	Wind Direction	Wind Speed
29	1,196	- 3.3	56	337	2.7
29	230				
29	644				
29	1,080				
29	1,537	5.0	34	6	7.6
29	2,031	4.1	27	10	7.2
29	2,553	2.0		360	7.2
29	3,107	- .9		332	6.8
29	3,692	- 4.2		319	9.5
29	4,322	- 8.0	33	321	12.8
29	4,987	-12.2		321	16.3
29	5,714	-17.3		316	19.6
29	6,484	-23.0		317	21.2
29	7,347	-29.4		318	23.9
29	8,286	-36.6		315	26.2
28	9,337	-44.6		318	30.5
28	10,534	-53.0		323	37.9
28	11,947	-59.4		312	41.8
28	12,781	-60.6		303	43.7
28	13,739	-61.0		303	43.5
28	14,869	-62.5		301	38.9
28	16,237	-65.7		299	35.0
27	17,598	-65.1		308	29.9
27	18,420	-64.5		311	26.8
26	19,361	-63.2		312	23.1
25	20,484	-62.4		319	15.0
24	21,875	-60.7		323	15.9
24	23,674	-58.7		317	19.8
23	24,827	-57.8		308	22.5
21	26,226	-56.9		300	26.8
13	28,105	-52.0		274	41.0

Note: All observations scheduled at 1200, G.C.T. Pressures shown under station names are the average monthly station pressures for the month of record, corrected to the height of the floors of the instrument shelters used for rawinsonde purposes. "Number of observations" refers to those of dynamic height only. Although the number of temperature observations at any given pressure surface is usually the same as for height, it is possible for temperature to be missing for one or more pressure surfaces of some observations. Relative humidity averages are limited to those observations with temperatures warmer than -40°C. Observations of wind speed and direction are sometimes lost due to limiting angles, i.e., elevation angles less than 6° above the horizon, or any obstruction above the horizon.

The temperature and wind values are based on 15 or more observations at the surface or 5 observations at a standard pressure level for temperature and 10 for wind. Relative humidity data are not published for standard pressure surfaces for which less than 16 observations are available.

Relative humidity data are computed and expressed on the basis of vapor pressure over water. Unless otherwise indicated, they are obtained from lithium chloride hygristors.

These average values for standard pressure surfaces were obtained by rawinsondes, dynamic height (geopotential) in units of .98 dynamic meter, temperature in degrees Celsius, relative humidity in percent, and resultant winds in degrees and knots.

* Rawinsondes at this station were equipped with hypsometers to permit more accurate evaluations of pressure, and consequently height, at pressures lower than 50 mb. They were also equipped with carbon hygristors. These rawinsondes were carried aloft by special high altitude balloons, in an effort to consistently reach higher altitudes.

1/ beginning December 12, 1963

+ Observations for these stations are scheduled at 0000 G.C.T.

SOLAR RADIATION DATA

Solar radiation intensities, tabulated in langleys per minute on a surface normal to the direction of the sun. DECEMBER 1963

ALBUQUERQUE, N. MEX.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.19	3.35	2.51	1.67	*	1.67	2.51	3.35	4.19
Dec.									
1-----	----	----	----	----	----	----	1.10	0.96	H(0.83)
2-----	0.87	1.01	1.12	1.28	1.29	1.24	1.07	.96	.84
3-----	.91	1.07	1.18	1.33	1.36	1.28	1.17	1.03	.95
4-----	1.01	1.13	1.21	1.33	1.35	1.33	1.18	.93	.83
5-----	----	----	----	----	----	----	----	1.08	.99
6-----	.95	1.07	1.21	1.35	1.37	1.35	1.17	1.04	.89
7-----	----	----	----	----	1.33	1.31	1.18	1.04	.96
8-----	.96	1.07	1.19	1.32	1.34	1.31	1.14	(1.01)	(.89)
9-----	----	----	----	1.26	1.28	1.25	1.01	.84	----
10----	----	----	1.06	----	----	----	----	----	----
11----	----	----	1.04	----	----	1.31	1.14	(.98)	.91
12----	.85	.97	1.07	1.26	1.31	1.27	1.11	.97	.85
13----	.95	1.05	1.17	1.33	1.33	1.32	(1.17)	(1.05)	(.93)
14----	.95	1.07	1.19	1.33	1.36	1.33	(1.19)	(1.01)	(.94)
15----	.97	1.06	1.19	1.34	1.31	1.29	1.14	.99	.90
16----	----	----	----	1.31	1.27	1.28	1.14	.97	.87
17----	.93	1.05	1.16	1.31	1.33	1.28	1.13	.93	.77
18----	.94	.95	1.18	1.29	1.31	1.25	1.11	1.01	.88
19----	.95	1.05	----	----	----	----	----	----	----
20----	.92	1.02	1.15	1.27	1.27	----	----	----	----
22----	.81	.95	1.11	1.26	1.27	1.27	1.07	.91	.79
23----	.93	1.03	1.14	1.23	1.25	1.24	1.01	.89	.78
24----	.94	1.04	1.15	1.29	1.33	----	----	1.01	.87
25----	.97	1.09	1.21	1.38	1.39	1.38	1.23	1.11	1.00
26----	.98	1.09	1.21	1.36	(1.36)	1.34	1.15	(1.01)	.91
27----	----	----	1.16	---	(1.35)	1.33	1.17	1.04	.93
28----	.94	1.06	1.19	1.33	1.33	1.33	(1.13)	1.00	.88
29----	.83	.90	1.07	----	----	1.25	----	----	----
30----	.87	.99	1.12	1.14	1.23	1.22	1.10	.97	.88
31----	.89	.99	1.13	1.23	1.24	1.25	(1.07)	----	(.83)
Averages	0.92	1.03	1.11	1.30	1.22	1.30	1.13	0.98	0.88

BLUE HILL OBS., MASS.

	Air mass 4.89	3.92	2.94	1.96	*	1.96	2.94	3.92	4.89
Dec.									
1-----	0.96	1.06	1.17	----	1.30	----	1.20	1.07	0.96
2-----	.79	.89	1.00	----	----	----	----	----	----
4-----	----	----	----	----	1.18	----	1.04	.84	.60
5-----	----	.93	1.08	----	1.18	----	.89	.68	.55
15----	.84	.94	1.06	----	1.16	----	1.04	.94	.87
16----	.99	1.08	1.21	----	1.28	----	1.18	1.06	.96
17----	1.00	1.11	1.22	----	1.30	----	1.21	1.07	.98
19----	----	----	----	----	1.17	----	1.07	.95	.88
20----	1.00	1.08	1.21	----	1.30	----	1.16	.98	.86
21----	.90	1.01	1.16	----	1.25	----	1.17	1.03	.93
22----	----	----	----	----	----	----	1.18	1.05	.95
28----	.89	.98	1.12	----	1.25	----	1.12	1.00	.86
30----	.96	1.05	1.18	----	1.28	----	1.16	1.05	.95
31----	.91	1.00	1.15	----	1.24	----	1.15	1.00	.90
Averages	0.92	1.01	1.14	----	1.24	----	1.12	0.98	0.87

OMAHA, NEBR.

	Air mass 4.78	3.82	2.87	1.91	*	1.91	2.87	3.82	4.78
Dec.									
3-----	HS1.05	HS1.28	HS1.28	----	HS1.36	----	HS1.23	----	HM1.01
4-----	HS1.09	HS1.09	HS1.22	----	----	----	----	----	----
5-----	HM .98	HS1.05	HS1.15	----	HS1.24	----	HS1.13	P	HS .87
6-----	HM .81	HM .97	HM1.07	----	HM1.19	----	----	----	----
9-----	----	----	----	----	HS1.28	----	----	----	----
13----	HM1.03	HM1.11	----	----	----	----	----	----	----
14----	HM1.05	HM1.15	HM1.25	----	HS1.39	----	HM1.28	HS1.14	HS1.05
15-31-	Equipment inoperable								
Averages	1.00	1.11	1.19	----	1.29	----	1.21	1.14	0.98

* Values corresponding to true solar noon
S Slight haze - indeterminable
M Moderate haze - indeterminable
P Pole shadow
( ) Clouds present

H Haze
HS Slight haze
HM Moderate haze
KS Slight smoke
KM Moderate smoke

MADISON, WIS.

Date	Sun's zenith distance A.M. 78.7°	75.7°	70.7°	60.0°	*	P.M. 60.0°	70.7°	75.7°	78.7°
	Air mass 4.69	3.75	2.81	1.88	*	1.88	2.81	3.75	4.69
Dec.									
16----	----	----	----	----	----	----	1.22	0.97	0.89
18----	S 0.88	S 0.99	S 1.13	----	S 1.24	----	S 1.16	S 1.04	S .94
29----	S .94	S 1.03	----	----	S 1.19	----	S 1.10	S .95	S .87
30----	----	----	----	----	S 1.20	----	S 1.12	S .99	S .88
31----	----	----	----	----	M 1.20	----	M 1.10	M .91	M .84
Averages	0.91	1.01	1.13	----	1.21	----	1.14	0.97	0.88

TUCSON, ARIZ.

	Air mass 4.56	3.65	2.74	1.83	*	1.83	2.74	3.65	4.56
Dec.									
1-----	----	----	----	----	----	----	----	0.82	0.69
3-----	----	----	----	----	----	----	----	.94	.82
4-----	0.89	----	----	----	----	----	----	.90	.79
5-----	.81	----	1.05	----	----	----	----	----	----
6-----	.83	0.92	----	----	----	----	----	----	----
7-----	.80	.91	----	----	----	----	----	----	----
11----	.87	.95	----	----	----	----	----	----	----
12----	.85	----	----	----	----	----	----	.88	----
13----	.88	.94	----	----	----	----	----	----	----
14----	.93	.99	----	----	----	----	1.13	1.01	.86
15----	.98	1.06	1.17	----	----	----	1.16	1.05	.95
16----	----	.97	1.09	----	----	----	----	1.00	.83
17----	.88	----	----	----	----	----	----	----	----
18----	.79	1.09	----	----	----	----	----	----	.77
19----	----	----	----	----	----	----	----	----	.78
21----	.78	----	1.04	----	----	----	----	----	.88
22----	.86	1.00	----	----	----	----	----	----	----
23----	.99	----	----	----	----	----	----	----	.97
24----	1.00	----	----	----	----	----	----	----	.91
25----	.97	1.06	1.19	----	----	----	----	----	----
27----	.84	.97	----	----	----	----	----	----	----
28----	.93	1.08	----	----	----	----	----	----	.85
29----	.78	.89	----	----	----	----	----	----	----
30----	.95	----	----	----	----	----	----	----	----
31----	.43	----	1.15	----	----	----	----	----	----
Averages	0.86	0.99	1.92	----	----	----	1.14	0.94	0.84

MAUNA LOA OBS., HAWAII

	Air mass 3.36	2.69	2.01	1.34	*	1.34	2.01	2.69	3.36
Dec.									
1-----	1.16	1.27	1.37	1.50	1.56	1.46	1.33	1.23	1.16
2-----	1.16	1.26	1.34	1.47	1.54	1.44	1.32	1.21	1.13
3-----	1.14	1.24	1.36	1.48	1.54	1.44	1.32	1.22	1.14
4-----	1.17	1.26	1.37	1.49	1.56	1.42	1.30	1.20	1.09
8-----	1.21	1.29	1.39	1.50	1.56	1.44	1.34	1.23	1.14
9-----	1.19	1.27	1.37	1.49	1.55	----	----	----	----
10----	1.15	1.23	1.33	1.44	----	----	----	----	----
13----	----	----	----	----	1.56	----	----	----	----
14----	1.19	1.26	1.36	1.48	1.57	1.47	HS1.34	HS1.19	HS1.10
15----	1.19	1.28	1.37	1.48	1.57	1.48	1.32	1.22	1.12
16----	1.17	1.26	1.36	1.48	1.56	1.45	1.33	1.23	1.14
17----	1.15	1.24	1.34	1.47	1.57	1.47	1.37	1.27	1.19
18----	1.20	1.29	1.39	1.50	1.58	KM1.45	KM1.34	KM1.25	KM1.15
19----	1.22	1.31	1.40	1.52	1.58	KS1.49	KS1.37	KS1.26	KS1.18
20----	1.26	1.34	1.43	1.55	1.62	----	----	KS1.25	KS1.17
21----	1.18	1.27	1.39	1.49	1.58	1.47	1.33	1.23	1.13
22----	1.21	1.30	1.38	1.49	1.58	1.49	1.37	1.27	1.18
23----	1.24	1.33	1.42	1.54	1.60	1.50	1.38	1.27	1.18
24----	1.14	1.25	1.36	1.49	HS1.56	----	----	----	----
25----	1.23	1.31	1.40	1.52	1.57	----	----	----	----
27----	----	----	----	----	----	HS1.45	1.30	1.19	1.10
28----	1.09	1.19	1.28	1.42	1.54	1.43	1.28	1.17	1.07
29----	1.14	1.23	1.31	1.45	1.54	1.43	1.30	1.19	1.10
30----	1.12	1.23	1.32	1.45	1.54	1.40	1.30	1.18	1.09
31----	1.18	1.27	1.36	1.50	1.60	1.51	1.38	1.29	1.20
Averages	1.18	1.27	1.36	1.49	1.57	1.46	1.33	1.23	1.14

GUAM, M. I.

	Air mass 4.92	3.93	2.95	1.97	*	1.97	2.95	3.93	4.92
	No observations due to cloudiness								

Langley = the unit of solar radiation; one gram calorie per square centimeter. An explanation of the formula used in computing the air mass values for each station listed above appears in the February 1957 issue, Vol. 8, No. 2, page 63, of this publication.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DECEMBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
ALBUQUERQUE N.M.	275	343	346	348	284	346	349	346	332	129	282	341	346	347	332	327	331	331	302	308	249	334	329	328	329	326	316	328	314	322	316	317
AMES IOWA	114*	101*	203	95	118	203	108	68	205	122	101	221	208	224	241	204	121	231	109	156	228	241	224	197	222	85	202	130*	220	205	200	171*
ANNETTE ALASKA	5	9	8	10	46	40	64	68	42	33	39	18	43	60	62	40	23	7	32	53	6	6	19	13	37	11	43	7	4	3	22	28
APALACHICOLA FLORIDA	395	365	---	---	377	323	200	218	374	284	279	184	157	95	326	145	344	363	380	235	320	168	70	244	362	358	280	210	316	205	49	263
ARGONNE NAT. LAB.	109	84	110	65	180	172	191	111	49	149	34	155	227	228	226	229	92	236	242	226	192	191	146	145	247	90	138	181	228	233	235	166
ASTORIA OREGON	170	179	124	23	4	104	31	78	69	183	164	164	16	32	15	15	120	8	13	50	94	7	55	50	83	29	19	118	65	18	92	71
ATLANTA GEORGIA	347	148	329	321	320	304	211	275	316	322	28	78	28	63	325	256	310	177	329	196	287	179	55	137	300	316	312	306	322	283	32	233
BARROW ALASKA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
BETHEL ALASKA	20	19	20	15	42	10	7	4	15	18	13	10	12	6	5	23	41	28	12	17	1	21	13	8	22	13	45	2	25	50	29	18
BISMARCK N.DAK.	149	124	169	146	103	67	59	142	116	124	173	71	128	163	173*	112	137	177	68	172	158	123	123	145	128	115	158*	89	194	141	156	132*
BLUE HILL MASS.	244	146	23	220	208	98	47	163	120	170	206	42	92	66	216	225	226	75	216	225	228	219	108	176	198	80	49	224	156	238	232	159
BOISE IDAHO	217	59	92	47	70	173	212	44	40	207	207	76	145	75	125	83	145	103	60	63	176	171	187	211	200	60	57	45	123	132	95	119
BOSTON MASSACHUSETTS	246	149	14	218	210	88	36	138	113	147	177	31	86	57	217	225	226	59	189	221	217	187	103	160	184	49	45	217	155	226	212	148
BROWNSVILLE TEXAS	358	304	320	403	226	214	346	334	87	285	306	33	46	31	26	42	---	76	37	74	67	95	398	391	391	386	365	376	350	56	414	228
BURLINGTON VERMONT	211	135	73	74	254	159	85	112	22	24	205	47	258	135	163	212	215	63	142	164	135	184	119	106	93	95	137	246	189	213	228	145
CANTON ISLAND P.I.	629	631	---	---	658	660	667*	669*	650	638	676*	---	635	660	559	574	500	356	322	633	582	544	533	486*	263	72	233	485	---	280*	636	527*
CAPE HATTERAS N.C.	310	167	216	286	249	271	283	252	286	284	84	54	50	37	270	289	294	59	301	292	282	279	35	176	281	288	216	220	159	201	95	212
CARIBOU MAINE	114	123	123	97	183	158	85	146	19	80	130	72	121	123	164	161	180	156*	75	112	118	156	178	82	78	167	162	142	125	146	165	127*
CHARLESTON S.C.	365	291	298	356	306	339	262	208	345	341	67	46	63	60	219	326	307	312	339	321	232	227	106	156	330	332	300	300	301	215	30	248
CLEVELAND OHIO	126	47	78	164	119	80	201	7	121	8	71	65	164	225	174	199	181	77	154	195	167	119	37	65	69	98	54	114	91	166	179	116
COLUMBIA MISSOURI	242	264	268	157	255	246	81	78	239	151	72	269	259	274	258	111	91	269	241	156	225	206	267	214	252	204	173	239	214	268	249	209
DAVIS CALIFORNIA	79	72	69	46	52	94	205	90	169	273	270	78	90	65	52	48	56	45	60	90	156	180	244	90	183	92	98	62	63	83	106	108
DODGE CITY KANSAS	273	282	279	275	274	271	202	258	247	43	259	287	280	266	180	109	56	270	192	61	92	192	294	263	272	264	206	272	77	270	101	215
E. LANSING MICHIGAN	82	205	197	85	151	118	204	56	88	28	120	80	191	174	197	175	143	156	201	199	139	100	128	56	156	22	64	159	198	188	224	138
EL CENTRO CALIF. NPF	281	290	277	284	289	282	281	274	220	263	211	259	278	280	274	274	276	259	260	251	256	276	281	---	---	---	---	275	279	188	289	267
EL PASO TEXAS	376	381	385	389	248	384	373	321	301	223	178*	205	239	251	367	359	358	363	355	358	359	366	352	361	371	363	362	374	363	368	359	335*
ELY NEVADA	304	294	279	289	262	265	287	184	129	222	292	---	---	212	269	265	270	258	263	147	213	270	272	273	248	129	168	178	233	217	226	239
EPPLEY-NEWPORT R.I.	234	140	43	211	187	104	98	132	130	165	199	48	144	44	211	221	220	65	204	216	218	189	85	191	168	119	54	210	114	228	212	155
FAIRBANKS ALASKA	3	6	10	2	6	3	6	1	1	1	2	2	3	4	7	12	12	---	5	3	3	10	11	8	4	3	8	9	2	3	2	5
FLAMING GORGE UTAH	265	---	273	254	266	214	244	198	180	126	---	284	247	79	105	167	---	281	164	95	63	258	214	271	180	220	176	102	246	248	185	200
FORT WORTH TEXAS	269	335	331	333	256	103	307	324	273	14	70	160	127	326	313	191	95	75	70	33	124	276	336	316	317	314	316	233	128	232	316	223
GAINESVILLE FLORIDA	405	397	253	296	410	277	62	146	326	310	250	169	19	93	322	200	143	316	353	284	322	88	61	23	391	341	266	129	228	83	25	225
GLASGOW MONTANA	110	172	133	149	100	139	104	172	102	130	93	79	170	170	100	87	149	70	50	115	97	154	103	107	127	153	159	137	157	108	8	119
GRAND JUNCTION COLO.	293	293	297	287	284	230	284	188	122	51	280	247	313	229	258	255	262	281	150	103	144	250	273	283	279	284	240	240	283	270	192	240
GREAT FALLS MONTANA	159	166	157	151	69	33	63	100	89	167	61	97	170	108	82	75	125	134	92	104	148	132	75	124	121	126	99	47	126	65	125	109
GREENSBORO N.C.	308	153	253	279	249	276	277	36	172	266	73	87	55	54	305	301	289	153	294	273	292	267	32	289	283	277	258	181	269	228	54	212
INDIANAPOLIS INDIANA	275	---	195	81	143	205	220	130	123	153	114	---	213*	261*	269*	---	---	273*	251*	249*	251*	176*	140*	247*	276*	248*	132*	248*	259*	272*	234*	209*
LAKE CHARLES LA.	258	140	378	352	338	154	165	292	326	38	88	20	20	219	187	272	311	175	184	16	23	20	334	348	339	300	304	325	325	136	357	217
LAKELAND FLORIDA	416	330	206	350	307	394	251	353	380	387	356	300	240	255	265	176	48	343	388	303	327	258	57	208	383	369	298	124	176	91	140	274
LANDER WYOMING	227	233	224	220	203	182	205	178	84	169	241	176	261	126	249	119	122	228	153	143	91	230	163	214	217	193	216	111	222	178	157	185
LARAMIE WYOMING	209	235	222	221	219	164	165	199	100	88	227	149	245	161	198	106	105	194	195	112	103	229	182	207	206	211	93	143	186	203	202	177
LAS VEGAS NEVADA	315	273	317	315	318	282	312	329	302	247	247	274	297	296	297	293	291	281	282	251	277	284	295	301	241	257	281	287	289	250	293	286
LITTLE ROCK ARKANSAS	229	---	263	266	246	152	109	262	260	64	19	98	98	267	254	254	150	241	158	62	154	42	280	262	259	234	249	155	190	233	277	193
LOS ANGELES CALIF.WB	285	295	313	298	303	235	297	287	274	286	276	297	295	295	284	261	282	229	233	222	302	292	301	306	266	263	230	295	264	199	315	277
LOS ANGELES CALIF. U	282	291	304	295	296	266	289	273	184	283	275	287	281	281	286	273	282	235	224	219	251	287	294	292	263	265	231	282	267	196	305	269
MANHATTAN KANSAS	202	279	260	267	273	277	118	184	250	22	136	291	292	288	185	50	17	289	203	114	109	253	203	250	279	257	149	270	158	85	271	202
MATANUSKA ALASKA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MAUNA LOA OB.HAWAII	566	556	551	551	506	315	331	549	456	394	25[illegible]	226	523	538	538	535	538	542	548	547	540	543	551	538	538	496	4[illegible]2	531	531	533	550	497
MEDFORD OREGON	50	60	68	48	76	209	126	108	134	218	186	174	136	141	50	74	38	44	49	74	107	125	104	129	181	38	59	57	64	95	101	101
MIAMI FLORIDA	405	358	302	294	404	391	277	306	384	393	382	378	382	314	155	173	71	209	369	311	302	364	230	222	398	389	380	304	363	61	165	304
MIDLAND TEXAS	296	339	334	334	210	247	291	273	281	58	102	238	28	94	35	44	158	32	87	37	28	209	287	279	285	282	300	308	251	247	315	203
NASHVILLE TENNESSEE	265	188	255	211	92	237	159	143	51	215	---	---	34	177	250	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
NEW YORK N.Y. U	216	90	47	219	66	67	133	158	151	96	150	19	110	41	219	222	200	31	173	209	220	199	27	185	139	171	16	172	187	225	188	140

Note. --Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

U Indicates Urban Sites.

SOLAR RADIATION DATA

Daily totals and monthly averages of solar radiation (direct and diffuse) received on a horizontal surface, tabulated in langleys.

DECEMBER 1963

Station	Day of month																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
NORTH OMAHA NEBRASKA	194	198	254	216	247	237	60	100	229	105	136	247	259	267	265	94	134	---	152	169	254	256	241	226	245	147	170	160	239	91	210	193
OAK RIDGE TENNESSEE	---	---	220	226	99	247	173	158	56	234	41	106	63	128	265	263	238	173	260	134	136	153	60	144	249	225	156	134	256	224	527	184
OKLAHOMA CITY OKLA.	207	306	299	295	292	291	263	303	256	22	100	291	183	293	176	171	62	277	50	65	100	195	278	264	272	271	231	267	64	166	113	207
PAGE ARIZONA	269	271	271	268	262	241	258	213	214	236	243	252	264	251	236	249	250	246	175	156	240	249	252	251	231	213	245	245	252	250	238	242
PHOENIX ARIZONA	333	306	320	344	329	330	335	344	334	335	337	304	338	343	339	336	339	337	294	321	272	306	313	310	292	300	297	303	306	298	290	319
PORTLAND MAINE	211	187	35	188	222	126	160	---	---	131	192	35	76	88	199	209	211	80	175	206	175	206	165	116	187	123	180	247	95	217	199	160
RAPID CITY S.DAK.	173	188	172	187	154	121	139	184	67	140	218	166	178	210	160	74	101	174	137	104	73	144	137	135	97	162	87	126	109	160	163	143
RIVERSIDE CALIFORNIA	346	363	359	358	358	349	347	314	264	348	312	335	321	343	339	313	342	316	288	279	301	335	346	343	283	318	294	338	323	227	346	324
SAINT CLOUD MINN.	137	58	46	46	123	78	56	27	104	141	94	94	129	165	162	197	93	122	198	187	171	151	127	165	101	94	180	147	196	198	116	126
SALT LAKE CITY UTAH	43	69	53	54	51	95	264	117	67	145	169	267	123	81	123	189	207	224	170	62	100	267	243	236	157	106	188	84	93	153	103	139
SAN ANTONIO TEXAS	344	334	390	387	293	75	309	315	142	77	82	56	53	313	213	135	79	80	57	97	58	147	374	380	373	376	311	348	257	199	380	227
SANTA MARIA CALIF.	311*	309	311	302	293	270	289	287	---	293	274	295	285	284	284	285	273	200	282	280	273	293	299	297	299	288	279	280	183	227	307	281*
SAULT STE MARIE MICH	---	121	186	131	26	37	44	40	---	---	130	129	116	136	194	116	115	219	191	139	79	61	47	44	58	125	152	170	170	187	141	118
SEATTLE TACOMA WASH.	95	60	109	42	18	65	67	18	87	146	128	130	38	23	23	46	49	81	34	52	110	18	36	43	103	30	73	49	68	43	95	64
SHREVEPORT LOUISIANA	249	300	319	315	284	113	176	316	290	33	31	66	53	279	276	292	188	287	106	18	141	67	320	303	300	288	288	215	192	244	304	215
SPOKANE WASHINGTON	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	150	138	42	53	73	74	119	162	---
STATE COLLEGE PENN.	198	97	44	96	86	100	223	114	94	50	155	53	92	191	230	214	183	108	193	209	211	147	30	83	161	222	68	177	168	228	160	141
STERLING VIRGINA	208	100	69	---	68	145	207	87	129	121	94	51	53	48	215	217	214	83	225	221	209	202	27	204	195	244	137	172	247	227	173	153
STILLWATER OKLAHOMA	---	302*	308	299*	299*	262	241	306*	272	---	103	243*	190	288*	181	179	76	283	70	75	100	---	280	283	291	---	253	261	57	265	122	218*
SWAN ISLAND W.I.	---	---	---	---	---	---	425	344	264	464	362	461	461	466	322	412	258	431	432	460	496	489	421	111	276	401	320	244	213	414	338	371
TAMPA FLORIDA	418	360	228	361	360	403	232	314	371	384	368	317	245	202	269	227	68	342	388	332	341	208	51	159	371	344	289	108	191	126	139	275
TUCSON ARIZONA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	315	314	267	309	313	323	330	328	327	285	311	329	313	318	321	---

Note.--Langley is the unit used to denote one gram calorie per square centimeter.
Values with an asterisk are interpolated.

NET RADIATION

Net radiation in langleys per day (midnight to midnight) at Huntley, Mont. during the month DECEMBER 1963

Date.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Avg.
Langleys. . .	-48	-67	-76	-78	-48	-40	-95	-14	13	-8	-61	-166	-78	*-0	2	-15	-28	-41	-5	-8	-18	-81	-89	-108	-85	-45	-1	-51	-84	-68	-98	-51

The measurement is made with a Beckman and Whitley net exchange radiometer over a plot of sod. The value represents the total incoming minus the total outgoing radiation of all wave lengths.

* less than one-half

These data are of an experimental nature and are published as received from the Huntley Exp. Station. **The instrument with which they were measured has not been checked by the Weather Bureau.**

TOTAL OZONE DATA

These provisional ozone data are obtained from measurements made with a Dobson ozone spectrophotometer, and are applicable approximately to local apparent noon. The data are presented in the code ·s g g g defined in the August 1962 WMO circular entitled "PUBLICATION OF DATA FOR METEOROLOGICAL RESEARCH, WORLD OZONE DATA."

Units Milli-atmo-cms.

Station	Day of month																															Mean O_3
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Albuquerque, N.Mex.	00279	00276	00269	00272	06261	00268	00274	00246	00270	-----	00313	00330	00269	00284	-----	00261	-----	00261	06268	00272	00330	00323	00292	06274	00262	00282	00278	00290	02350	00341	00358	288
Bismarck, N. Dak.	00344	00298	00291	00291	35269	36282	35338	00355	35351	34363	00331	35344	35350	00317	00303	35313	35324	00303	35321	20286	00325	35352	34326	00274	35268	35327	35353	35381	20372	20345	00303	322
Caribou, Maine	02272	36393	33361	36365	36388	02342	35297	00292	-----	35375	36372	33352	36329	36352	00393	36379	02367	02350	36444	-----	-----	00367	00389	36360	35403	00352	00323	00385	02443	02462	02445	373
Green Bay, Wis.	00362	-----	02344	00329	35320	34308	00294	36473	34379	34352	34354	35336	35367	00357	00321	00329	-----	00398	00352	00374	00349	00380	00318	20327	34307	36343	00364	34425	00437	00431	00376	355
Mauna Loa, Hawaii	00256	00253	00248	00240	-----	-----	-----	00238	00235	00235	00231	-----	00238	00238	00241	00251	00259	00256	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	244
Nashville, Tenn.	00320	00426	00309	00305	05319	00301	04285	04343	04303	00277	05274	05308	05302	00280	00295	00287	00303	-----	-----	-----	-----	05387	05384	00328	00294	00285	00335	00330	00362	-----	04365	316
Sterling, Va.	00349	04313	06404	00337	04323	06308	00286	05312	04343	00293	04287	04291	04300	05294	00316	00303	00305	05363	00349	00396	00369	00375	-----	-----	00330	00285	04343	05389	00373	00351	03345	332

The spectrophotometer measures the total amount of ozone in the atmosphere, i.e., the amount contained in a vertical column of air extending from ground level to the top of the atmosphere in the vicinity of the station. The amount of ozone in this column coded g g g is expressed in terms of a thickness of a layer it would occupy at standard temperature and pressure (e.g., 350 milli-atmo-cm. ozone implies an ozone layer 0.350 centimeter thick). The code ·s designates the type of measurement made.

CONDENSED CLIMATOLOGICAL SUMMARY

DELAYED DATA

Section	Temperature						Precipitation			
	Monthly extremes						Monthly extremes			
	Station	Highest	Date	Station	Lowest	Date	Station	Greatest	Station	Least
		°F			°F			*In.*		*In.*
August 1963										
Alaska	Skagway	90	12	Colleen River	19	28	Shearwater Bay	15.31	Skagway	T
September 1963										
Alaska	2 Stations	80	8+	2 Stations	5	23+	Ketchikan	26.98	Lake Chandalar	0.00
October 1963										
Alaska	Willow Trading Post	72	5	Barrow WBAP	-21	30	Yakutat WBAP	30.00	Slana	.08
November 1963										
Alaska	2 Stations	53	14+	Tok	-59	21	Little Port Walter	24.49	2 Stations	.00
Hawaii	Kilauea Point 1133, Kauai	92	21	Mauna Loa Slope Obs.	29	11	Puu Kukui Makai 472, Maui	22.00	5 Stations	.00

See reference notes with current data.

STORM SUMMARY

STATE	TORNADOES					HAILSTORMS				WINDSTORMS				LIGHTNING				‡ HEAVY SNOWSTORMS AND BLIZZARDS				# ICE STORMS				∅ ALL OTHER			
								†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE				†DAMAGE	
	NUMBER	DAYS	DEATHS	INJURIES	†DAMAGE	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS	DEATHS	INJURIES	PROPERTY	CROPS
September 1963																													
Alaska *																													

See reference notes with current data.

C O R R E C T I O N S

	Month	1953 Annual
page 12:	New Orleans, La.	Excessive precipitation for January 22, should read: 0.25, 0.27, 0.27, 0.28, 0.29, 0.31, 0.34, 0.36, 0.36, 0.36, 0.36, and 0.36, respectively, for the 3 hour period.
	Month:	January 1963
page 35:	Canton Is., Pacific	Average should be 688; Feb. 679, and March 643.
	Month:	March 1963
pages 152, 160:		Solar Radiation averages for Seattle Univ. should be 215; Shreveport 429; Stillwater 395; and 521 on the 23rd.
	Month:	June 1963
page 296:	Missouri	Deaths by lightning should be 1.
	Month:	October 1963
page 501:	Norfolk, Va.	Percent of possible sunshine should be 68.
page 502:	Del Rio, Texas	Data is from airport station from March 1963.
	Grand Forks FAA, N. Dak.	Accumulated heating degree days should be 437; and 1385 for November.

RAWINSONDE DATA

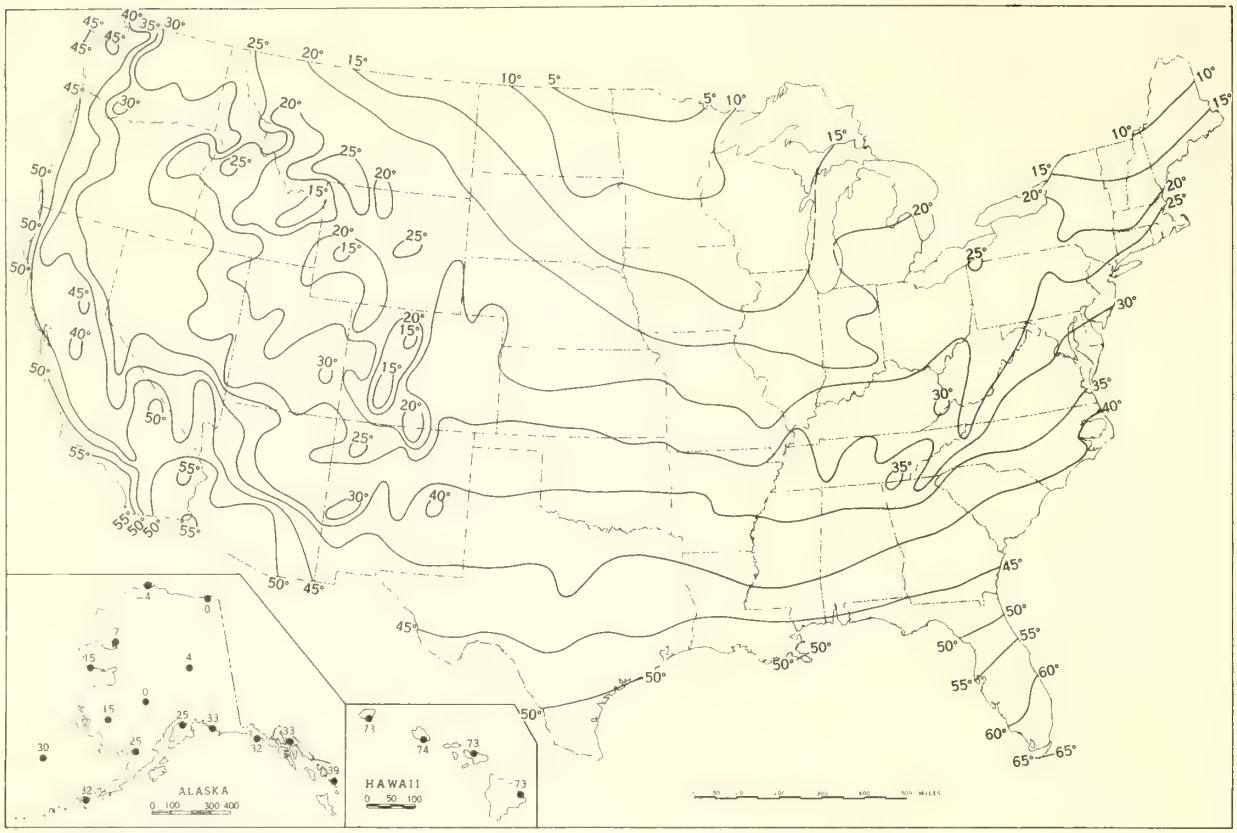
Average monthly values

Standard pressure surface (mb)	MARCUS ISL., N. PACIFIC 1/ 1013 MB						MERIDA, MEXICO 1/ 1015 MB						MERIDA, MEXICO 2/ 1016 MB					
	Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind		Number of observations	Dynamic height	Temperature	Relative humidity	Wind	
					Direction	Speed					Direction	Speed					Direction	Speed
SURFACE	31	9	27.0	79	99	8.2	31	11	23.1	95	90	6.2	30	11	19.1	97	88	3.7
1000	31	121	26.2	81	108	8.7	31	142	23.8	88	98	11.5	30	145	22.0	84	82	5.6
950	31	570	22.9	84	105	9.1	31	595	22.8	78	116	19.0	30	587	20.0	81	96	6.4
900	31	1,046	20.0	81	100	9.5	31	1,064	20.5	68	116	17.9	30	1,057	17.4	77	67	4.5
850	31	1,537	17.3	76	99	8.7	31	1,557	17.9	62	114	18.3	30	1,545	15.0	69	57	2.9
800	31	2,054	14.7	70	98	7.8	31	2,074	15.1	55	113	15.5	30	2,057	12.9	59	10	1.4
750	31	2,596	12.0	62	102	8.2	31	2,606	11.9	53	114	15.0	30	2,589	10.6	48	333	1.9
700	31	3,175	9.0	55	99	8.7	31	3,193	8.5	50	109	13.4	30	3,171	7.6	42	275	2.9
650	31	3,781	5.3	50	96	9.1	31	3,794	4.8	50	109	12.8	30	3,772	4.4	41	282	5.6
600	31	4,435	1.5	48	94	8.4	31	4,451	1.1	49	101	13.0	30	4,428	.8	39	281	6.6
550	31	5,126	- 2.3	40	90	8.0	31	5,138	- 2.7	45	83	11.8	30	5,112	- 2.9		271	9.5
500	31	5,882	- 6.8	36	79	8.0	31	5,898	- 6.9	42	80	12.0	30	5,873	- 7.2		266	11.1
450	31	6,695	-11.9	36	67	8.9	31	6,704	-11.9	46	74	12.6	30	6,682	-12.2		262	13.8
400	31	7,580	-17.8		59	8.9	31	7,607	-17.7	39	63	11.1	29	7,581	-17.9		262	18.6
350	31	8,575	-24.5		60	10.5	31	8,582	-24.6	32	65	9.7	29	8,565	-24.8		267	23.9
300	31	9,670	-32.5		48	11.7	31	9,695	-32.9		58	5.4	29	9,668	-33.0		271	27.6
250	31	10,936	-43.2		28	13.6	31	10,851	-43.1		41	6.8	28	10,922	-43.2		275	33.8
200	31	12,600	-55.0		17	17.1	31	12,414	-55.0		19	7.8	29	12,383	-55.3		267	36.9
175	30	13,242	-61.7		14	15.7	31	13,253	-61.4		4	5.5	29	13,222	-61.5		271	39.4
150	30	14,182	-68.0		18	15.7	31	14,194	-67.6		15	10.9	29	14,162	-67.6		276	35.0
125	28	15,265	-70.5		41	14.6	31	15,280	-70.6		46	14.6	28	15,242	-73.1		272	28.9
100	27	16,593	-68.9		70	19.6	31	16,605	-69.5		72	22.0	27	16,536	-76.5		271	17.1
80	27	17,940	-64.6		81	22.7	31	17,946	-66.4		83	27.8	27	17,822	-74.7		308	5.1
70	27	18,759	-62.6		84	27.0	31	18,761	-63.4		82	30.9	27	18,611	-70.8		26	2.5
60	27	19,716	-60.3		83	31.3	29	19,711	-61.8		82	36.1	27	19,524	-67.7		96	1.9
50	27	20,868	-57.8		83	34.0	29	20,851	-58.0		85	40.0	27	20,635	-62.3		239	2.7
40	26	22,274	-55.4		86	35.4	29	22,268	-54.4		90	38.3	27	22,030	-57.3		276	3.3
30	25	24,118	-52.7		86	38.3	29	24,124	-51.0		89	39.8	27	23,872	-51.7		281	6.2
25	22	25,298	-50.6		81	40.4	26	25,317	-48.8		84	39.4	27	25,062	-49.2		257	8.2
20	22	26,759	-48.1		82	46.4	24	26,786	-46.2		83	39.4	24	26,542	-46.6		258	11.1
15	22	28,669	-44.9		84	43.1	13	28,689	-44.1				18	28,472	-43.2		269	8.7
10	18	31,397	-40.9		85	49.9												
7	16	33,830	-37.9		82	54.6												
5	15	36,166	-36.9															

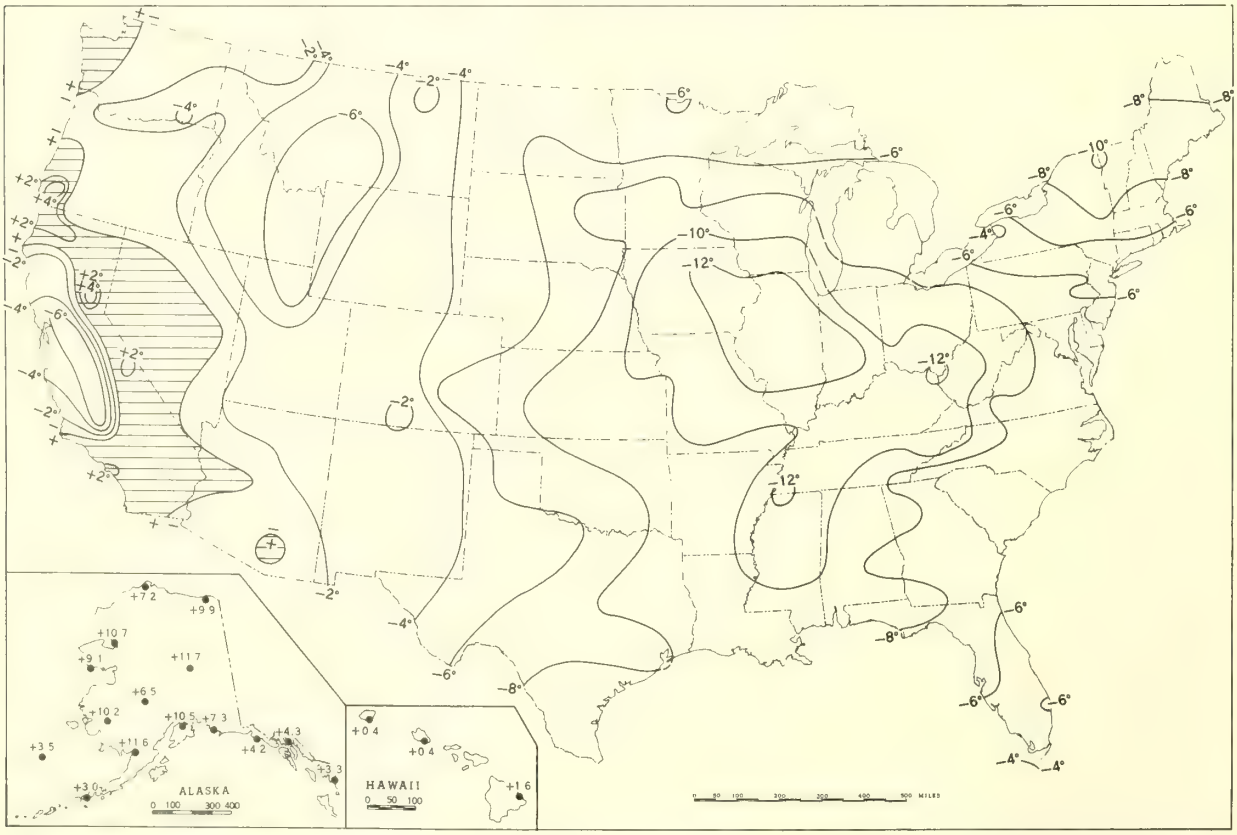
1/ July 1963 2/ November 1963

Also see reference notes with current data.

Chart I. A. Average Temperature (°F.) at Surface, December 1963.



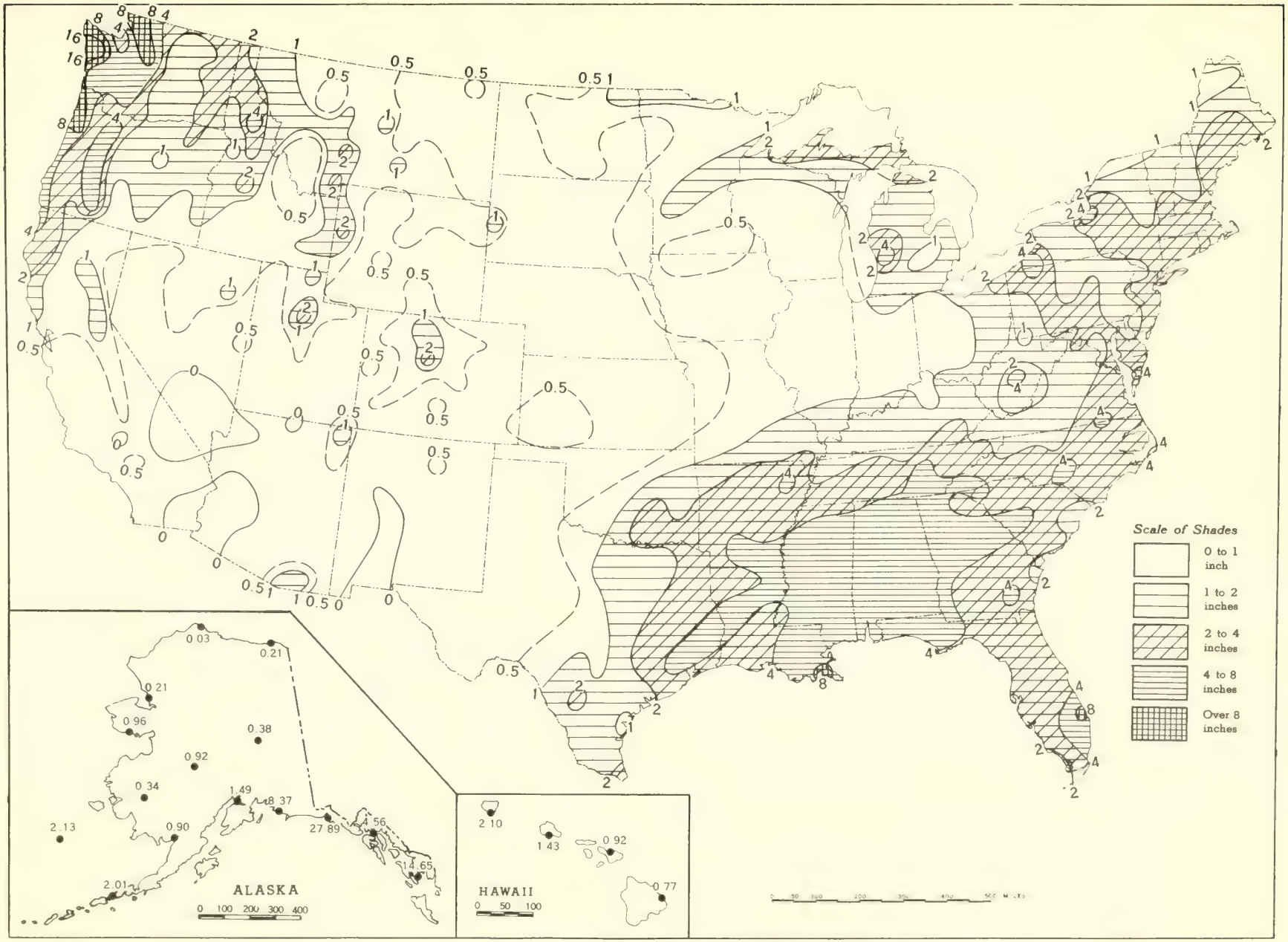
B. Departure of Average Temperature from Normal (°F.), December 1963.



A. Based on reports from over 870 Weather Bureau and cooperative stations. The monthly average is half the sum of the monthly average maximum and monthly average minimum, which are the average of the daily maxima and daily minima, respectively.

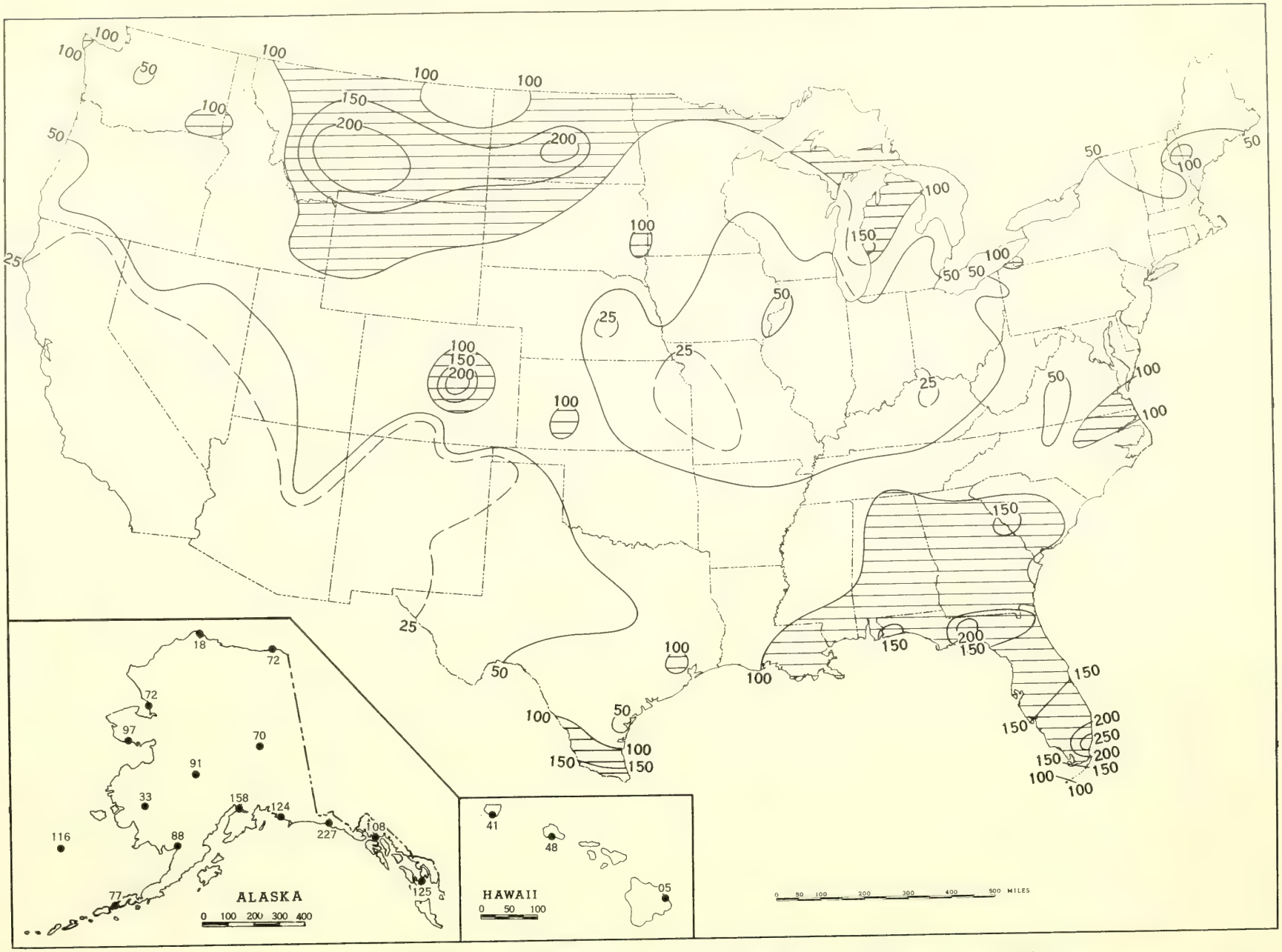
B. Departures from normal are based on the 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart II. Total Precipitation (Inches), December 1963.



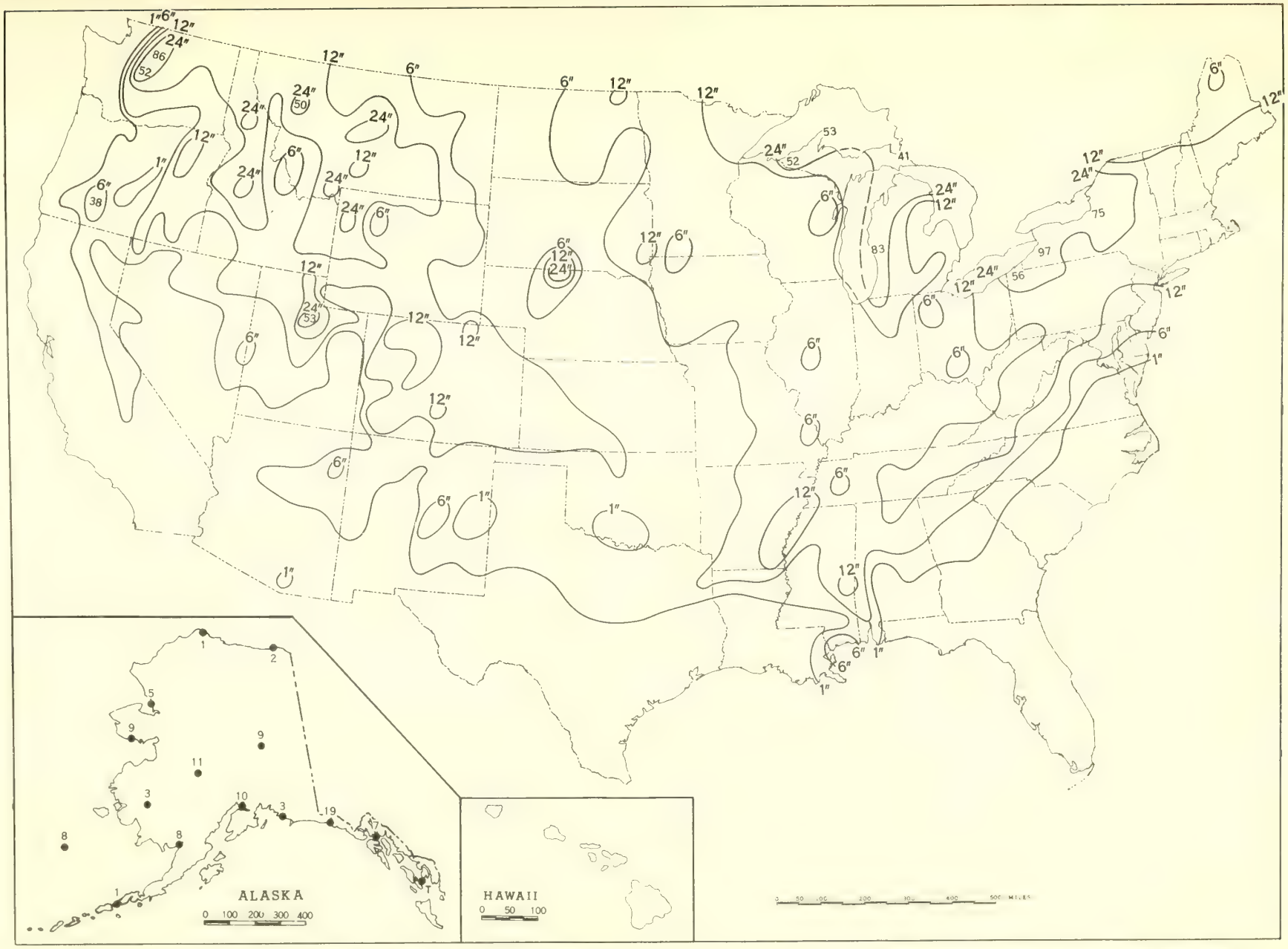
Based on daily precipitation records at about 870 Weather Bureau and cooperative stations.

Chart III. Percentage of Normal Precipitation, December 1963.



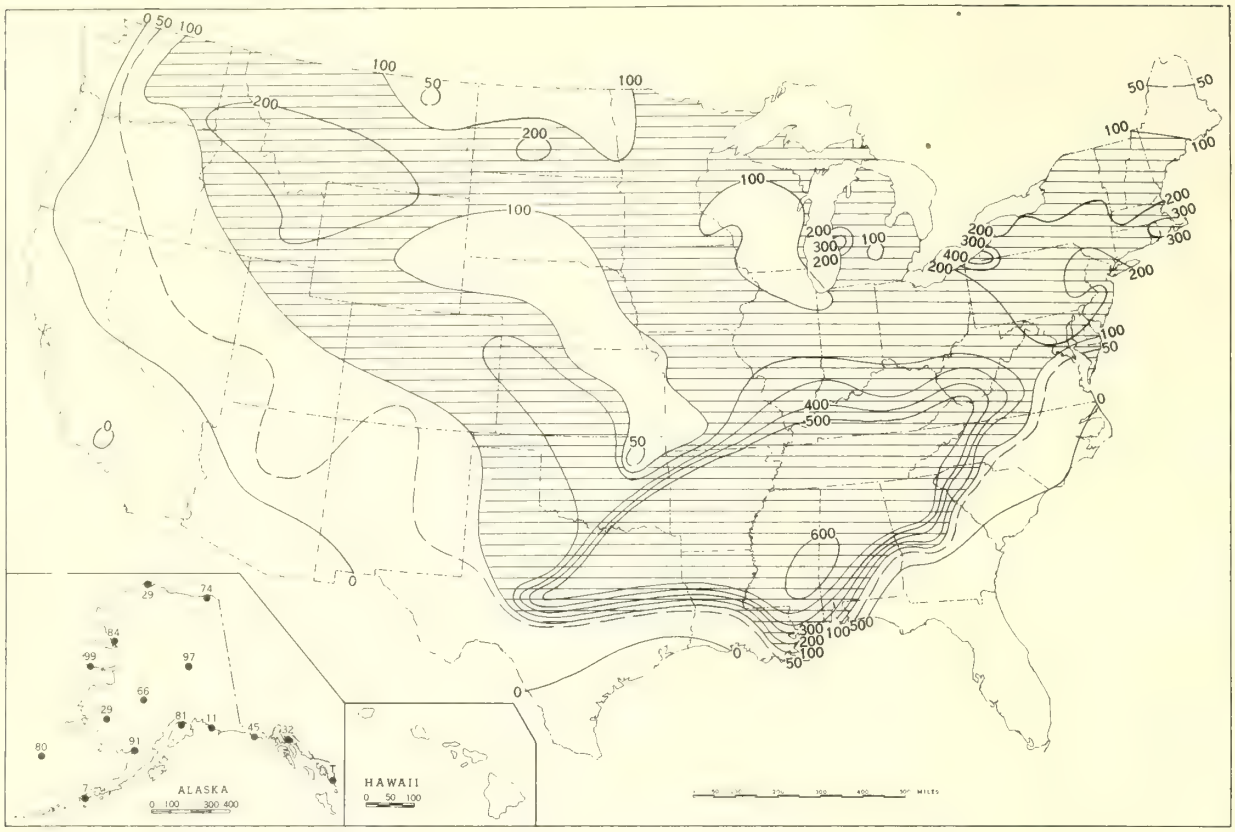
Normal monthly precipitation amounts are computed from 30-yr. normals (1931-60) for first-order Weather Bureau stations.

Chart IV. Total Snowfall (Inches), December 1963.

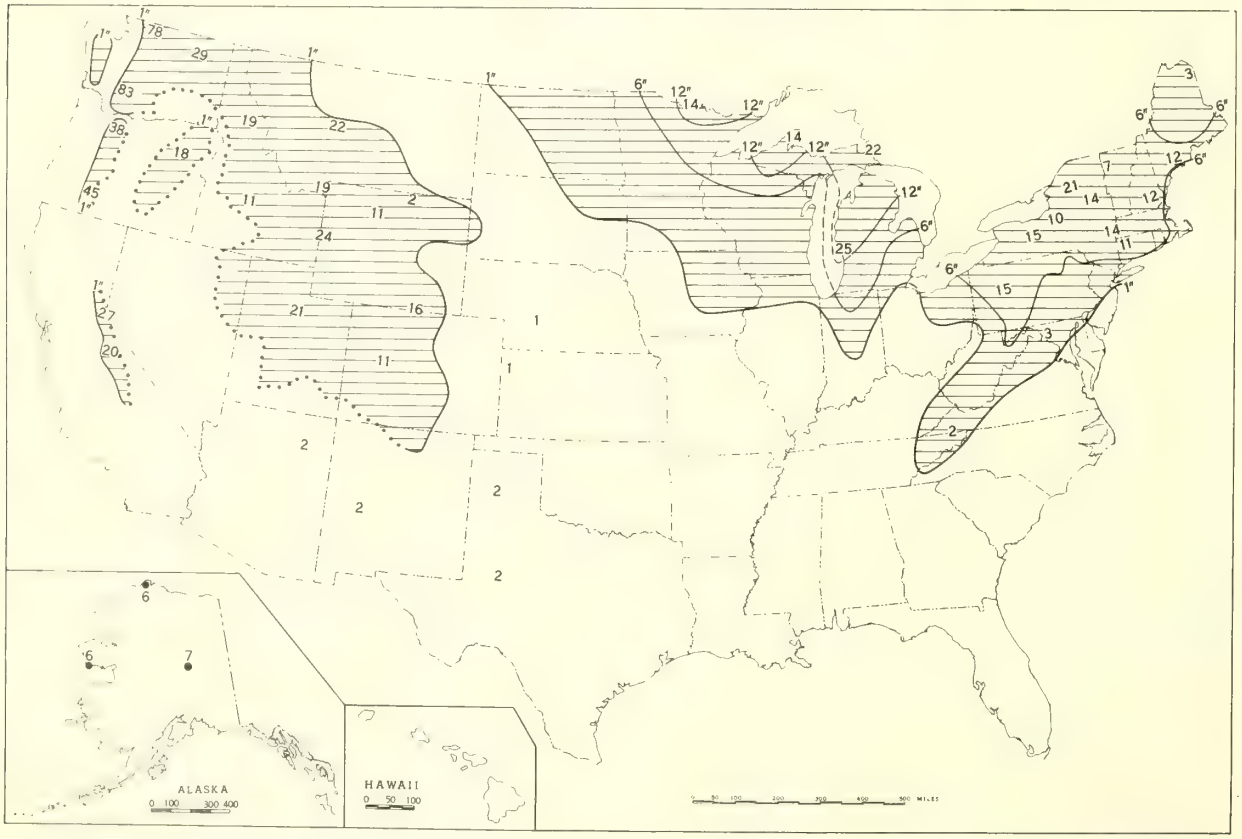


This is the total of unmelted snowfall recorded during the month at Weather Bureau and cooperative stations. This chart and Chart V are published only for the months of November through April although of course there is some snow at higher elevations, particularly in the far West, earlier and later in the year.

Chart V. A. Percentage of Mean Monthly Snowfall, December 1963.

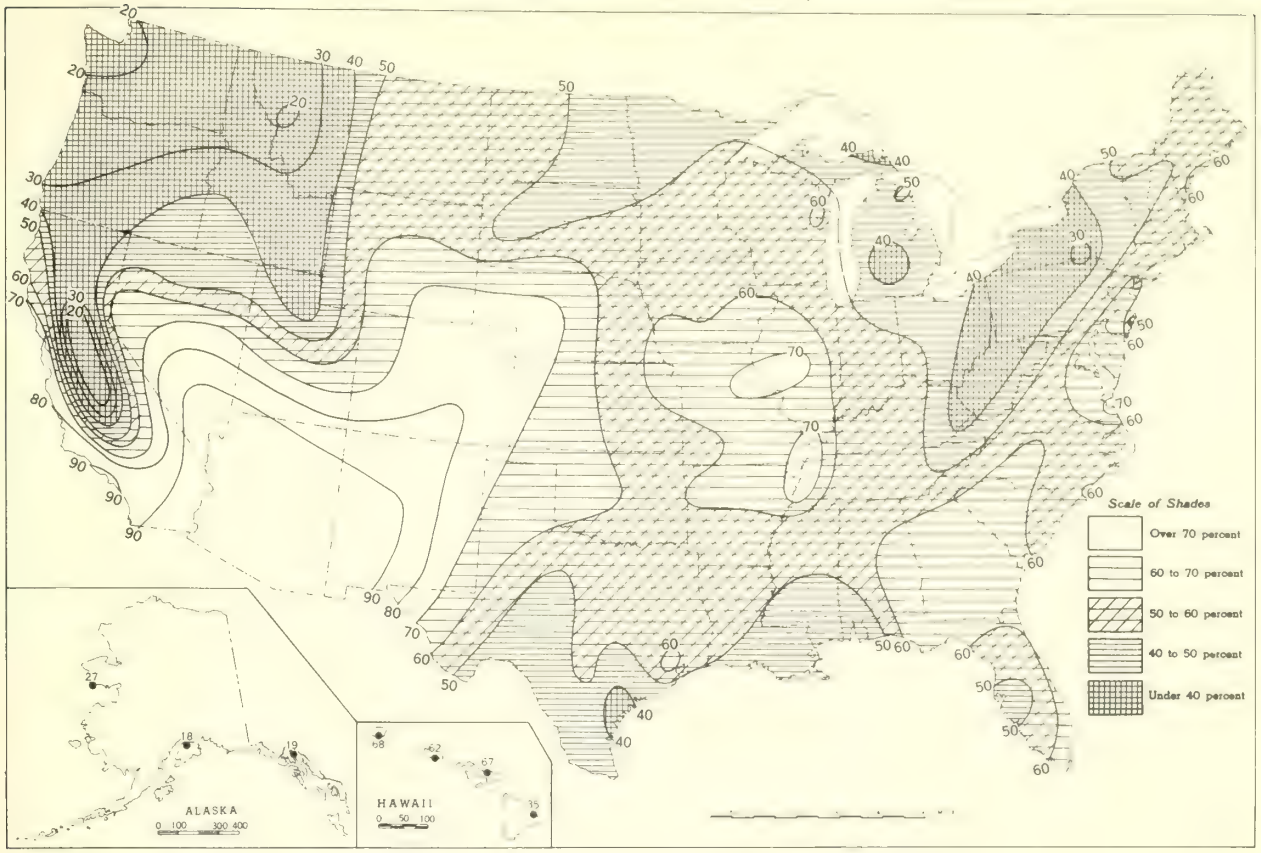


B. Depth of Snow on Ground (Inches), 7:00 a. m. E. S. T. , December 30 , 1963

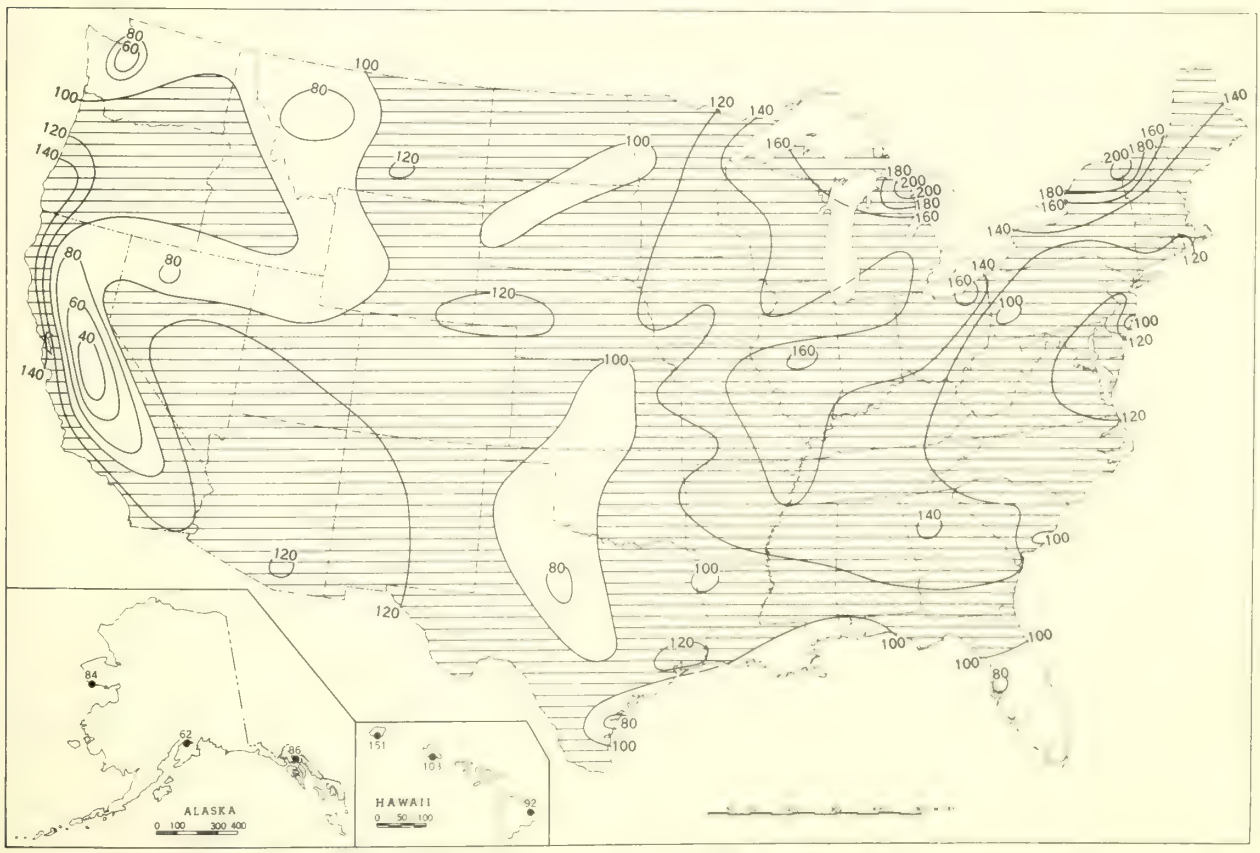


A. Amount of mean monthly snowfall is computed for Weather Bureau stations having at least 10 years of record.
B. Shows depth currently on ground at 7:00 a.m. E.S.T., of the Monday nearest the end of the month.
It is based on reports from Weather Bureau and cooperative stations.

Chart VI. A. Percentage of Possible Sunshine, December 1963.

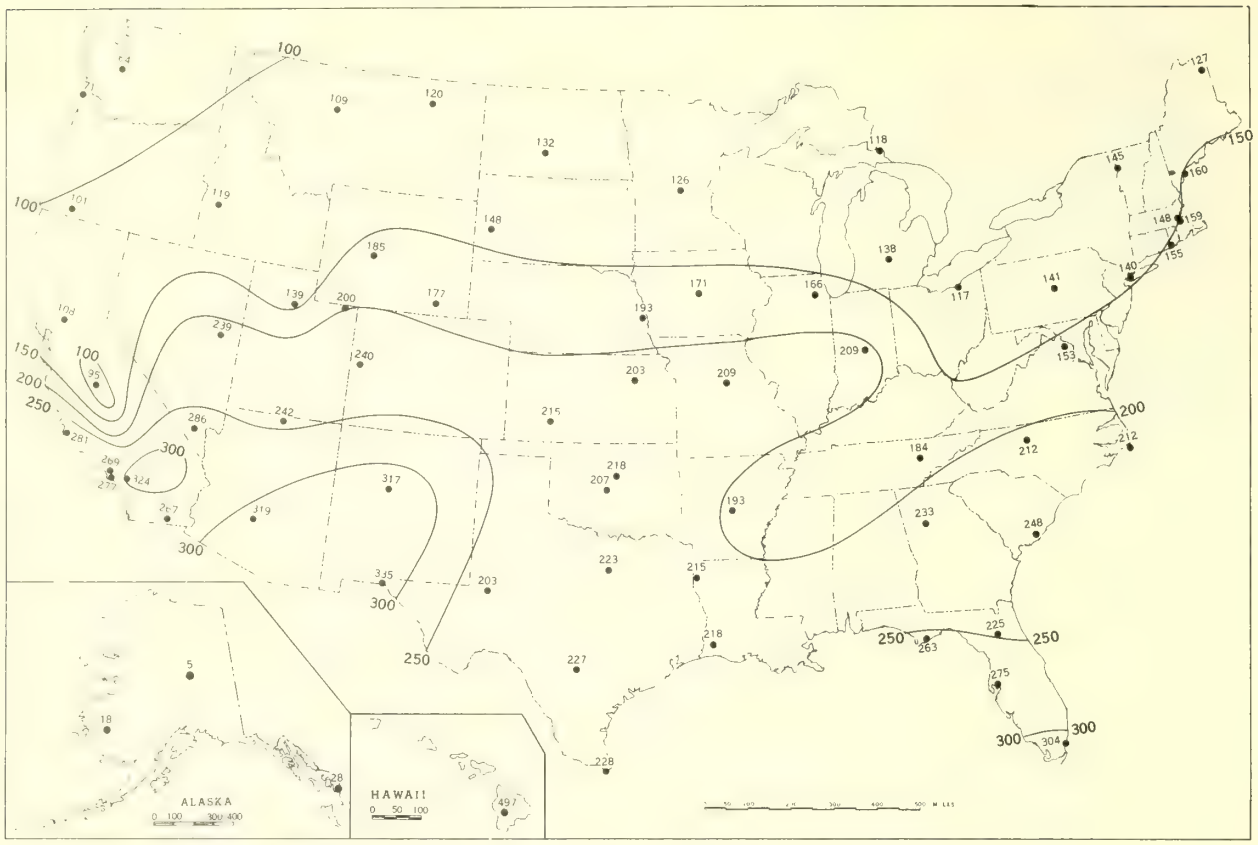


B. Percentage of Mean Monthly Sunshine, December 1963.

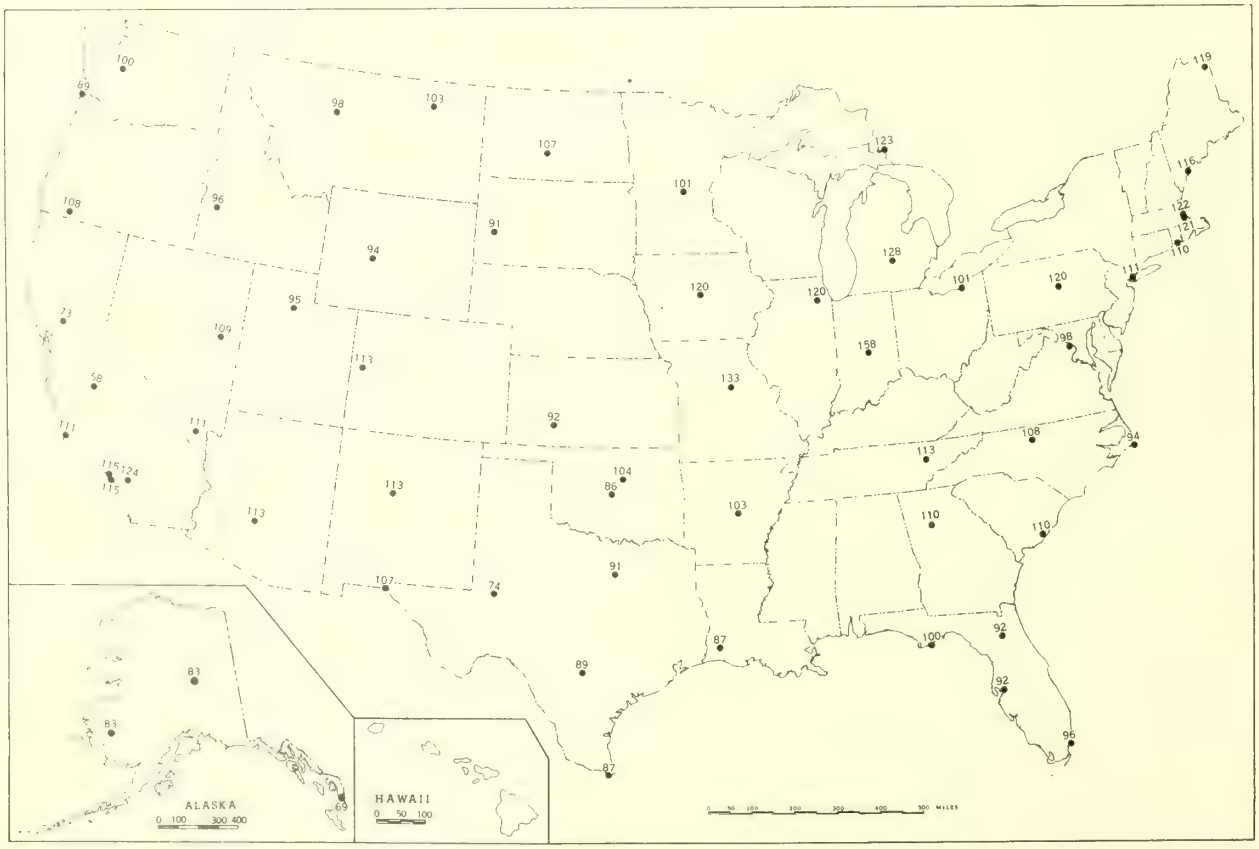


A. Computed from total number of hours of observed sunshine in relation to total number of possible hours of sunshine during month. B. Means are computed for stations having at least 10 years of record.

Chart VII. A. Average Daily Values of Solar Radiation, Langleys, December 1963.

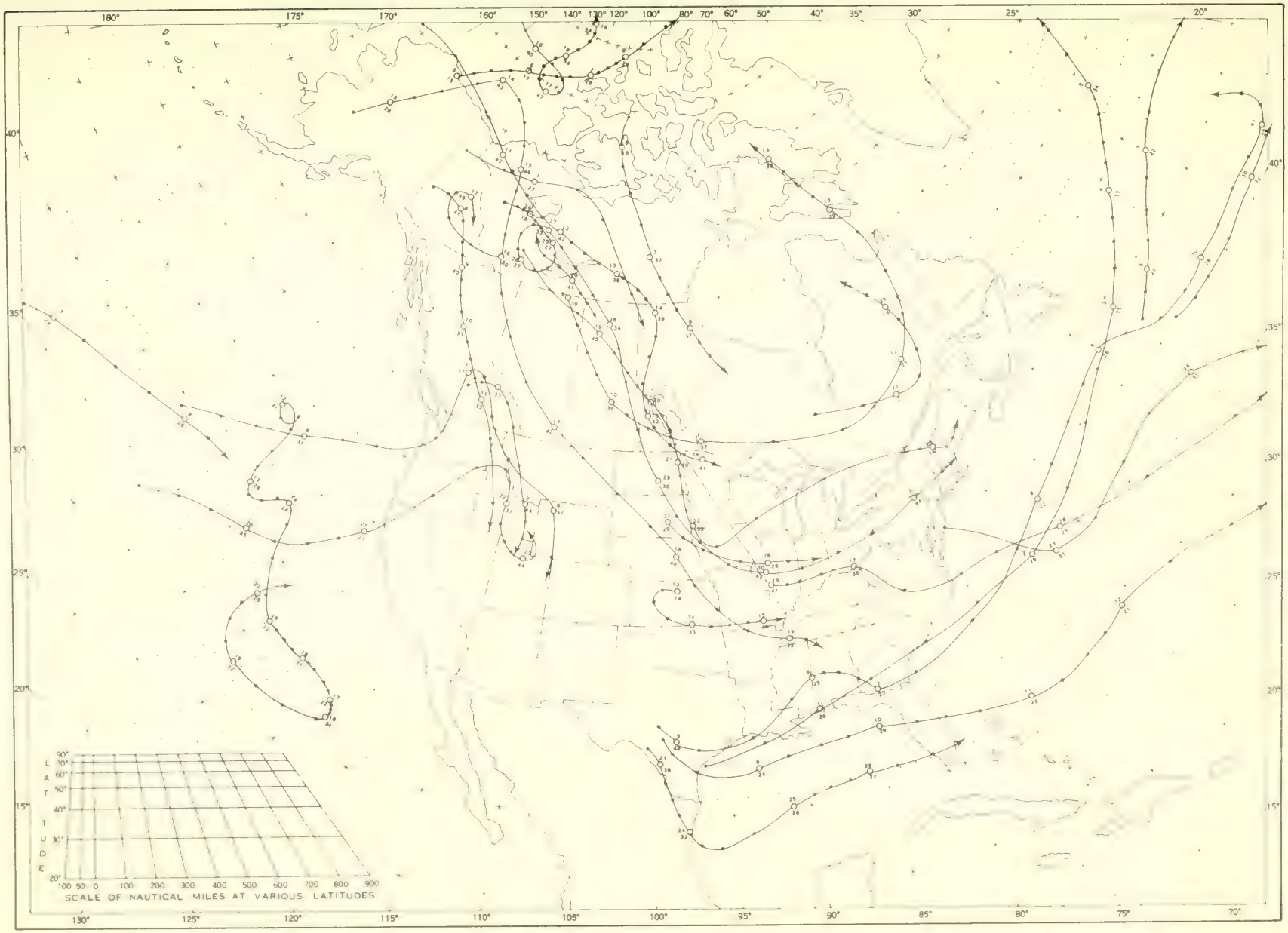


B. Percentage of Mean Daily Solar Radiation, December 1963.



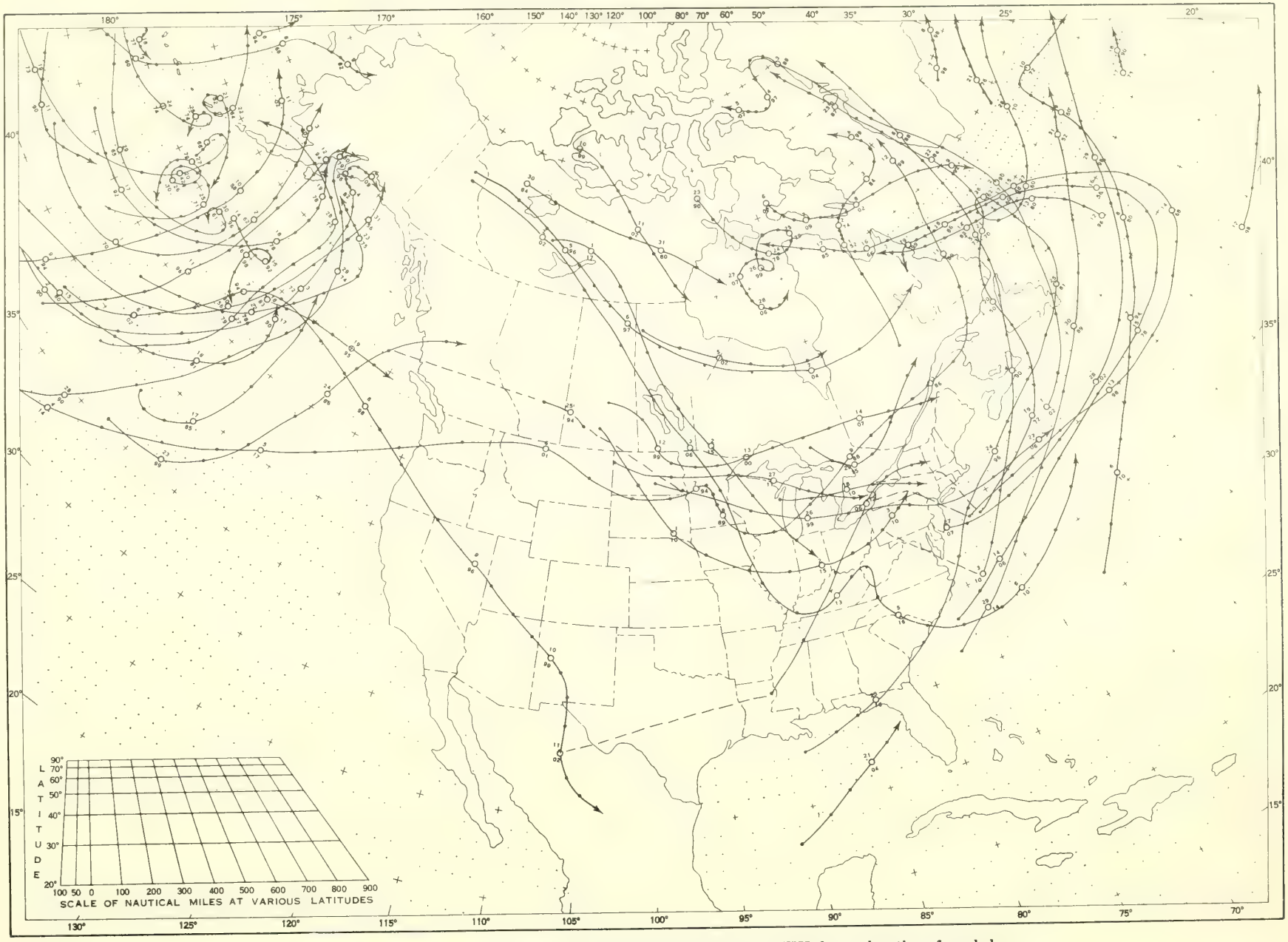
A. Mean daily solar radiation, direct + diffuse, received on a horizontal surface in langleys (1 langley = 1 gm. cal. $cm.^{-2}$) and recorded in International Pyrheliometer Scale of 1956. B. Percentage of the mean based on at least 5 years of record during the period 1950-1960, and corrected to the International Pyrheliometer Scale of 1956.

Chart VIII. Tracks of Centers of Anticyclones at Sea Level, December 1963.



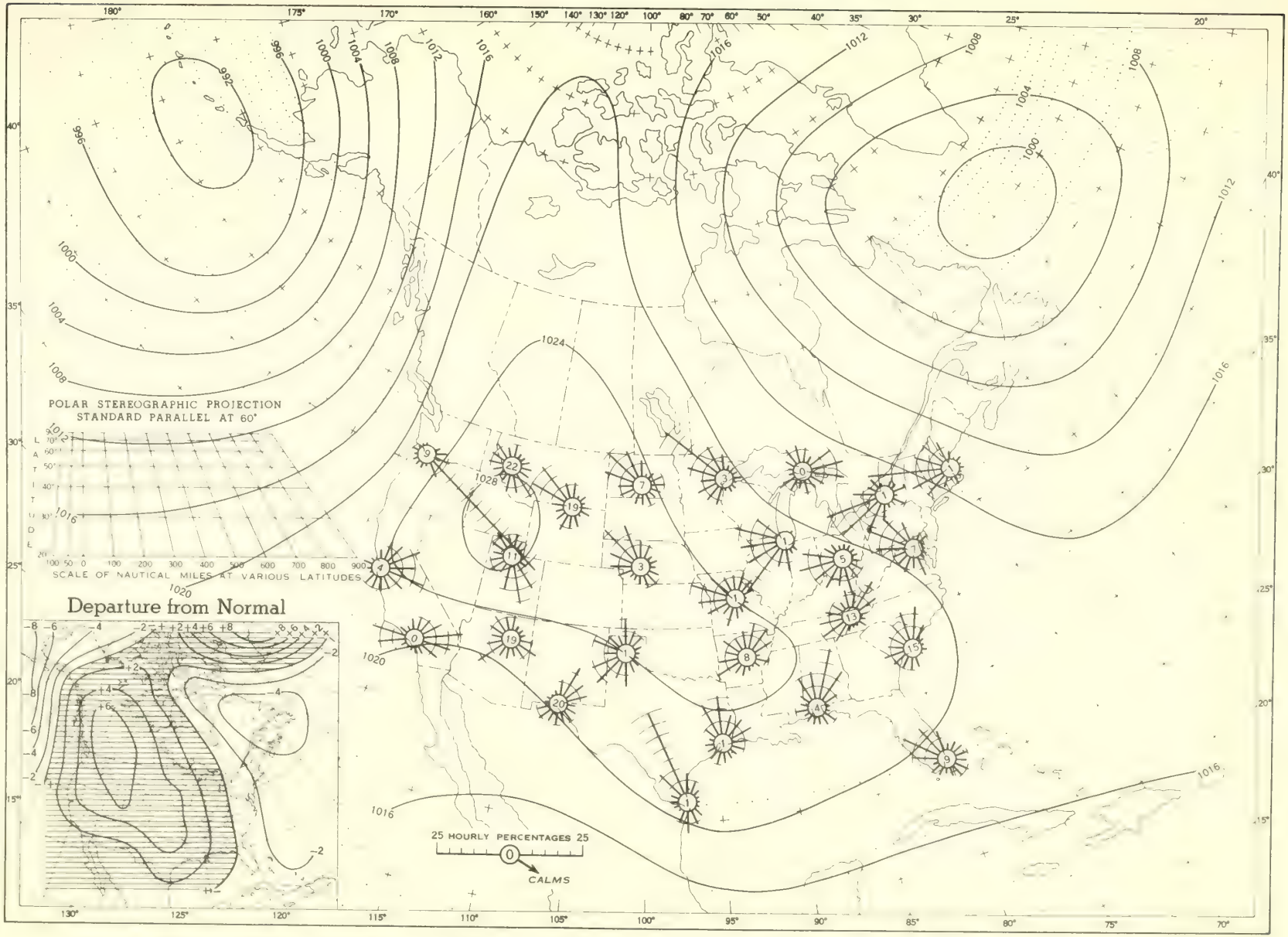
Circle indicates position of center at 7:00 a. m. E. S. T. Figure above circle indicates date, figure below, pressure to nearest millibar. Dots indicate intervening 6-hourly positions. Squares indicate position of stationary center for period shown. Dashed line in track indicates reformation at new position. Only those centers which could be identified for 24 hours or more are included.

Chart IX. Tracks of Centers of Cyclones at Sea Level, December 1963.



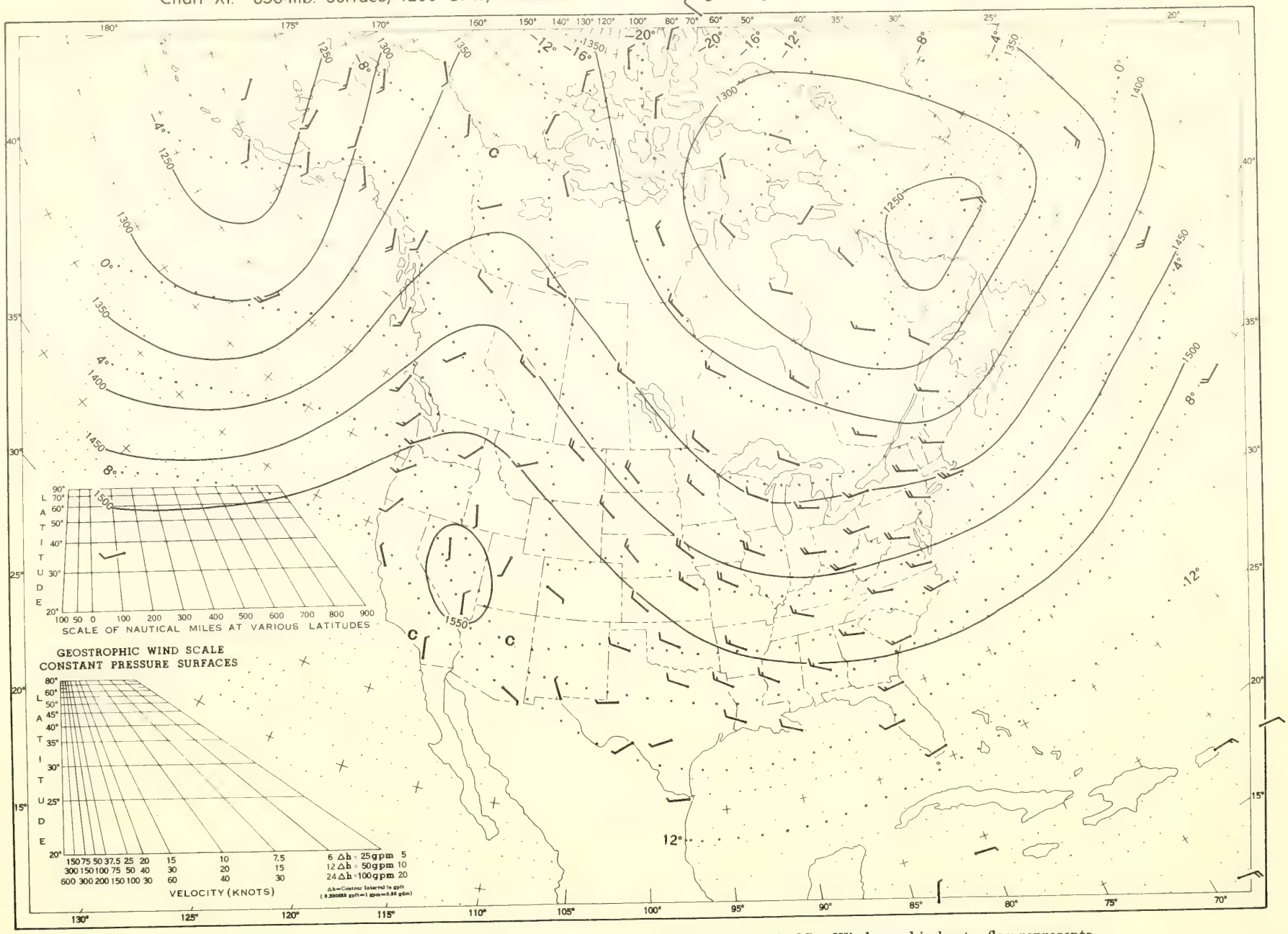
Circle indicates position of center at 7:00 a. m. E. S. T. See Chart VIII for explanation of symbols.

Chart X. Average Sea Level Pressure (mb.) and Surface Windroses, December 1963. Inset: Departure of Average Pressure (mb.) from Normal, December 1963.



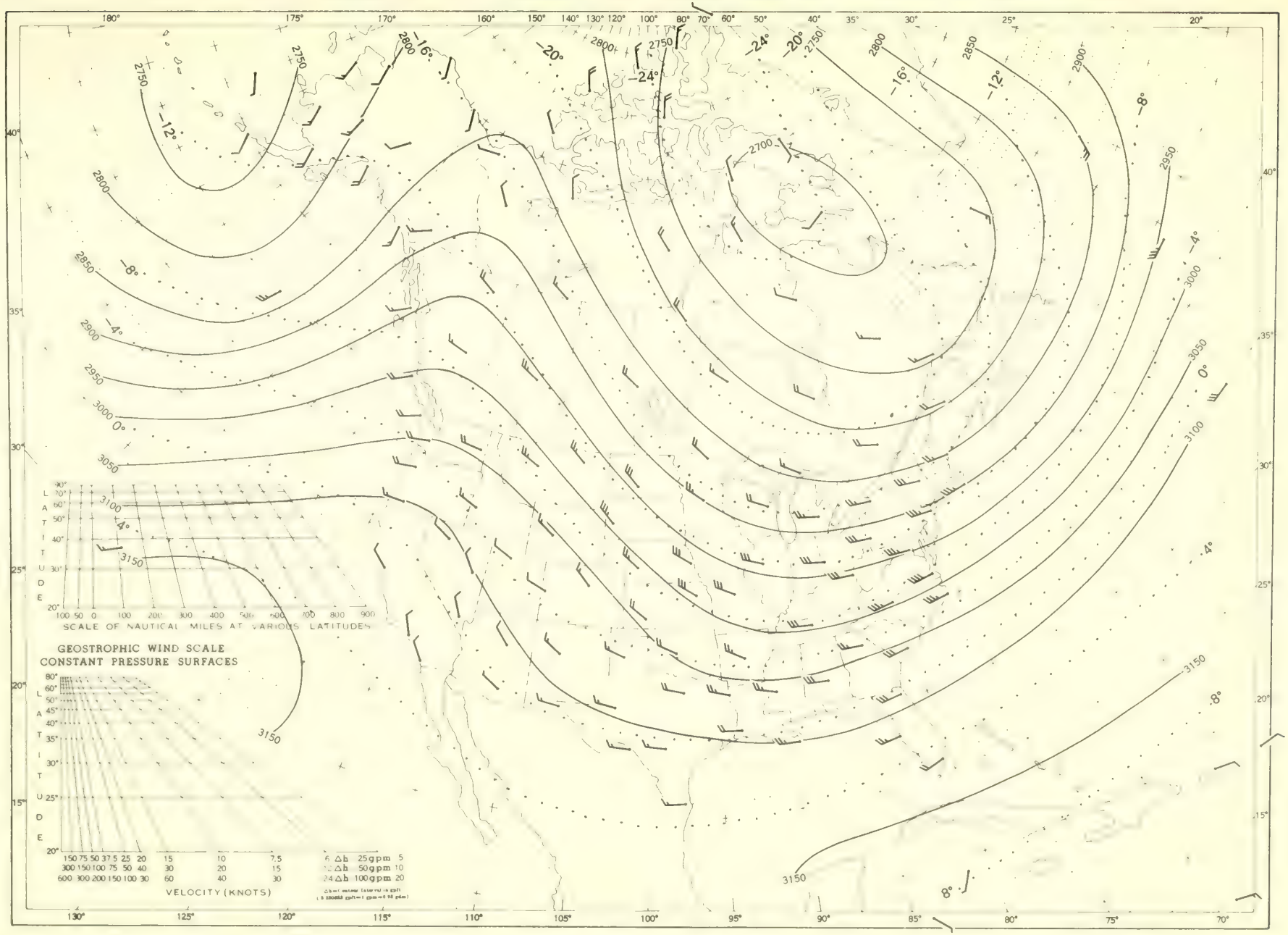
Average sea level pressures are obtained from the averages of the 7:00 a.m. and 7:00 p.m. E.S.T. readings. Windroses show percentage of time wind blew from 16 compass points or was calm during the month. Pressure normals are computed for stations having at least 10 years of record and for 10° intersections in a diamond grid based on readings from the Historical Weather Maps (1899-1939) for the 20 years of most complete data coverage prior to 1940.

Chart XI. 850-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.



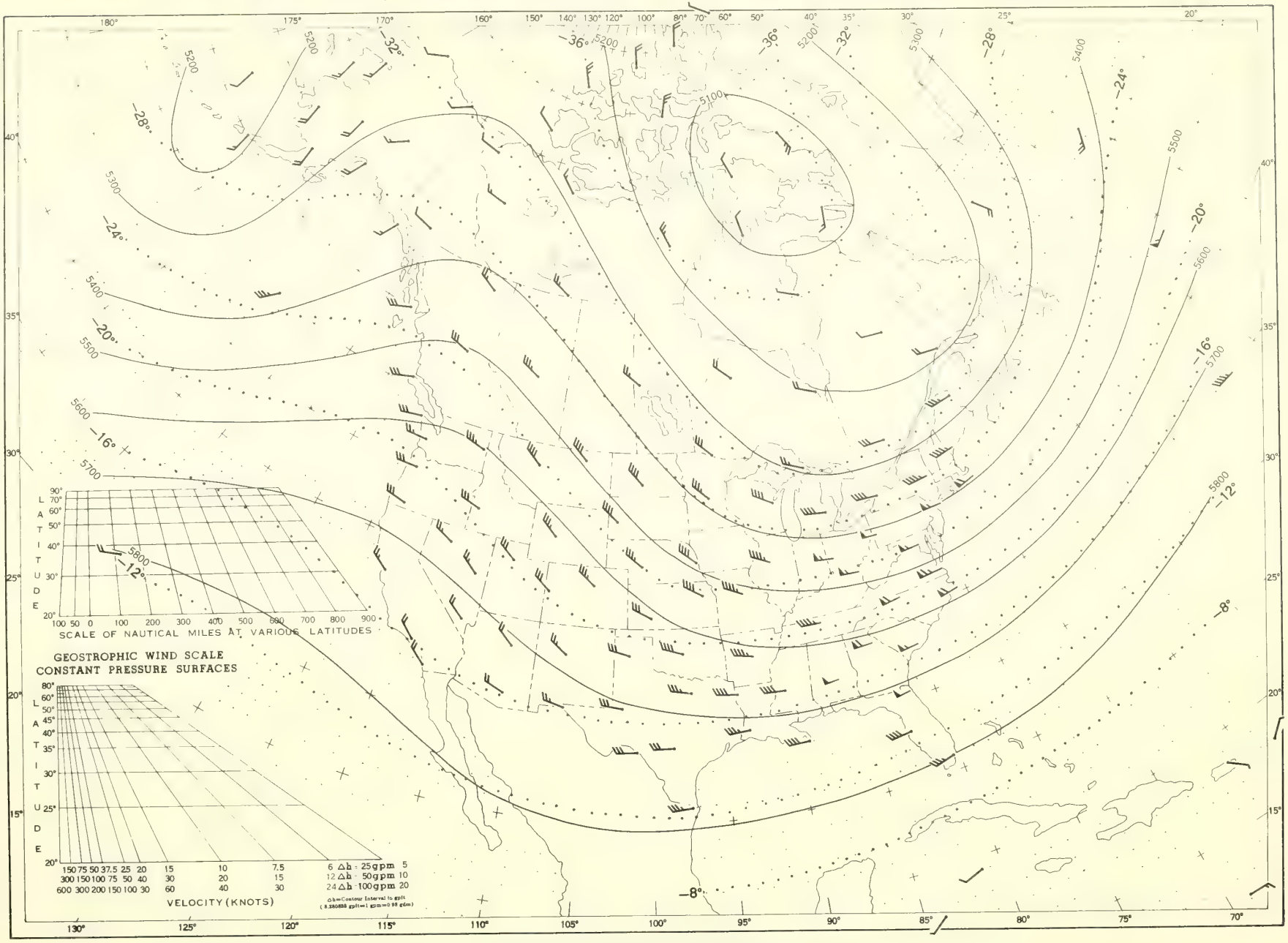
Height in geopotential meters (1 g.p.m. = 0.98 dynamic meters). Temperature in °C. Wind speed in knots; flag represents 50 knots, full feather 10 knots, and half feather 5 knots. All wind data are based on rawin observations.

Chart XII. 700-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.



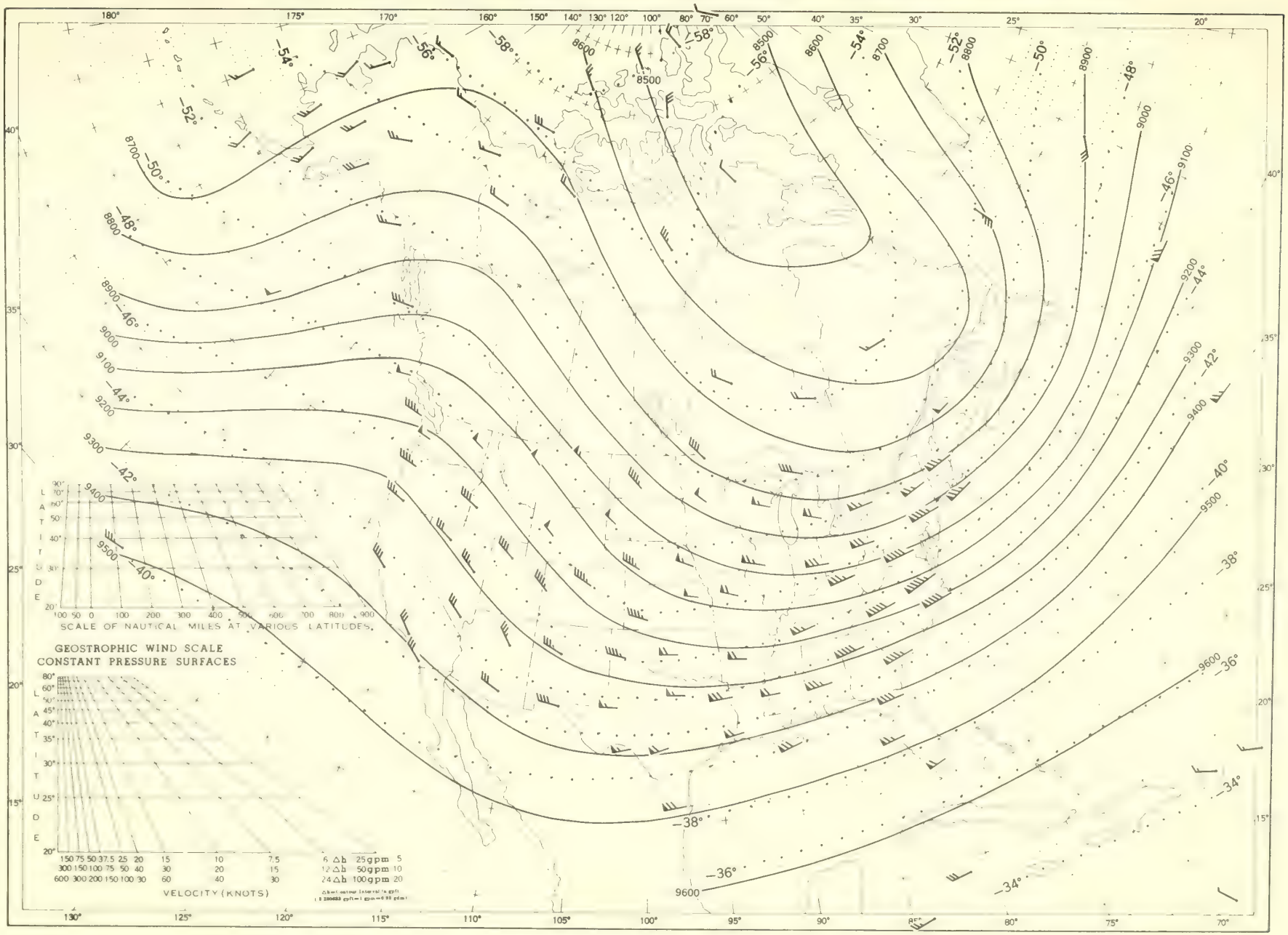
See Chart XI for explanation of map.

Chart XIII. 500-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.



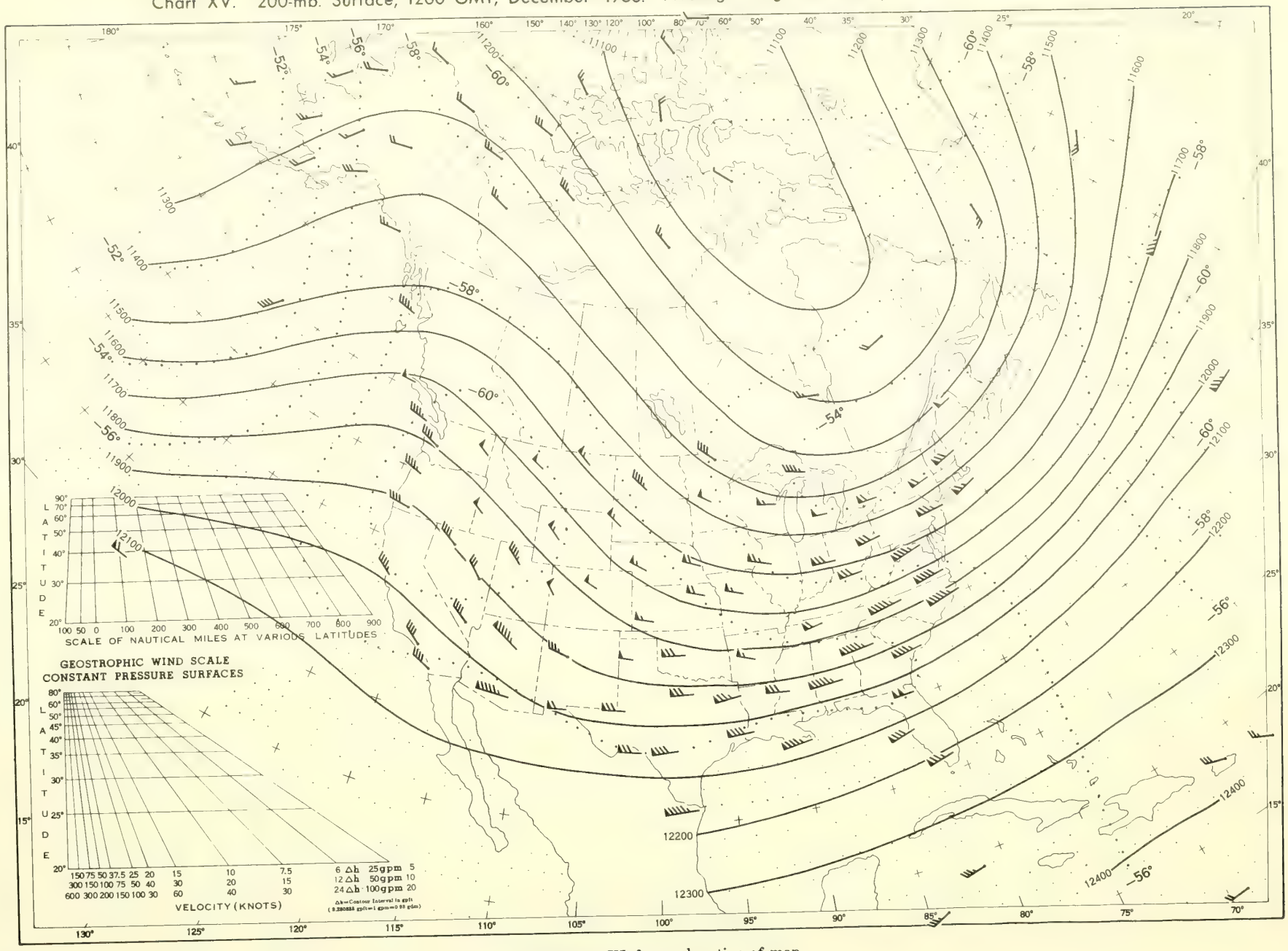
See Chart XI for explanation of map.

Chart XIV. 300-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.



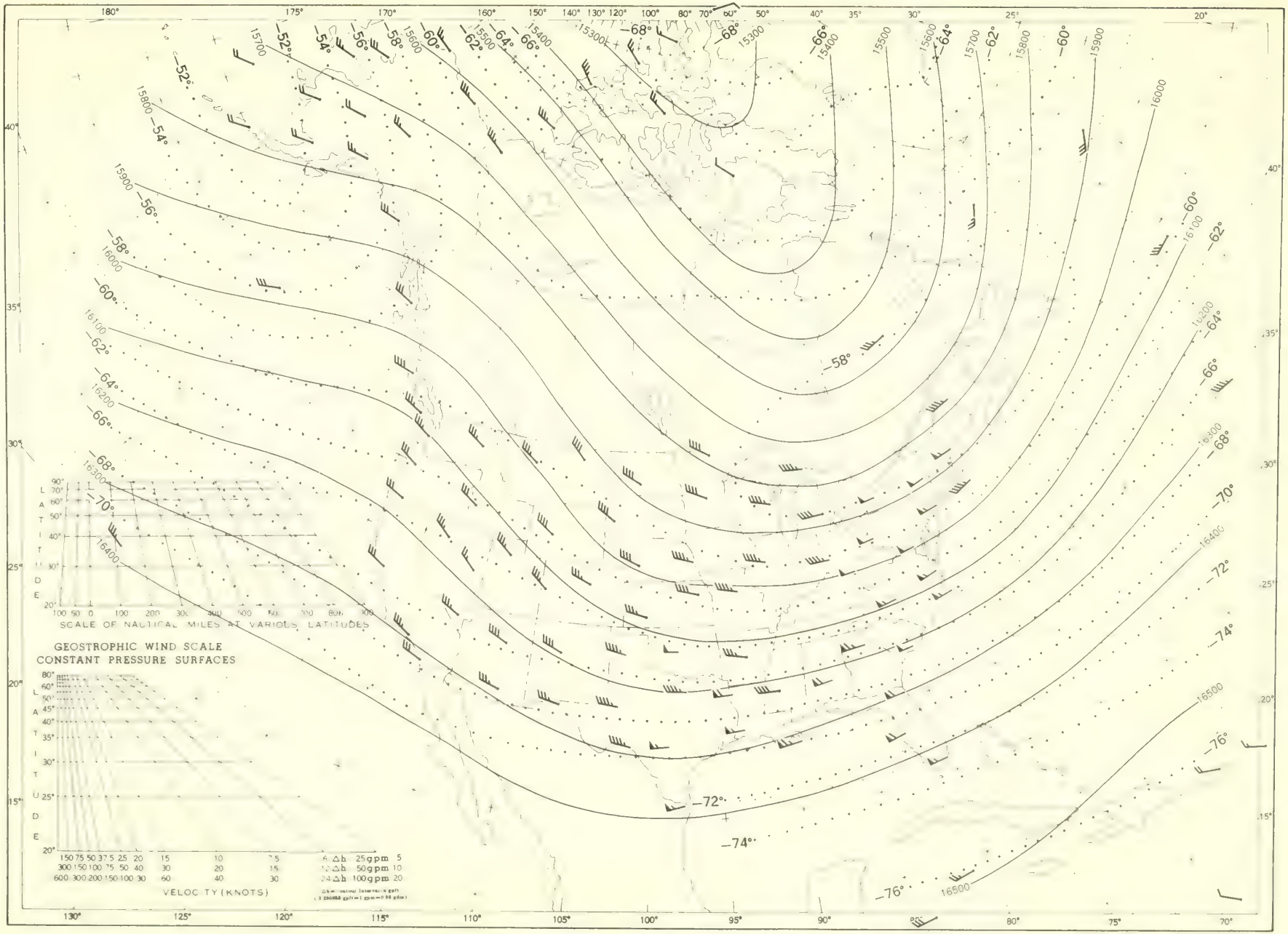
See Chart XI for explanation of map.

Chart XV. 200-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.



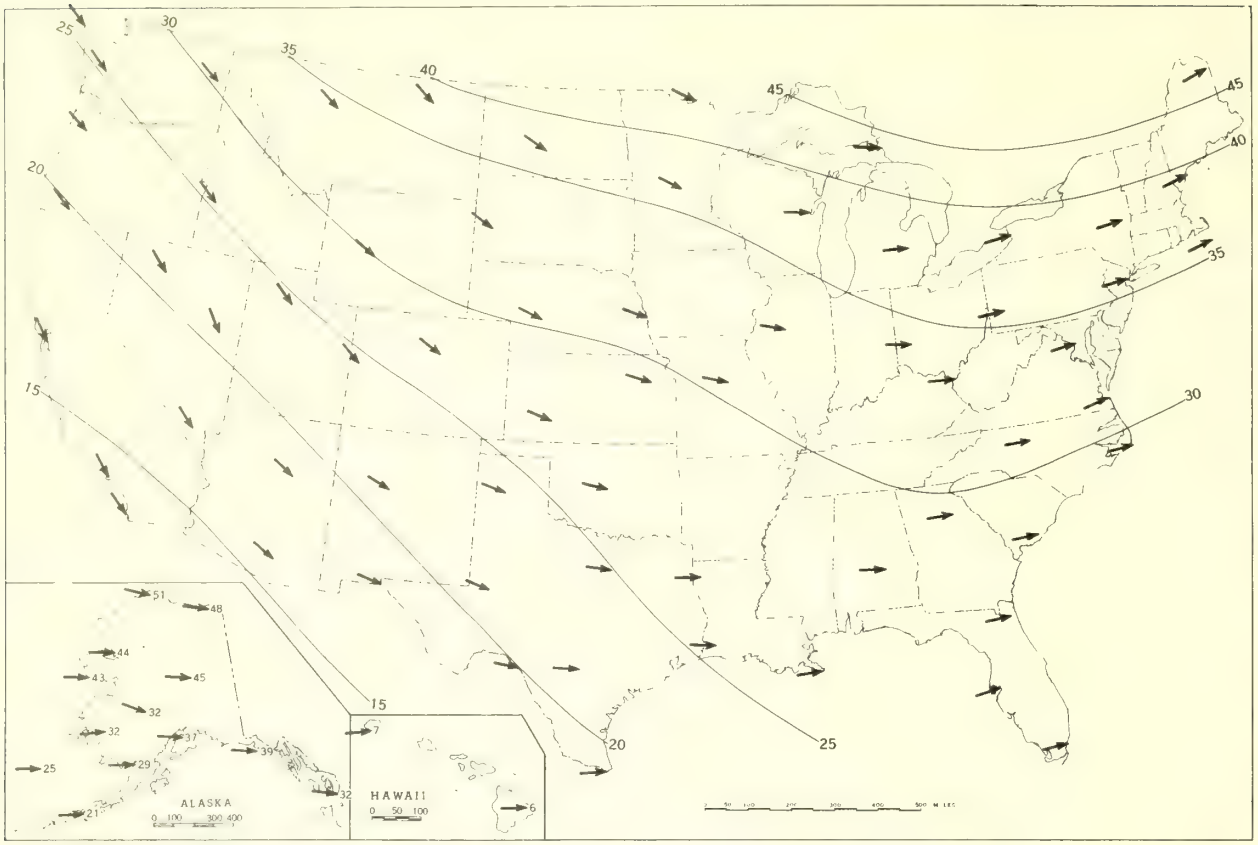
See Chart XI for explanation of map.

Chart XVI. 100-mb. Surface, 1200 GMT, December 1963. Average Height and Temperature, and Resultant Winds.

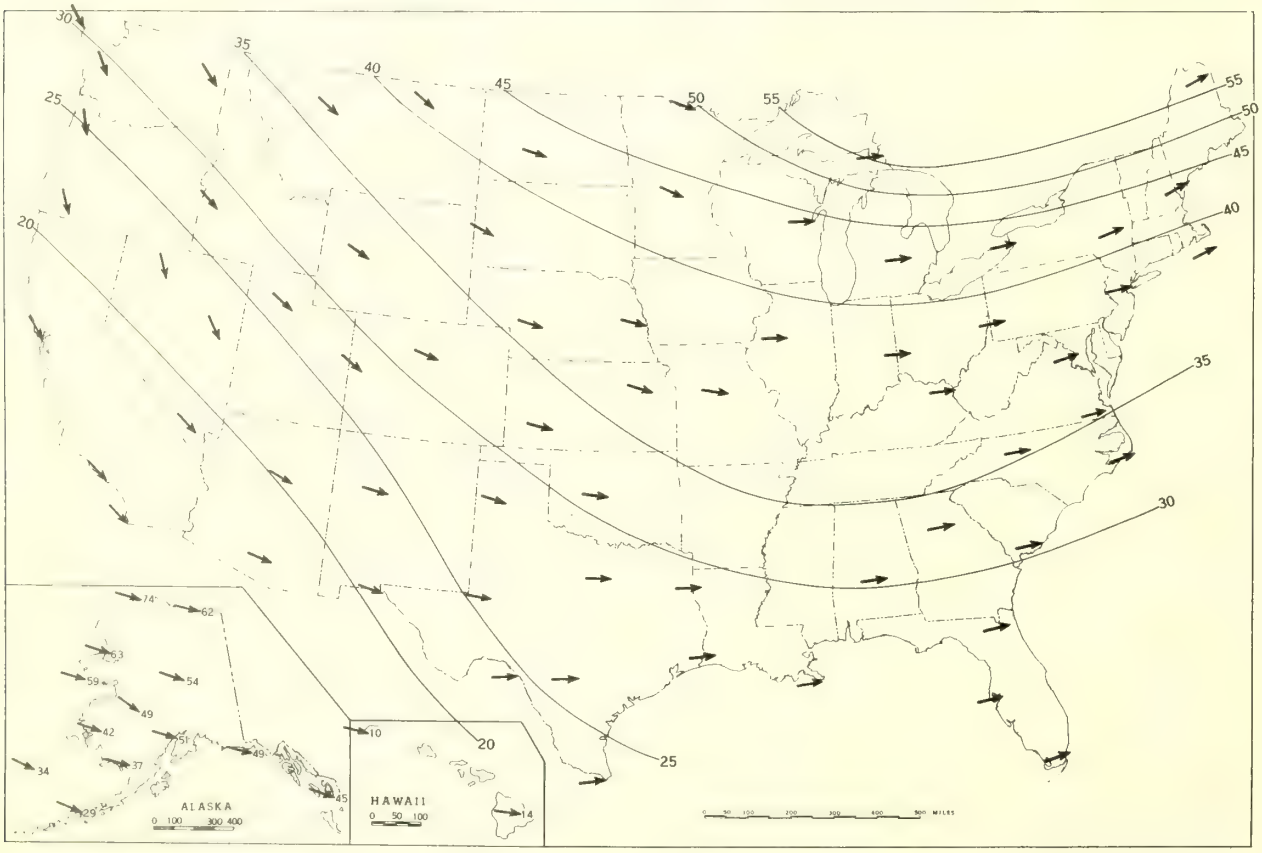


See Chart XI for explanation of map.

Chart XVII. A. 50-mb. Surface, 1200 GMT, December 1963. Resultant Winds.



B. 30-mb. Surface, 1200 GMT, December 1963. Resultant Winds.



Wind speed (isotachs) in knots. Arrows show resultant wind direction. All wind data are based on rawin observations.

USCOMM-WB-Asheville, N. C. -4/13/64-1825

U. S. DEPARTMENT OF COMMERCE
LUTHER H. HODGES, Secretary
WEATHER BUREAU
ROBERT M. WHITE, Chief

CLIMATOLOGICAL DATA

NATIONAL SUMMARY

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ANNUAL 1963
Volume ~~13~~ 14 No. 13

ASHEVILLE: 1964

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CLIMATOLOGICAL DATA

NATIONAL SUMMARY

Volume ~~13~~ 14 No. 13 ANNUAL 1963

GENERAL SUMMARY OF WEATHER CONDITIONS

L. H. Seamon, Climatology
Weather Bureau, Washington, D. C.

Cold weather during the first 2 months of 1963 resulted in one of the coldest winters from the Mississippi Valley to the Atlantic coast. Spring, based on average temperatures, was generally mild with wide fluctuations during the period, and precipitation ranged from heavy to unusually light. Summer temperatures, relative to normal, were cool in the East and Far West and mild in the midcontinent area, while precipitation, although timely, was generally below normal in the eastern half of the Nation and above normal in the Rocky Mountain States. A warm, dry autumn was followed by an extremely cold December with continued dryness in the Far Southwest and Midwest. Bumper crops were harvested despite weather setbacks in several areas due to severe winter freezes, late spring frosts, drought and, in the Far West, wet weather unfavorable for fruit pollination. Heaviest flood damage of the year occurred in the Ohio Valley, eastern Kentucky, and West Virginia in March. Autumn weather was favorable for full maturity of late crops and rapid harvesting operations. December was the coldest on record at many locations in the eastern half of the Nation.

With extremely cold, snowy weather in January and February, following a December notable for cold and snow, the winter of 1962-63 east of the Great Plains was one of the most severe during the past 100 years. This winter was the coldest on record at a number of locations in an area including Illinois, Indiana, Ohio, western Pennsylvania, and extending southward and southeastward almost to the Gulf of Mexico. Peoria, Ill.; Cleveland, Ohio; Pittsburgh, Pa.; Nashville and Chattanooga, Tenn.; Birmingham and Montgomery, Ala.; and Atlanta, Ga., all reported the coldest winter on record. Comparable severe winters during this century were those of 1935-36, 1917-18, and 1904-05. Ice covered 95 percent of Lakes Superior, Michigan, and Huron. Georgian Bay, Lake St. Clair, and Lake Erie were frozen over completely, except for some narrow open stretches in Lake Erie. By mid-January floating ice appeared in the Mississippi River as far south as Cape Girardeau, Mo. Lake Michigan was frozen over between Milwaukee, Wis., and Muskegon, Mich., from February 20 to the end of the month, the only other known occurrence having been in February 1936. The Susquehanna River was frozen over at Harrisburg, Pa., for 77 days, the longest period on record. Records indicate this to be the third coldest winter in the Great Lakes region since the turn of the century, being exceeded only by the winters of 1903-04 and 1917-18. Average temperatures for the winter were higher than normal in the Far West, even though January was unusually cold. The main weather concern there was one of the lightest snowfalls on record.

SPRING.--This season was a few degrees cooler than normal west of the Continental Divide and somewhat warmer than normal elsewhere. Precipitation was heavier than usual in much of the Far West, northern Great Plains, Tennessee, Kentucky, and parts of surrounding States. The season was unusually dry in the lower Rocky Mountain region and along the Gulf coast.

Unseasonably high temperatures east of the Rocky Mountains during the second half of March and the first week of April caused rapid melting of the great ice accumulations in northern lakes and streams and removed the snow cover east of the Rockies except in the woods of northern Maine. Before the warm spell, snow depths had ranged up to 50 inches in Maine and northern New York State.

Heavy March rains from the Ohio Valley to the northern portions of the Southern States caused flooding most of the month in the Ohio River, and in many southeastern streams for shorter periods. In Kentucky and the Virginias flood damage totaled many millions of dollars. Tornadoes were responsible for 15 injuries and heavy property damage in Bessemer, Ala., on March 5.

Heavy rain and snow in the Far West during March and April increased the mountain snow cover, replenished topsoil moisture, and greatly increased storage water in many reservoirs so that the warm season water outlook was much less gloomy than at the end of February. However, the cool, wet weather hampered agricultural and construction activities and logging operations. Mt. Shasta, Calif., had its coolest April in 34 years and its wettest since 1888. In contrast, April was among the hottest and driest in the midcontinent area where Kansas City had its driest April in 86 years. Many eastern sections also complained of dry weather, and several northeastern and southeastern sections were plagued by fires that burned over numerous tracts of grass, brush, and forests. A number of homes were burned in New Jersey.

May was a month of large temperature fluctuations, even though temperatures for the month averaged within a few degrees of normal. Washington, D. C., had its first May snowfall in 20 years. An early season heat wave the second week of May brought midsummer weather to the East. At Washington, D. C., 96° on the 9th was an early season record. A cold wave the fourth week in the midcontinent area reduced temperatures to record low levels for the season and caused some crop damage.

At the end of May, rain was needed in the lower Rocky Mountain region, the lower Great Plains, and Gulf coastal region.

SUMMER.--Temperatures for the summer (June-August) averaged above normal in the midcontinent area and below normal east of the Mississippi River and in the Far West. Temperatures fluctuated more than usual, however. Precipitation generally was adequate for crop growth. July rains over the middle and north Atlantic Coastal States helped relieve droughty conditions which developed during a hot, very dry June. In most of Virginia, however, good rains did not come until late August after crops had suffered severely.

In June a cool spell in the northeastern quarter of the Nation on the 22d reduced the temperature to 38° at Milwaukee, Wis., and 39° at Pittsburgh, Pa., record low temperatures for so late in June at both stations. This cool spell was followed by a heat wave that persisted from the 24th to the 27th at Boston, Mass., the longest there for June since 1946, and sent the mercury to 101° on the 30th at Marquette, Mich., equaling the June record. June rainfall ranged from near normal to record amounts in the Southeast and Far West to the least in many years at points in the central Great Plains and Northeast. Much needed rains fell in the South on the 16th and 17th and again on the 22d and 23d. Severe thunderstorms caused near $2 million damage in Grand Rapids, Mich., on the 9th and about $1 million in Denver, Colo., on the 15th. Fairbanks, Alaska, experienced its second coolest June.

Sharp temperature fluctuations continued during July in the northeast quarter of the Nation. Boston, Mass., reported its longest heat wave (24th-29th) in 19 years, while Hartford, Conn., reported the period of the 5th to 11th one of the coolest weeks in July since 1905. This was the coldest July at Knoxville, Tenn., in a record dating back to 1891. July was cool and wet in Washington and Oregon and abnormally cool and dry in most of the remainder of the Far West. Red Bluff, Calif., had a record low of 52° for July on the 2d, yet the mercury reached 90° or above on 9 days, the most since 1920. Farther south at Burbank, Calif., this was the first July since 1932 that the temperature failed to reach 90°.

August was much warmer than normal in the Northwest, warm and humid in the South, and quite cool in the Ohio Valley and Northeast. Precipitation was extremely spotty east of the Rockies, while very little fell in the West. This was the coolest August since 1912 at Burlington, Vt., and Portland, Maine, and since 1927 at Cleveland, Ohio, and Indianapolis, Ind.

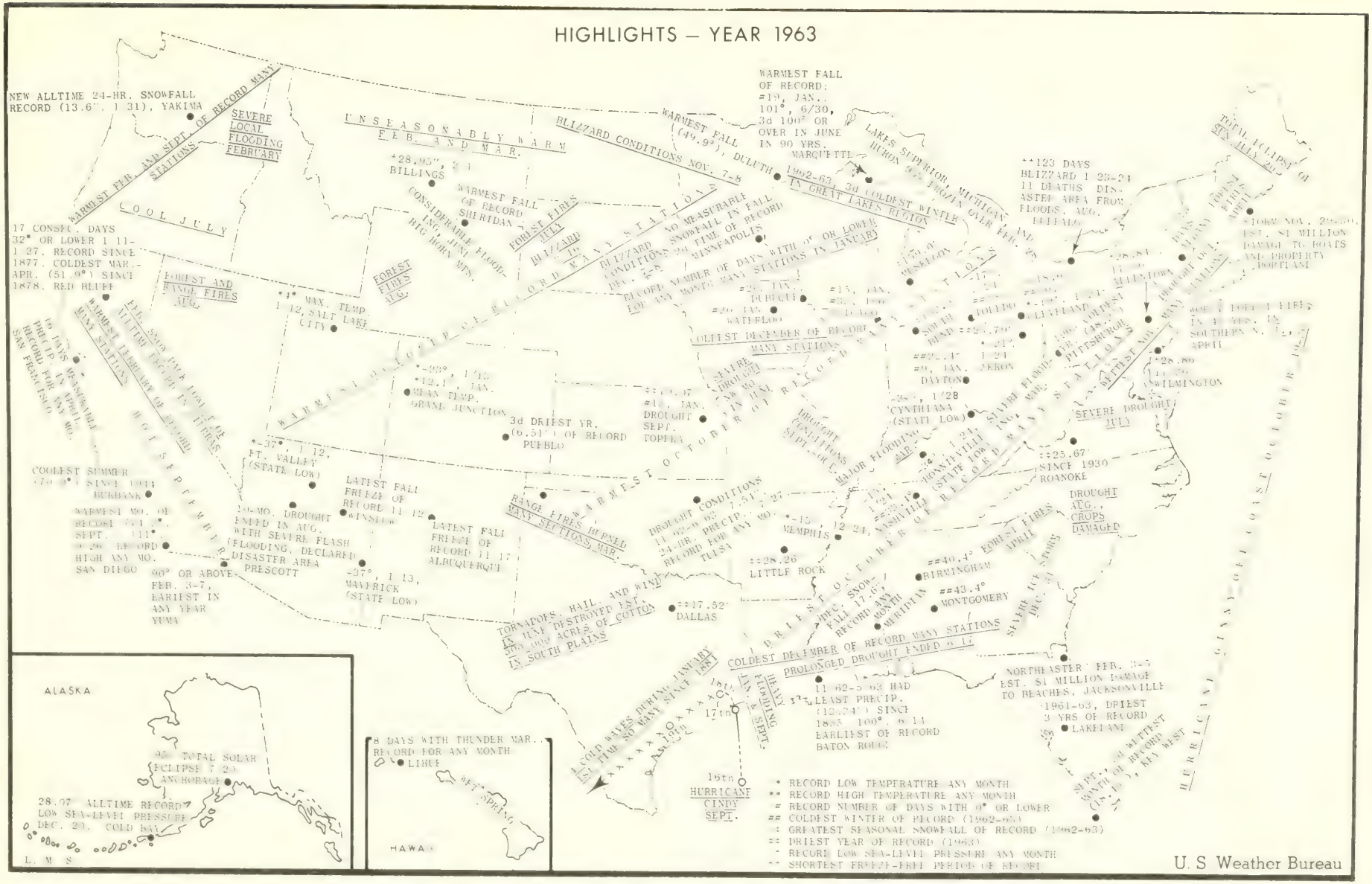
FALL.--Autumn was abnormally warm in nearly all the conterminous United States and unusually dry in the midcontinent and Rocky Mountain regions. Few autumns in our weather history have been so favorable for maturity of late crops and harvesting operations.

September was among the warmest of record in the Far West and also one of the wettest in some sections. For San Diego, Calif., September was the hottest month and 111° on the 26th was the highest temperature ever during a record dating back to 1871. In contrast the month was one of the coolest Septembers on the east coast and among the driest from the Great Lakes southwestward to Texas and southward to the Gulf. Hurricane Cindy brought heavy rain to the Texas-Louisiana coast on the 16th, 17th, and 18th, with totals in southeast Texas ranging up to over 24 inches. Flooding caused by the heavy rains was responsible for considerable damage in Texas.

October was remarkable for persistent abnormally warm, dry, sunny weather. Its weather was an extended period of summer, more popularly known as "Indian summer". Temperatures averaged above normal nearly everywhere, by as much as 12° in the upper Mississippi Valley. This was the warmest October in the midcontinent area where the previous warmest October was in 1947. Familar cities reporting their warmest October included Cheyenne, Wyo.; Oklahoma City, Okla.; Bismarck, N. Dak.; Little Rock, Ark.; Chicago, Ill.; and Detroit, Mich. In some northern and central interior locations the first fall freeze was the latest of record. The average October temperature for Detroit, Mich., was only 0.4° lower than that for September. Many stations in the East had their driest October and in many sections from Texas, Arkansas, and southern Missouri eastward over the Atlantic States, north of Florida, the drought was becoming serious. Some stations including Memphis, Tenn., had no measurable precipitation and Shreveport, La., had none at all. Persistent sunshine set new October records from Tennessee to New England, and Memphis, Tenn., recorded 97 percent of the possible amount. The warm, dry, sunny weather with low relative humidity created a high fire hazard, depleted soil moisture, and lowered the level of lakes and streams. Buffalo, N.Y., reported that even Lake Erie was 1 foot below its normal level. Hurricane Ginny threatened the Atlantic coast for 10 days the latter part of the month but caused little damage, and was responsible for much needed rains in the coastal Carolinas and eastern New England. This storm produced heavy snowfall in central and southern Maine -- 15 inches at Greenville.

November, like October, was unusually mild over nearly all the Nation, and was one of the 10 warmest Novembers on record in the midcontinent area, the Northeast, and northern Rockies. Precipitation was above normal on the Atlantic coast and in the Far West, and much below normal in the midcontinent area. Precipitation totals of 7 to over 8 inches set new records for the month at several northeastern stations. Snowfall was later than usual and some northern stations had none at all. Many stations in north-central areas had their warmest November since the 1930's. November was abnormally warm in Hawaii and cold in Alaska.

Extreme cold with extensive snow cover characterized the weather the last 3 weeks of December 1963. This was the fourth consecutive unusually cold December in the eastern half of the nation. Subzero temperatures were widespread in north-central areas from the 10th to the 23d, extending to southern Kansas on the 13th and 14th and into the Ohio and lower Mississippi Valleys a few days later. Memphis, Tenn., recorded -13° on the 24th, its lowest temperature ever. Freezing extended to the Gulf coast from the 14th through the 20th. Temperatures for the week ending the 15th averaged below normal at every station in the 48 conterminous States (a very rare occurrence), by as much as 25° in the northern Great Plains. Weekly averages of 20° at Denver, Colo., and -4° at Bismarck, N. Dak., may be compared with -3° at Barrow, Alaska, which is located north of the Arctic Circle. The following week ending the 22d averaged as much as 32° below normal in the Midwest and even Omaha, Nebr., with an average of -4° was 3° colder than Barrow, Alaska. December precipitation generally was light, although heavy from east Texas to the Atlantic coast. During the cold period snowfall was unusually heavy in parts of the South where the first white Christmas occurred in many years. Outstanding falls included 13 inches at Memphis, Tenn., on the 23d; a record December amount of 8 inches at Birmingham, Ala., on the 31st; and a record December fall of 21.7 inches at Huntsville, Ala., 16 inches of which fell on the 31st. New Orleans, La., had its third greatest snowfall of record, 4.5 inches on the 31st.


HIGHLIGHTS — YEAR 1963
NEW ALLTIME 24-HR. SNOWFALL RECORD (13.6", 1 31), YAKIMA
SEVERE LOCAL FLOODING FEBRUARY
WARMEST FEB. AND SEPT. OF RECORD MANY STATIONS
COOL JULY
17 CONSEC. DAYS 32° OR LOWER 1 11-1 27. RECORD SINCE 1877. COLDEST MAR.-APR. (51.9°) SINCE 1878, RED BLUFF
FOREST AND RANGE FIRES AUG.
FOREST FIRES AUG.
WARMEST FEBRUARY OF RECORD MANY STATIONS
FEB. SNOWFALL ALL-TIME RECORD IN STATIONS
10 DAYS MEASURABLE PRECIP IN APRIL, RECORD FOR ANY MO. SAN FRANCISCO
HOT SEPTEMBER
COOLEST SUMMER (70.0°) SINCE 1911, BURBANK
WARMEST MO. OF RECORD 77.1°, SEPT. 111°, 9 26 RECORD HIGH ANY MO. SAN DIEGO
90° OR ABOVE FEB. 3-7, EARLIEST IN ANY YEAR YUMA
UNSEASONABLY WARM FEB. AND MAR.
BLIZZARD CONDITIONS NOV. 7-8
WARMEST FALL (49.9°), DULUTH
WARMEST FALL OF RECORD, SHERIDAN
CONSIDERABLE FLOODING, HIGH WINDS, BIG HORN MTS.
FOREST FIRES JULY
BLIZZARD JULY
BLIZZARD CONDITIONS 2nd TIME OF RECORD DEC. 7-8
NO MEASURABLE SNOWFALL IN FALL MINNEAPOLIS
RECORD NUMBER OF DAYS WITH 0° OR LOWER FOR 48 CONT. STATIONS IN JANUARY
WARMEST OCTOBER OF RECORD MANY STATIONS
WARMEST FALL OF RECORD; 1°, JAN., 101°, 6/30, 3d 100° OR OVER IN JUNE IN 90 YRS. MARQUETTE
LAKES SUPERIOR, MICHIGAN, HURON AT RECORD LOWS OVER FEB. 25
1962-63, 3d COLDEST WINTER IN GREAT LAKES REGION
**123 DAYS BLIZZARD 1 23-24 11 DEATHS DISASTER AREA FROM FLOODS, AUG. BUFFALO
TOTAL ECLIPSE OF SUN JULY 20
STORM NOV. 29-30, EST. $1 MILLION DAMAGE TO BOATS AND PROPERTY PORTLAND
DROUGHT JULY
FOREST FIRES
SEVERE FLOODING MAR.
SEVERE DROUGHT JULY
FOREST FIRES APRIL
WILMINGTON
SEVERE DROUGHT JULY
*28.95", 2 1 BILLINGS
*4° MAX. TEMP. 1 12, SALT LAKE CITY
*-37°, 1 12, FT. VALLEY (STATE LOW)
*-53°, 1 15, *12.1°, JAN. MEAN TEMP. GRAND JUNCTION
3d DRIEST YR. (6.51") OF RECORD PUEBLO
LATEST FALL FREEZE OF RECORD 11 12 WINSLOW
LATEST FALL FREEZE OF RECORD 11 17 ALBUQUERQUE
30-MO. DROUGHT ENDED IN AUG. WITH SEVERE FLASH FLOODING, DECLARED DISASTER AREA PRESCOTT
-37°, 1 13, MAVERICK (STATE LOW)
RANGE FIRES BURNED MANY SECTIONS, MAR.
TORNADOES, HAIL, AND WIND IN JUNE DESTROYED EST. 250,000 ACRES OF COTTON IN SOUTH PLAINS
DROUGHT CONDITIONS SEPT.-OCT.
MAJOR FLOODING MAR.
DROUGHT CONDITIONS 11 62-6 63 PRECIP. 7.51", 24-HR. PRECIP. 7.27", RECORD FOR ANY MO. TULSA
*-15°, 12 24, MEMPHIS
**17.52° DALLAS
**28.26 LITTLE ROCK
**25.67 SINCE 1930 ROANOKE
DROUGHT AUG., CROPS DAMAGED
**40.4° BIRMINGHAM
**43.4° MONTGOMERY
DEC. SNOWFALL 17.6", RECORD ANY MONTH MERIDIAN
COLDEST DECEMBER OF RECORD MANY STATIONS
PROLONGED DROUGHT ENDED 6 17
SEVERE ICE STORMS DEC. 31
11 62-5 63 HAD LEAST PRECIP. (12.24") SINCE 1895, 100°, 6 11 EARLIEST OF RECORD BATON ROUGE
NORTHEASTER FEB. 3-5 EST. $1 MILLION DAMAGE TO BEACHES, JACKSONVILLE
1961-63, DRIEST 3 YRS OF RECORD LAKELAND
HEAVY FLOODING SEPT.
COLD WAVES DURING JANUARY 1ST TIME NO MANY SINCE 1887
16th HURRICANE CINDY SEPT.
17th
HERRICANE GINNY OFF COAST OCTOBER 1ST
WETTEST MONTH OF RECORD, KEY WEST
ALASKA
TOTAL SOLAR ECLIPSE 7 20
ANCHORAGE
28.07 ALLTIME RECORD LOW SEA-LEVEL PRESSURE DEC. 20, COLD BAY
L. M. S.
8 DAYS WITH THUNDER MAR., RECORD FOR ANY MONTH
LIHUE
HAWAII
* RECORD LOW TEMPERATURE ANY MONTH
** RECORD HIGH TEMPERATURE ANY MONTH
= RECORD NUMBER OF DAYS WITH 0° OR LOWER
COLDEST WINTER OF RECORD (1962-63)
: GREATEST SEASONAL SNOWFALL OF RECORD (1962-63)
== DRIEST YEAR OF RECORD (1963)
- RECORD LOW SEA-LEVEL PRESSURE ANY MONTH
-- SHORTEST FREEZE-FREE PERIOD OF RECORD
U. S Weather Bureau

EXCESSIVE PRECIPITATION

(Excessive Short Duration Rainfall)

YEAR 1963

This table contains statistics of maximum amounts of rainfall during the calendar year 1963. Data presented in this table are generally from stations equipped with recording gages. Stations are at City Office locations unless otherwise shown.

Excessive precipitation data for the years 1896-1935 inclusive, generally present the accumulated amounts of precipitation for each 5, 10, or 20 minute intervals during storms in which the rate of fall equaled or exceeded .25 inch in any 5 minute period, or .30 in any 10 minute period, or .35 in any 15 minute period, etc., the tabulation beginning with the 5 minute period where the rate of .05 inch in 5 minutes began and continuing by 10 or 20 minute intervals up to 120 minutes. A detailed explanation of the method used may be found in the publications listed in the last paragraph of this explanation.

The present method, adopted with data for the calendar year 1936, gives the maximum fall of precipitation for the periods 5 to 180 minutes, the maximum amounts being taken for the periods in which the fall is greatest for the given time, and is tabulated to show maximum amounts for 5, 10, 15, 20, 30, 45, 60, 80, 100, 120, 150 and 180 minutes, even if the fall does not equal the excessive rate for some of the periods. (The 15 minute amount was not computed for 1936-43 and the 150 minute amount was not computed for 1944 through 1948).

The following Table A shows limits at which precipitation was considered excessive in this publication:

TABLE A

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.25	60	.80
10	.30	80	1.00
15	.35	100	1.20
20	.40	120	1.40
30	.50	150	1.70
45	.65	180	2.00

This table is made up from the formula, A = t + 20 where A is the accumulated depth in hundredths of inches and t is the time in minutes.

For the years 1936 through 1948 stations in North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Arkansas, Louisiana, Texas, Oklahoma, and San Juan, P. R. used the limits shown in the following Table B:

TABLE B

Duration (minutes)	Depth of precipitation (inches)	Duration (minutes)	Depth of precipitation (inches)
5	.40	60	1.50
10	.50	80	1.90
15	.60	100	2.30
20	.70	120	2.70
30	.90	150	3.30
45	1.20	180	3.90

This table is made up from the formula A = 2t + 30. Its use, however, was discontinued at the end of 1948 and Table A is used by all sections for 1949 and the following years.

Publication of Data. A summary of maximum precipitation data for the years prior to 1896 is published in the annual report of the Chief of the Weather Bureau for 1895-1896. Excessive precipitation data for the period 1881-1896 are published in the annual report of the Chief of the Weather Bureau 1896-1897. Data for the years 1897 through 1934 have been published in the appropriate annual reports of the Chief of the Weather Bureau. For the years 1935 through 1949 these data are published in the appropriate issue of the United States Meteorological Yearbook. For 1950 and succeeding years excessive precipitation are presented in the annual issues of the Climatological Data, National Summary.

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ALABAMA												
BIRMINGHAM												
JAN 19	.21	.41	.48	.64	.90	1.03	1.15	1.20	1.32	1.44	1.65	1.85
MAR 5	.43	.56	.62	.70	.81	.86	.92	.97	1.26	1.39	1.52	1.75
MAR 12	.44	.65	.70	.91	1.17	1.20	1.23	1.26	1.27	1.29	1.33	1.35
MAR 19	.29	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
APR 29	.31	.57	.59	.61	.65	.71	.81	1.00	1.25	1.33	1.36	1.41
MAY 17	.46	.63	.65	.66	.66	.67	.67	.67	.79	.80	.81	.86
MAY 22	.22	.33	.38	.43	.49	.56	.59	.60	.63	.63	.63	.63
MAY 27	M	M	M	M	M	M	1.28	1.29	1.29	1.30	1.31	1.32
JUN 23	.39	.69	.81	1.04	1.12	1.16	1.17	1.18	1.19	1.19	1.19	1.19
JUN 29	.60	.92	1.07	1.37	2.04	2.75	3.02	3.22	3.28	3.30	3.30	3.30
JUL 24	.15	.27	.38	.52	.68	.74	.81	.86	.91	.95	.96	.96
JUL 30	.30	.52	.62	.85	1.20	1.32	1.34	1.35	1.36	1.36	1.36	1.36
AUG 13	.33	.38	.42	.56	.68	.70	.71	.72	.78	.79	.90	1.27
HUNTSVILLE												
MAR 5	.16	.30	.36	.37	.38	.41	.43	.43	.44	.44	.48	.54
MAR 11	.24	.42	.61	.75	1.10	1.68	1.79	2.25	M	M	M	M
MAR 12	.21	.36	.47	.56	.73	.89	1.00	1.01	1.12	1.16	1.32	1.72
APR 29	.20	.30	.38	.43	.50	.58	.62	.70	.76	.81	.85	.88
APR 29	.20	.40	.50	.55	.67	.97	1.12	1.26	1.26	1.26	1.26	1.26
JUN 20	.20	.40	.50	.60	.89	1.15	1.34	1.47	1.55	1.59	1.59	1.59
JUN 28	.24	.46	.67	.90	1.11	1.30	1.32	1.32	1.32	1.32	1.32	1.32
JUL 18	.25	.43	.55	.64	.76	.82	.83	.83	.83	.84	.84	.84
JUL 20	.26	.47	.67	.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
JUL 23	.38	.70	.94	1.30	1.45	1.70	1.84	1.85	1.87	1.89	1.90	1.90
AUG 29	.16	.28	.41	.44	.45	.45	.45	.46	.46	.46	.46	.46
MOBILE												
JAN 11	.25	.40	.50	.65	1.00	1.25	1.30	1.40	1.40	1.50	1.50	1.65
JAN 19	.28	.53	.75	.98	1.17	1.51	1.88	2.04	2.17	2.40	2.53	2.61
APR 6	.35	.65	.81	.95	1.27	1.50	1.60	1.69	1.75	1.77	1.77	1.77
JUN 18	.21	.41	.43	.55	.67	.85	1.15	1.40	1.60	2.00	2.14	2.15
JUN 20	.33	.41	.43	.48	.50	.57	.64	.65	.68	.71	.73	.80
JUN 24	.55	.80	.90	1.01	1.18	1.23	1.26	1.27	1.31	1.33	1.36	1.37
JUN 26	.22	.37	.41	.42	.45	.45	.45	.45	.45	.45	.45	.45
JUL 1	.55	.70	.75	.95	1.30	1.48	1.52	1.53	1.53	1.53	1.53	1.53
JUL 8	.32	.35	.35	.35	.35	.35	.35	.35	.37	.39	.41	.41
JUL 9	.30	.50	.60	.63	.87	1.05	1.18	1.63	1.72	1.77	1.77	1.77
JUL 25	.20	.40	.41	.50	.64	.70	.72	.78	.85	.92	1.00	1.10
JUL 31	.30	.42	.42	.43	.43	.43	.43	.43	.43	.43	.43	.43
AUG 20	.29	.50	.53	.64	.71	.78	.80	.80	.81	.83	.98	1.00
AUG 23	.31	.44	.54	.56	.56	.56	.56	.56	.82	.90	.90	.90
AUG 29	.55	.80	.95	1.40	2.05	2.58	2.83	2.94	2.95	2.95	2.95	2.95
AUG 30	.35	.65	.71	.86	1.35	1.43	1.58	1.60	1.60	1.60	1.60	1.65
NOV 1	.30	.45	.48	.53	.55	.55	.55	.55	.55	.55	.55	.55
NOV 23	.20	.35	.53	.65	.95	1.35	1.80	1.88	1.88	1.91	1.91	1.92
MONTGOMERY												
MAR 26	.25	.35	.44	.52	.65	.72	.75	.76	.76	.76	.76	.76
MAY 26	.47	.68	.73	.73	.74	.77	.78	.78	.78	.78	.78	.78
MAY 27	.22	.33	.43	.55	.82	1.05	1.30	1.32	1.35	1.35	1.35	1.35
JUN 19	.16	.31	.40	.48	.53	.57	.58	.59	.60	.62	.64	.66
JUN 22	.27	.43	.65	.80	.92	.94	.94	.94	.97	1.09	1.12	1.12
JUN 23	.25	.46	.70	.91	1.20	1.50	1.50	1.50	1.50	1.50	1.50	1.50
JUL 3	.24	.33	.49	.55	.61	.63	.63	.63	.63	.63	.63	.63
JUL 16	.35	.48	.56	.61	.67	.72	.73	.74	.74	.74	.74	.74
JUL 17	.19	.26	.35	.46	.66	.88	.96	.96	.96	.96	.96	.96
AUG 20	.31	.58	.72	.78	.95	1.00	1.10	1.12	1.12	1.12	1.12	1.12
DEC 11	.20	.38	.50	.53	.58	.68	.76	.95	1.02	1.11	1.30	1.42
ALASKA												
ANCHORAGE						NONE						
ANNETTE												
OCT 31	.16	.32	.38	.44	.50	.58	.66	.72	.80	.82	.87	.98
COLD BAY						NONE						
CORDOVA						NONE						
FAIRBANKS						NONE						
JUNEAU						NONE						
KING SALMON						NONE						
MC GRATH						NONE						
ST. PAUL ISLAND						NONE						
YAKUTAT												
OCT 7	.21	.34	.39	.43	.61	.91	1.14	1.26	1.37	1.44	1.94	2.27
ARIZONA												
FLAGSTAFF												
AUG 2	.50	.65	.77	.87	1.25	1.71	1.71	1.71	1.71	1.71	1.71	1.71
AUG 17	.20	.27	.37	.48	.53	.58	.64	.70	.70	.71	.71	.71
AUG 31	.30	.42	.43	.52	.57	.59	.61	.62	.70	.70	.70	.70
PHOENIX												
FEB 10	.26	.41	.43	.44	.44	.44	.44	.44	.44	.44	.45	.51
AUG 5	.25	.32	.34	.36	.37	.64	.70	.73	.75	.77	.80	.82
AUG 31	.23	.40	.45	.45	.46	.47	.47	.47	.47	.47	.47	.47
OCT 19	.30	.50	.53	.55	.58	.60	.66	.71	.72	.73	.73	.73
PRESCOTT						NONE						
TUCSON												
AUG 2	.25	.42	.53	.61	.64	.64	.68	.68	.68	.68	.68	.68
AUG 15	.21	.36	.40	.43	.52	.59	.59	.59	.59	.59	.59	.61
SEP 4	.26	.44	.59	.67	.75	.76	.77	.77	.77	.77	.77	.77
WINSLOW												
AUG 7	.30	.41	.47	.49	.57	.57	.57	.57	.57	.57	.57	.57
AUG 21	.25	.43	.54	.60	.75	1.00	1.13	1.13	1.13	1.13	1.13	1.13
AUG 25	.29	.37	.40	.40	.40	.41	.42	.42	.42	.42	.42	.42
AUG 30	.19	.35	.38	.42	.44	.44	.44	.44	.44	.44	.44	.44
AUG 31	.25	.45	.57	.60	.61	.61	.61	.62	.65	.65	.65	.65
YUMA												
SEP 17	.40	.73	.85	1.04	1.31	1.46	2.04	2.31	2.36	2.40	2.42	2.42

M No record

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ARKANSAS												
FORT SMITH												
MAR 16	.24	.36	.38	.42	.46	.50	.51	.51	.51	.51	.51	.51
MAR 26	.27	.42	.47	.48	.53	.66	.80	.88	.90	.91	.94	.96
MAY 5	.23	.39	.40	.40	.41	.42	.44	.45	.51	.80	.83	.85
JUN 19	.60	1.15	1.20	1.26	1.38	1.49	1.51	1.54	1.73	1.75	1.78	1.79
JUN 19	.38	.67	.68	.81	.85	.85	.85	.86	.86	.87	.88	.95
JUL 14	.32	.64	.69	.88	1.32	1.75	2.09	2.36	2.53	2.61	2.65	2.67
JUL 26	.47	.90	1.13	1.55	1.67	1.76	1.87	1.87	1.87	1.87	1.87	1.87
SEP 11	.30	.55	.65	.90	1.01	1.02	1.02	1.02	1.02	1.02	1.16	1.18
LITTLE ROCK												
JUL 14	.25	.33	.37	.43	.55	.73	.91	1.01	1.02	1.05	1.14	1.37
JUL 20	.30	.50	.58	.60	.60	.62	.62	.62	.62	.62	.62	.62
JUL 30	.25	.45	.55	.70	1.07	1.14	1.18	1.19	1.19	1.19	1.19	1.19
SEP 5	.17	.27	.43	.54	.64	.64	.64	.64	.64	.64	.64	.64
SEP 7	.17	.25	.38	.42	.54	.55	.72	.80	.80	.80	.80	.80
NOV 22	.30	.35	.60	.63	.66	.75	1.16	1.28	1.35	1.44	1.45	1.50
TEXARKANA												
APR 28	.32	.60	.92	1.20	1.63	1.75	1.81	1.91	1.97	2.05	2.18	2.40
MAY 22	.16	.32	.45	.60	.82	1.17	1.54	1.90	2.19	2.34	2.55	2.70
MAY 27	.20	.35	.46	.50	.57	.60	.97	1.09	1.22	1.31	1.39	1.46
JUN 16	.48	.85	1.08	1.23	1.30	1.40	1.40	1.41	1.43	1.43	1.43	1.43
JUN 19	.42	.72	1.01	1.27	1.42	1.46	1.49	1.56	1.56	1.56	1.56	1.60
JUN 20	.30	.46	.56	.60	.62	.62	.62	.62	.64	.64	.64	.64
JUN 20	.23	.43	.60	.72	.87	.93	.93	.94	.95	.95	.95	1.00
JUL 8	.35	.65	.78	.95	1.28	1.43	1.43	1.43	1.43	1.43	1.43	1.43
AUG 30	.45	.78	.91	.95	1.09	1.38	1.59	1.78	1.78	1.81	1.87	1.94
CALIFORNIA												
BAKERSFIELD												
FEB 13	.30	.40	.50	.55	.58	.59	.61	.61	.61	.63	.65	.66
BISHOP						NONE						
BLUE CANYON												
JUN 13	.20	.35	.35	.35	.40	.42	.42	.42	.42	.42	.42	.42
BURBANK						NONE						
EUREKA U						NONE						
FRESNO						NONE						
LOS ANGELES U						NONE						
MT SHASTA R												
JUN 16	.15	.30	.44	.55	.55	.55	.55	.61	.61	.61	.61	.61
JUN 18	.28	.38	.43	.50	.72	.72	.72	.72	.72	.72	.72	.72
OAKLAND						NONE						
RED BLUFF												
APR 9	.38	.61	.64	.66	.67	.69	.69	.70	.70	.70	.70	.71
SACRAMENTO												
MAR 28	.13	.24	.33	.38	.58	.74	.79	.80	.83	.86	.86	.86
SACRAMENTO U						NONE						
SANDBERG R						NONE						
SAN DIEGO						NONE						
SAN FRANCISCO						NONE						
SAN FRANCISCO U						NONE						
SANTA MARIA						NONE						
COLORADO												
ALAMOSA						NONE						
DENVER												
JUL 9	.22	.37	.38	.39	.41	.42	.42	.42	.42	.42	.42	.42
GRAND JUNCTION						NONE						
PUEBLO												
AUG 9	.31	.40	.46	.53	.58	.60	.62	.70	.72	.72	.74	.76
CONNECTICUT												
BRIDGEPORT												
JUL 21	.42	.71	.87	1.13	1.71	2.07	2.24	2.46	2.49	2.52	2.57	2.61
HARTFORD												
JUN 20	.12	.21	.25	.31	.50	.67	.77	.83	.85	.88	.90	.94
JUN 28	.33	.54	.60	.75	.82	.83	.89	1.00	1.10	1.18	1.29	1.36
JUL 2	.20	.36	.38	.43	.45	.49	.53	.55	.55	.55	.55	.55
NEW HAVEN												
JUN 30	.31	.53	.75	.95	1.07	1.12	1.23	1.30	1.30	1.30	1.30	1.30
JUL 19	.31	.42	.43	.43	.43	.43	.43	.43	.55	.59	.59	.60
NOV 7	.32	.53	.63	.72	.85	1.11	1.27	1.40	1.50	1.67	1.89	2.17
DELAWARE												
WILMINGTON												
JUN 10	.27	.48	.52	.53	.54	.56	.56	.56	.56	.56	.56	.56
JUN 10	.38	.70	.82	.87	.90	.94	.97	.97	.97	.97	.98	.99
JUL 29	.42	.72	.84	.96	.96	.96	.96	.96	.96	.96	.96	.96
AUG 1	.26	.49	.75	.81	.86	.87	.88	.89	.89	.89	.90	.92
AUG 4	.26	.38	.52	.54	.62	.65	.68	.70	.75	.77	.77	.77
AUG 20	.26	.36	.40	.47	.51	.53	.57	.63	.70	.76	.86	.87
DIST. OF COLUMBIA												
WASH NATL AP												
JUN 20	.44	.77	.87	.94	.95	1.06	1.09	1.19	1.29	1.30	1.30	1.30
JUL 19	.28	.36	.42	.44	.44	.44	.44	.44	.44	.44	.44	.56
AUG 20	.50	.98	1.10	1.48	1.90	2.30	M	M	3.73	3.79	3.87	3.89

M No record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
DIST. OF COLUMBIA												
WASHINGTON U												
JUN 14	.30	.47	.47	.47	.47	.47	.47	.47	.52	.67	.67	.67
JUN 20	.51	.92	1.00	1.10	1.37	1.72	1.81	1.83	1.90	2.00	2.01	2.01
JUN 29	.35	.68	.72	.80	.82	.85	.88	.90	1.05	1.20	1.50	1.95
AUG 19	.32	.49	.54	.73	1.04	1.25	1.34	1.35	1.36	1.38	1.39	1.42
AUG 20	.48	.70	.80	.95	1.50	1.78	1.87	2.23	2.40	2.50	2.81	2.87
FLORIDA												
APALACHICOLA U												
FEB 11	.36	.48	.75	.86	1.09	1.22	1.28	1.31	1.39	1.45	1.60	1.75
MAY 23	.29	.57	.77	.89	1.11	1.13	1.13	1.14	1.17	1.17	1.17	1.17
JUN 9	.13	.25	.35	.43	.63	.80	.92	.93	.93	.94	.94	.94
JUN 20	.25	.44	.51	.56	.56	.56	.56	.56	.56	.56	.56	.56
JUN 23	.23	.35	.50	.60	.69	.70	.70	.70	.70	.70	.70	.70
JUL 9	.39	.51	.52	.53	.55	.61	.65	.89	.89	1.22	1.32	1.52
JUL 22	.39	.71	.83	.90	.91	1.04	1.21	1.36	1.51	1.70	2.41	2.48
JUL 23	.34	.67	.89	1.03	1.10	1.42	1.51	1.56	1.60	1.65	1.77	1.81
JUL 24	.63	1.06	1.16	1.22	1.29	1.61	1.79	2.53	2.70	2.70	2.70	2.76
JUL 25	.35	.54	.69	.88	.95	.95	.99	.99	1.03	1.03	1.03	1.03
AUG 14	.24	.45	.60	.70	.79	.84	1.10	1.17	1.37	1.37	1.41	1.44
AUG 14	.32	.53	.53	.53	.54	.54	.54	.54	.54	.54	.54	.54
AUG 17	.16	.29	.40	.48	.54	.70	.78	.79	.79	.79	.79	.79
SEP 1	.33	.59	.77	.84	.91	.94	.95	.98	.98	.98	.98	.98
SEP 2	.33	.46	.55	.60	.95	1.00	1.01	1.04	1.10	1.55	1.59	1.59
SEP 28	.40	.62	.72	.85	1.05	1.24	1.35	1.55	1.80	2.22	2.30	2.56
DAYTONA BEACH												
JAN 21	.20	.34	.37	.44	.46	.46	.47	.55	.56	.56	.56	.56
FEB 12	.25	.31	.45	.55	.65	.76	.83	.90	.97	1.05	1.17	1.25
FEB 24	.35	.43	.44	.45	.52	.59	.60	.60	.60	.60	.60	.60
APR 7	.24	.34	.34	.36	.39	.44	.45	.46	.51	.51	.53	.53
MAY 1	.15	.27	.36	.45	.50	.65	.74	.80	.83	.84	.86	.86
MAY 24	.25	.45	.70	.82	.93	1.25	1.48	1.55	1.55	1.56	1.58	1.59
MAY 24	.20	.32	.35	.37	.44	.48	.53	.57	.62	.66	.70	.73
MAY 29	.25	.35	.48	.70	.86	.87	.88	.88	.88	.89	.90	.90
MAY 30	.17	.30	.36	.39	.40	.40	.40	.40	.40	.40	.40	.40
MAY 31	.15	.30	.36	.40	.65	.79	.85	.87	.88	.89	.91	.92
JUN 26	.26	.52	.77	1.00	1.27	1.33	1.39	1.41	1.57	2.17	2.47	2.48
JUN 28	.37	.74	1.07	1.35	1.73	2.19	2.46	2.74	2.80	2.84	2.90	2.93
JUL 5	.30	.50	.52	.57	.58	.58	.58	.58	.58	.58	.58	.58
JUL 15	.20	.30	.31	.35	.55	.57	.58	.59	.60	.60	.62	.65
JUL 21	.20	.33	.40	.43	.44	.44	.45	.56	.58	.60	.63	.65
JUL 24	.45	.80	1.02	1.26	1.50	1.57	1.64	1.72	1.78	1.80	1.82	1.82
AUG 16	.25	.44	.60	.77	1.00	1.15	1.18	1.19	1.19	1.19	1.19	1.19
SEP 23	.25	.47	.69	.76	.86	1.09	1.20	1.26	1.34	1.45	1.47	1.50
SEP 23	.26	.32	.34	.37	.44	.46	.47	.49	.50	.53	.56	.56
OCT 8	.18	.27	.35	.40	.47	.48	.53	.55	.56	.56	.56	.65
OCT 10	.27	.52	.54	.56	.57	.57	.57	.57	.57	.57	.57	.57
NOV 26	.42	.62	.77	1.07	1.42	1.97	2.62	2.92	3.22	3.32	3.36	3.54
FORT MYERS												
MAY 3	.30	.42	.52	.68	.95	1.12	1.22	1.31	1.38	1.46	1.55	1.77
MAY 13	.26	.34	.34	.36	.37	.40	.54	.63	.64	.64	.64	.64
MAY 21	.45	.65	.87	1.07	1.23	1.33	1.37	1.37	1.37	1.37	1.37	1.37
MAY 24	.30	.45	.50	.59	.65	.70	.79	.79	.79	.79	.79	.79
MAY 27	.50	.80	1.00	1.35	1.80	1.93	1.97	1.98	1.98	1.98	1.98	1.98
JUN 2	.20	.34	.41	.44	.47	.50	.50	.50	.50	.50	.50	.50
JUN 4	.25	.45	.48	.55	.70	.95	1.02	1.20	1.33	1.33	1.33	1.33
JUN 5	.30	.50	.55	.70	.75	.80	1.05	1.06	1.06	1.06	1.06	1.06
JUN 14	.59	1.02	1.13	1.59	1.73	1.75	1.76	1.76	1.77	1.77	1.77	1.77
JUN 20	.40	.73	.90	.98	1.03	1.04	1.05	1.05	1.05	1.05	1.05	1.05
JUL 15	.20	.38	.50	.55	.78	.85	.85	.85	.85	.85	.85	.87
JUL 16	.38	.60	.65	.70	.75	.75	.80	1.20	1.21	1.21	1.21	1.21
JUL 29	.30	.52	.58	.81	.95	.98	.98	.98	.98	.98	.98	.98
AUG 2	.28	.48	.51	.68	.95	.97	.97	.97	.97	.97	.97	.97
AUG 20	.43	.86	1.28	1.42	1.44	1.45	1.45	1.45	1.60	1.62	1.62	1.65
SEP 10	.35	.65	.72	.72	.74	.75	.75	.75	.75	.75	.75	.75
SEP 17	.35	.65	.74	.90	1.25	1.35	1.37	1.38	1.39	1.39	1.39	1.39
SEP 20	.25	.35	.40	.40	.42	.43	.43	.43	.46	.62	.63	.87
SEP 22	.16	.32	.36	.48	.70	.76	.77	.85	.95	.97	1.09	1.20
NOV 10	.31	.61	.83	.98	1.40	1.55	1.66	1.75	1.86	1.90	2.03	2.08
DEC 31	.25	.37	.42	.50	.55	.56	.58	.60	.60	.60	.60	.60
JACKSONVILLE												
JAN 12	.27	.50	.63	.80	1.04	1.13	1.16	1.18	1.18	1.18	1.18	1.18
JAN 20	.22	.27	.38	.48	.59	.70	.70	.71	.71	.71	.71	.71
FEB 3	.15	.24	.34	.37	.47	.68	.79	.92	1.02	1.09	1.19	1.26
APR 6	.31	.47	.51	.58	.62	.63	.66	.67	.67	.67	.67	.68
APR 7	.30	.43	.47	.50	.51	.51	.51	.51	.51	.51	.51	.51
MAY 29	.22	.25	.39	.47	.49	.49	.49	.56	.56	.56	.57	.57
JUN 11	.21	.41	.53	.61	.64	.65	.65	.65	.65	.65	.65	.65
JUN 12	.26	.46	.68	.89	1.03	1.03	1.03	1.05	1.05	1.06	1.06	1.06
JUN 15	.21	.35	.42	.46	.65	.71	.73	.74	.74	.74	.74	.74
JUN 18	.36	.46	.47	.55	.57	.57	.57	.57	.57	.57	.57	.57
JUN 22	.17	.28	.39	.54	.64	.72	.76	.83	.89	.94	.98	.99
JUN 23	.50	.84	1.16	1.34	1.41	1.44	1.47	1.55	1.57	1.59	1.64	1.66
JUN 26	.31	.51	.64	.74	.75	.75	.75	.75	.75	.80	1.10	1.49
JUN 29	.20	.31	.48	.52	.60	.70	.78	.83	.85	.86	.87	.87
JUN 30	.24	.33	.39	.46	.54	.57	.58	.58	.58	.59	.59	.59
JUL 7	.52	1.01	1.37	1.69	1.81	1.81	1.81	1.81	1.95	1.96	2.01	2.03
JUL 22	.31	.45	.48	.69	.77	.80	.81	.84	.86	.87	.88	.88
JUL 24	.46	.81	1.13	1.37	1.64	1.75	1.81	1.85	1.88	1.92	2.05	2.20
AUG 14	.31	.49	.64	.70	.76	.77	.78	.78	.78	.78	.78	.78
DEC 13	.24	.45	.53	.57	.66	.70	.72	.76	.77	.79	.79	.79
KEY WEST												
MAY 24	.34	.68	.88	1.07	1.65	2.05	2.05	2.05	2.05	2.05	2.05	2.05
JUN 2	.27	.28	.29	.32	.56	.59	.76	.78	.79	.82	.82	.82
JUN 4	.25	.34	.38	.44	.58	.58	.58	.58	.58	.58	.58	.58
JUN 6	.50	.74	.92	1.06	1.35	1.39	1.39	1.39	1.39	1.39	1.39	1.39
JUN 12	.30	.36	.42	.42	.42	.42	.44	.71	.71	.71	.71	.71
JUL 12	.26	.30	.40	.42	.52	.64	.66	.66	.66	.66	.66	.66
AUG 5	.24	.33	.40	.45	.60	.85	.88	.90	.96	.97	.97	.97
AUG 5	.30	.37	.55	.58	.61	.62	.62	.62	.62	.62	.63	.63
AUG 20	.50	.82	.97	1.02	1.06	1.12	1.40	1.49	1.49	1.59	1.63	1.65
AUG 25	.28	.36	.39	.41	.42	.42	.43	.51	.52	.52	.52	.52
AUG 26	.42	.65	.72	.78	.80	.81	.81	.81	.81	.81	.81	.81
AUG 29	.21	.30	.50	.60	.66	.70	.71	.71	.71	.71	.71	.76
SEP 9	.50	.70	.86	.99	1.08	1.10	1.50	1.51	2.40	2.60	2.64	2.64
SEP 19	.18	.30	.43	.48	.66	.69	.69	.69	.69	.70	.71	.74
SEP 19	.39	.54	.60	.64	.66	.71	.75	.79	.86	.92	1.27	1.32
SEP 20	.25	.41	.42	.51	.65	.96	1.23	1.33	1.57	1.71	2.02	2.43
SEP 22	.26	.42	.50	.60	.91	1.00	1.02	1.02	1.02	1.02	1.02	1.02
SEP 24	.22	.40	.41	.42	.43	.43	.43	.43	.43	.43	.43	.43
SEP 24	.26	.49	.55	.56	.74	.78	.78	.78	.79	.79	1.07	1.10

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA												
KEY WEST												
SEP 24	.49	.64	.84	1.06	1.16	1.17	1.17	1.17	1.17	1.17	1.17	1.17
SEP 25	.20	.39	.47	.49	.51	.51	.51	.51	.52	.52	.52	.52
OCT 1	.24	.44	.47	.48	.49	.51	.52	.60	.64	.66	.68	.71
NOV 4	.36	.45	.59	.70	.82	1.07	1.20	1.35	1.50	1.62	1.70	1.79
SEP 20	.52	.80	.89	1.05	1.44	1.69	1.72	2.04	2.12	2.14	2.15	2.19
NOV 4	.40	.70	.89	.95	1.01	1.15	1.21	1.27	1.62	1.81	1.87	1.99
NOV 6	.30	.38	.40	.41	.41	.41	.41	.41	.58	.58	.58	.58
MIAMI												
FEB 12	.32	.55	.56	.85	1.03	1.10	1.23	1.33	1.40	1.42	1.51	1.52
MAR 29	.25	.45	.47	.50	.50	.50	.50	.50	.50	.50	.50	.50
MAY 3	.50	.75	.80	.83	.88	1.20	1.27	1.63	1.68	1.70	1.73	1.82
MAY 22	.28	.53	.54	.55	.59	.60	.61	.61	.61	.61	.63	.63
MAY 29	.50	.95	1.00	1.25	1.50	1.52	1.52	1.52	1.52	1.52	1.52	1.52
JUN 3	.35	.45	.52	.55	.55	.55	.55	.55	.55	.55	.55	.55
JUN 9	.39	.74	.85	.93	.96	.96	.96	.96	.96	.96	.96	.96
JUN 26	.16	.32	.32	.33	.34	.47	.59	.62	.70	.77	.80	.84
JUN 28	.25	.35	.40	.50	.50	.50	.50	.50	.50	.50	.50	.50
JUL 8	.25	.50	.53	.55	.55	.55	.55	.55	.55	.55	.55	.55
AUG 13	.40	.60	.63	.65	.70	.71	.71	.71	.71	.71	.71	.71
AUG 19	.37	.62	.75	.95	1.00	1.03	1.04	1.04	1.04	1.04	1.05	1.05
AUG 21	.25	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
AUG 22	.35	.65	.70	.80	.90	.91	.92	.93	.93	.93	.93	.93
SEP 19	.23	.27	.29	.42	.52	.52	.52	.52	.52	.52	.52	.52
SEP 20	.37	.70	.85	1.05	1.21	1.22	1.25	1.32	1.87	1.90	1.99	2.07
SEP 24	.26	.43	.45	.50	.54	.60	.65	.72	.79	.82	.89	.92
SEP 25	.28	.36	.39	.42	.46	.47	.47	.48	.49	.49	.49	.49
OCT 15	.34	.60	.60	.60	.62	.65	.67	.70	.74	.74	.93	.95
OCT 16	.15	.28	.38	.42	.60	.72	.75	.76	.80	.80	.81	.81
NOV 12	.16	.31	.32	.33	.41	.42	.42	.42	.42	.42	.42	.42
MIAMI BEACH												
MAY 3	.48	.95	1.01	1.25	1.65	2.00	2.48	2.52	2.58	2.61	2.78	2.85
JUN 5	.40	.58	.65	.86	1.10	1.40	1.42	1.65	1.78	1.79	1.79	1.79
JUN 28	.25	.32	.35	.40	.50	.56	.62	.68	.72	.74	.75	.80
JUL 15	.27	.50	.51	.53	.55	.56	.56	.56	.56	.56	.56	.56
JUL 16	.25	.30	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
JUL 19	.25	.38	.43	.46	.51	.52	.54	.55	.55	.55	.56	.56
AUG 11	.36	.53	.58	.63	.65	.65	.65	.65	.65	.65	.65	.65
AUG 19	.37	.62	.65	.74	.82	.83	.83	.84	.84	.84	.85	.85
AUG 20	.45	.85	.90	1.10	1.67	1.94	1.95	1.95	1.95	1.95	1.95	1.95
AUG 28	.20	.31	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
SEP 9	.61	.76	.80	.95	1.05	1.09	1.18	1.21	1.21	1.22	1.22	1.23
SEP 19	.26	.32	.45	.55	.69	.71	.72	.73	.73	.73	.74	.75
SEP 19	.34	.63	.68	.71	.82	.83	.85	.85	.87	.90	.91	.91
SEP 20	.31	.36	.37	.38	.45	.45	.45	.46	.46	.46	.75	.85
SEP 23	.21	.30	.35	.45	.66	.74	.80	.90	.98	1.04	1.12	1.14
SEP 24	.35	.39	.45	.55	.63	.66	.68	.73	.80	.86	.91	.94
SEP 25	.30	.40	.45	.75	.90	.97	1.01	1.08	1.16	1.19	1.19	1.25
NOV 5	.27	.42	.47	.62	.69	.71	.93	.96	.98	1.01	1.03	1.03
DEC 24	.25	.45	.53	.55	.63	.63	.63	.63	.63	.63	.63	.63
MIAMI U												
FEB 12	.31	.47	.56	.75	.90	1.00	1.23	1.40	1.51	1.56	1.63	1.66
MAY 3	.34	.56	.72	.78	.82	.88	.93	.97	1.05	1.06	1.18	1.44
MAY 3	.38	.55	.62	.68	.73	.88	1.01	1.09	1.27	1.33	1.35	1.41
MAY 29	.37	.68	.96	1.13	1.23	1.26	1.27	1.28	1.28	1.28	1.28	1.28
JUN 3	.38	.73	1.00	1.11	1.15	1.16	1.16	1.17	1.17	1.17	1.17	1.17
JUN 4	.38	.53	.63	.76	.85	.88	.89	.91	.94	.96	.97	.97
JUN 5	.44	.73	.80	.81	.82	.82	.83	.85	.86	.86	.86	.86
JUN 26	.38	.63	.83	.99	1.05	1.06	1.13	1.55	1.64	1.66	1.70	1.75
JUN 28	.39	.67	.88	1.06	1.13	1.15	1.16	1.16	1.16	1.16	1.16	1.16
AUG 11	.29	.43	.57	.62	.63	.64	.64	.64	.64	.64	.64	.64
AUG 13	.26	.40	.50	.50	.50	.51	.51	.51	.51	.51	.51	.51
AUG 19	.31	.48	.75	.84	.91	.97	.99	.99	.99	.99	.99	1.00
AUG 21	.29	.39	.47	.47	.47	.47	.47	.47	.47	.47	.47	.47
AUG 22	.51	.87	1.16	1.42	1.83	1.88	1.89	1.89	1.90	1.90	1.90	1.90
AUG 26	.29	.52	.66	.71	.74	.75	.75	.75	.75	.86	.89	.89
SEP 14	.20	.28	.37	.43	.51	.63	.65	.65	.65	.65	.65	.65
SEP 20	.29	.49	.62	.67	.76	.83	.87	1.06	1.16	1.29	1.50	1.58
SEP 20	.38	.50	.50	.50	.65	.81	.97	1.07	1.55	1.57	1.69	1.79
NOV 6	.27	.38	.42	.43	.43	.44	.45	.45	.45	.45	.45	.45
ORLANDO												
JAN 23	.16	.24	.35	.37	.55	.67	.75	.90	1.11	1.12	1.22	1.28
FEB 12	.23	.37	.43	.50	.54	.63	.65	.72	.79	.89	.96	1.00
FEB 19	.33	.33	.35	.40	.40	.42	.44	.45	.45	.46	.46	.47
MAR 9	.23	.34	.45	.51	.61	.67	.69	.73	.80	.83	.85	.86
APR 7	.25	.40	.45	.47	.50	.63	.69	.75	.75	.75	.75	.75
MAY 26	.25	.32	.45	.59	.85	.95	1.01	1.07	1.14	1.16	1.16	1.16
MAY 29	.27	.37	.42	.57	.59	.59	.59	.59	.59	.59	.59	.59
JUN 24	.50	.80	1.15	1.55	2.30	3.07	3.31	3.51	3.54	3.54	3.55	3.57
JUN 28	.35	.58	.69	.81	.83	.88	.89	.90	.91	.93	.96	.98
JUL 12	.55	.82	.84	.98	1.08	1.28	1.30	1.30	1.30	1.30	1.30	1.30
JUL 22	.25	.34	.40	.43	.46	.47	.49	.53	.53	.53	.53	.54
AUG 17	.18	.32	.43	.46	.56	.67	.76	.76	.76	.78	.79	.87
AUG 20	.26	.48	.72	.90	1.02	1.05	1.05	1.05	1.05	1.05	1.05	1.05
SEP 22	.30	.55	.80	.93	1.10	1.12	1.14	1.15	1.19	1.20	1.20	1.21
NOV 10	.26	.44	.55	.63	.83	.99	1.16	1.28	1.38	1.47	1.83	1.99
PENSACOLA												
JAN 11	.35	.49	.54	.55	.56	.56	.56	.56	.56	.56	.56	.56
JAN 11	.36	.41	.44	.50	.55	.64	.69	.77	.89	.91	.91	.91
FEB 11	.21	.38	.56	.62	.78	.95	1.15	1.16	1.17	1.17	1.17	1.21
FEB 18	.31	.40	.46	.50	.57	.68	.77	.95	1.25	1.50	1.62	1.68
APR 6	.35	.41	.50	.63	.77	1.00	1.25	1.34	1.36	1.37	1.38	1.38
JUN 17	.38	.75	.99	1.15	1.41	1.50	1.51	1.51	1.51	1.62	1.63	1.63
JUN 19	.37	.52	.65	.82	.99	1.43	1.45	1.49	1.55	1.63	2.09	2.17
JUN 21	.25	.27	.27	.27	.28	.28	.28	.28	.28	.28	.28	.28
JUN 28	.23	.30	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
JUL 14	.20	.34	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
JUL 21	.31	.50	.66	.77	.82	.82	.83	.83	.83	.83	.84	.84
JUL 24	.54	.96	1.32	1.41	1.51	1.75	1.91	1.96	1.97	2.04	2.09	2.28
JUL 26	.39	.65	.97	1.15	1.60	1.91	2.12	2.40	2.43	3.01	3.24	3.61
AUG 11	.24	.34	.36	.37	.37	.37	.37	.37	.37	.37	.37	.37
AUG 12	.28	.42	.46	.47	.47	.49	.49	.50	.50	.50	.50	.50
SEP 11	.35	.53	.63	.70	.75	.75	.77	.77	.77	.77	.77	.77
SEP 13	.41	.46	.49	.50	.51	.51	.51	.51	.51	.51	.51	.51
SEP 15	.31	.57	.76	.90	1.07	1.22	1.35	1.61	1.79	1.86	1.88	1.88
NOV 1	.27	.34	.35	.35	.36	.37	.37	.37	.37	.37	.37	.37
NOV 23	.38	.62	.85	.98	1.17	1.40	1.75	2.08	2.22	2.42	2.49	2.59
TALLAHASSEE												
JAN 11-12	.17	.28	.33	.40	.65	.90	1.04	1.18	1.37	1.49	1.71	1.98
FEB 19	.40	.77	.81	.83	.86	.88	.94	.98	1.00	1.02	1.03	1.03

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
FLORIDA												
TALLAHASSEE												
MAR 13	.30	.44	.45	.45	.45	.45	.45	.45	.46	.48	.60	.87
MAR 13	.30	.44	.45	.45	.45	.45	.45	.45	.45	.46	.48	.60
MAR 13	.38	.40	.41	.42	.46	.62	.65	.66	.66	.66	.66	.86
APR 30	.25	.34	.36	.38	.53	.57	.63	.72	.77	.82	.84	.89
MAY 6	.27	.46	.56	.62	.65	.69	.71	.73	.73	.73	.73	.73
MAY 18	.63	1.04	1.16	1.40	1.55	1.56	1.56	1.56	1.56	1.56	1.56	1.62
MAY 27	.23	.45	.46	.53	.62	.62	.68	.68	.68	.68	.68	.68
JUN 7	.36	.63	.72	.80	1.20	1.34	1.50	1.50	1.50	1.50	1.50	1.50
JUN 8	.30	.58	.84	.96	1.01	1.07	1.15	1.15	1.15	1.15	1.15	1.15
JUN 10	.50	.86	1.06	1.18	1.50	1.54	1.58	1.58	1.58	1.58	1.58	1.58
JUN 28	.55	1.10	1.20	1.30	1.53	1.56	1.57	1.58	1.58	1.58	1.62	1.62
JUL 9	.24	.45	.48	.65	.80	.90	.90	.90	.91	.91	.91	.91
JUL 19	.20	.35	.45	.49	.61	.62	.62	.62	.62	.62	.62	.62
JUL 24	.40	.50	.53	.60	.72	.97	1.16	1.41	1.83	1.95	2.09	2.32
AUG 1	.17	.32	.35	.42	.43	.44	.45	.45	.45	.45	.45	.45
AUG 7	.29	.42	.45	.50	.58	.66	.69	.70	.70	.70	.70	.70
AUG 9	.17	.29	.29	.40	.45	.50	.50	.50	.50	.50	.50	.50
AUG 11	.37	.66	.74	.81	1.00	1.04	1.05	1.13	1.13	1.13	1.13	1.13
AUG 12	.40	.70	.74	.82	.97	.98	1.02	1.02	1.03	1.04	1.04	1.04
AUG 17	.26	.50	.55	.66	.83	.96	.99	1.02	1.03	1.04	1.10	1.19
AUG 19	.53	1.04	1.12	1.25	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30
SEP 5	.38	.70	.78	.98	1.23	1.30	1.30	1.30	1.30	1.30	1.30	1.30
SEP 28	.45	.65	.70	.78	1.02	1.41	1.59	1.67	1.81	2.28	2.43	2.55
OCT 1	.16	.30	.38	.42	.43	.43	.43	.43	.43	.44	.45	.45
NOV 1	.16	.30	.32	.36	.50	.52	.54	.56	.56	.56	.56	.56
DEC 12	.21	.37	.43	.56	.71	.76	.78	.78	.78	.78	.82	.82
DEC 12	.20	.32	.38	.44	.56	.59	.66	.85	1.11	1.07	1.35	1.38
TAMPA												
JAN 21	.20	.22	.30	.38	.56	.66	.67	.73	.77	.78	.78	.79
FEB 3	.25	.40	.40	.41	.43	.45	.47	.50	.55	.59	.65	.70
FEB 11	.35	.64	.67	.71	.94	1.25	1.45	1.74	2.20	2.34	2.68	2.78
FEB 19	.30	.35	.38	.42	.43	.45	.48	.53	.55	.57	.60	.60
MAR 9	.21	.35	.38	.47	.70	.74	.79	.83	.90	.95	1.03	1.05
MAY 1	.27	.45	.45	.45	.45	.46	.46	.46	.46	.46	.46	.46
JUN 23	.30	.52	.62	.75	1.16	1.29	1.31	1.31	1.31	1.31	1.31	1.31
JUN 28	.42	.53	.56	.80	.91	1.04	1.05	1.05	1.06	1.08	1.12	1.15
JUL 1	.55	.78	.85	.95	1.28	1.43	1.53	1.68	1.70	1.70	1.70	1.70
JUL 10	.35	.58	.80	.85	1.17	1.32	1.53	1.62	1.63	1.64	1.65	1.66
JUL 17	.14	.27	.30	.37	.52	.72	.74	.74	.74	.74	.74	.74
JUL 23	.28	.43	.46	.55	.60	.73	.80	.90	.91	.96	1.11	1.11
AUG 18	.25	.50	.64	.64	.64	.64	.64	.64	.90	1.01	1.01	1.01
AUG 26	.31	.45	.50	.58	1.00	1.08	1.18	1.20	1.20	1.20	1.20	1.20
SEP 22	.33	.49	.62	.70	1.04	1.10	1.18	1.18	1.18	1.19	1.19	1.19
NOV 2	.26	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
NOV 6	.20	.28	.31	.45	.57	.59	.62	.64	.67	.69	.70	.71
NOV 10	.32	.53	.60	.74	1.20	1.45	1.59	1.75	1.85	1.90	2.04	2.21
WEST PALM BEACH												
FEB 12	.20	.33	.45	.49	.50	.54	.54	.56	.60	.71	.90	.98
MAR 1	.35	.36	.37	.38	.39	.41	.41	.41	.41	.41	.41	.41
MAY 3	.25	.50	.65	.72	.85	.95	1.05	1.23	1.30	1.45	1.70	1.83
JUN 12	.25	.35	.48	.51	.52	.55	.59	.61	.63	.64	.65	.65
AUG 11	.21	.36	.40	.45	.50	.53	.55	.55	.55	.55	.55	.55
AUG 14	.30	.41	.45	.55	.59	.60	.60	.60	.60	.60	.60	.60
SEP 8	.18	.29	.38	.43	.53	.57	.58	.58	.58	.58	.58	.58
SEP 11	.25	.45	.70	.85*1	.30	1.55	1.70	2.00	2.21	2.25	2.25	2.25
SEP 19	.20	.32	.37	.43	.51	.57	.62	.70	.74	.78	.82	.82
SEP 24	.25	.32	.36	.41	.44	.45	.50	.50	.50	.50	.50	.50
OCT 2	.25	.35	.50	.60	.80	.90	.96	.98	.98	.98	.99	.99
OCT 2	.40	.80	1.10	1.40*1	.95	2.85	3.42	3.93	4.28	4.62	4.70	4.70
OCT 3	.18	.33	.45	.60	.77	.85	.91	.96	.96	.96	.96	.96
OCT 7	.28	.35	.49	.64	.68	.70	.70	.70	.70	.70	.70	.70
OCT 9	.27	.41	.49	.60	.85	.87	.89	.89	.89	.89	.95	.95
OCT 10	.25	.30	.34	.39	.46	.48	.48	.48	.55	.79	.90	.94
OCT 15	.15	.20	.33	.40	.48	.49	.49	.52	.52	.52	.52	.52
OCT 16	.26	.47	.58	.60	.68	.80	.89	.91	1.02	1.03	1.07	1.08
NOV 5	.19	.34	.45	.55	.79	1.13	1.14	1.14	1.15	1.17	1.17	1.17
NOV 10	.25	.35	.45	.54	.55	.55	.55	.55	.55	.55	.55	.55
GEORGIA												
ATHENS												
MAR 3	.26	.45	.70	.77	.85	.90	1.10	1.15	1.24	1.28	1.38	1.60
APR 29	.50	.75	.90	.97	1.05	1.10	1.15	1.23	1.34	1.43	1.54	1.55
MAY 27	.32	.43	.44	.45	.45	.45	.45	.45	.45	.45	.45	.45
MAY 28	.20	.35	.43	.46	.49	.52	.56	.58	.59	.60	.61	.61
JUN 16	.18	.34	.36	.54	.72	.78	.82	.83	.94	.98	1.00	1.00
JUN 17	.32	.41	.43	.45	.51	.54	.57	.60	.60	.60	.60	.63
JUN 19	.25	.39	.40	.42	.43	.44	.49	.53	.54	.58	.60	.60
JUN 26	.12	.20	.30	.37	.56	.66	.68	.70	1.02	1.38	1.51	1.57
JUN 26	.30	.50	.58	.60	.60	.62	.62	.62	.62	.75	.78	1.18
JUN 26	.20	.35	.50	.65	.85	1.05	1.45	1.55	1.85	2.15	2.18	2.29
JUL 6	.20	.32	.32	.32	.32	.32	.34	.37	.44	.48	.49	.50
JUL 20	.40	.73	.82	.87	.89	.91	.95	1.04	1.06	1.08	1.08	1.08
JUL 30	.60	.95	1.10	1.20	1.75	1.96	2.04	2.09	2.10	2.12	2.12	2.12
NOV 26	.25	.30	.40	.45	.65	.80	.93	1.03	1.23	1.30	1.31	1.33
ATLANTA												
MAR 5	.24	.34	.43	.49	.51	.54	.55	.59	.67	.77	.80	.87
MAR 12	.31	.48	.57	.63	.71	.83	.95	1.05	1.10	1.12	1.20	1.23
MAR 17	.39	.40	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41
APR 29	.48	.69	.88	1.01	1.21	1.30	1.32	1.40	1.41	1.45	1.49	1.54
APR 30	.37	.44	.46	.48	.53	.54	.58	.72	.79	.87	.97	1.02
MAY 27	.27	.34	.37	.45	.66	.68	.73	.80	.86	.92	.97	.98
JUN 16	.33	.48	.57	.58	.64	.68	.78	.89	.96	.98	1.00	1.10
JUN 17	.34	.35	.36	.36	.36	.37	.57	.58	.58	.58	.58	.58
JUN 21	.19	.33	.40	.57	.58	.70	.71	.71	.71	.71	.71	.71
JUL 6	.55	.97	1.10	1.19	1.22	1.23	1.24	1.25	1.25	1.25	1.25	1.25
JUL 17	.35	.47	.63	.75	1.06	1.17	1.20	1.20	1.22	1.24	1.25	1.25
JUL 18	.23	.36	.47	.51	.56	.57	.58	.58	.58	.58	.58	.58
JUL 20	.27	.31	.38	.41	.44	.45	.48	.55	.60	.66	.69	.69
JUL 24	.50	.75	.90	1.01	1.02	1.05	1.41	1.54	1.70	2.36	2.55	2.55
SEP 4	.73	.87	.98	1.03	1.08	1.11	1.16	1.21	1.23	1.24	1.24	1.24
AUGUSTA												
MAR 6	.27	.32	.34	.39	.47	.53	.56	.68	.70	.74	.76	.78
MAY 20	.27	.52	.63	.71	.73	.76	.80	.80	.80	.80	.80	.80
MAY 28	.32	.54	.60	.80	1.05	1.06	1.08	1.08	1.08	1.08	1.08	1.08
JUN 20	.20	.30	.33	.35	.35	.36	.36	.36	.36	.36	.36	.36
JUL 20	.23	.28	.34	.46	.53	.55	.56	.59	.61	.61	.66	.66
AUG 25	.17	.28	.39	.46	.64	.69	.72	.78	.87	.93	.95	.95
SEP 28	.26	.39	.46	.54	.77	.87	.95	1.03	1.09	1.13	1.24	1.28

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
GEORGIA												
COLUMBUS												
APR 30	.35	.58	.63	.80	.93	.96	.99	1.02	1.03	1.04	1.04	1.04
JUN 18	.35	.50	.59	.61	.61	.66	.70	.71	.71	.71	.71	.72
JUN 18	.20	.40	.46	.49	.52	.53	.53	.53	.53	.53	.53	.54
JUN 22	.30	.50	.70	.75	1.06	1.34	1.42	1.43	1.43	1.43	1.43	1.43
JUL 28	.18	.30	.32	.32	.39	.41	.43	.45	.47	.47	.47	.48
AUG 13	.25	.40	.50	.55	.55	.56	.75	.82	1.00	1.02	1.06	1.16
AUG 29	.30	.45	.50	.56	.76	.82	.90	.99	1.00	1.00	1.00	1.00
NOV 26	.20	.32	.34	.43	.48	.57	.74	.82	1.00	1.18	1.25	1.31
MACON												
JAN 20	.49	.72	.83	.86	.88	.99	1.09	1.16	1.21	1.21	1.22	1.30
APR 30	.21	.31	.36	.40	.53	.60	.65	.66	1.00	1.32	1.64	1.95
MAY 28	.39	.77	.99	1.13	1.19	1.22	1.25	1.28	1.31	1.35	1.36	1.36
JUL 6	.60	.98	1.26	1.72	1.72	1.72	1.73	1.73	1.74	1.75	1.75	1.75
JUL 8	.40	.47	.48	.48	.48	.59	.79	.85	.85	.85	.85	.85
JUL 14	.30	.41	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
JUL 17	.23	.40	.43	.44	.45	.45	.45	.47	.49	.49	.50	.54
JUL 29	.23	.33	.42	.44	.45	.59	.59	.59	.59	.59	.59	.59
T JUL 31	M	M	M	M	M	.74	M	M	M	M	M	.78
AUG 8	.19	.31	.40	.45	.49	.60	.60	.60	.60	.60	.60	.60
AUG 9	.25	.43	.53	.58	.68	.68	.68	.68	.68	.68	.68	.68
SEP 14	.46	.70	.98	1.15	1.28	1.49	1.69	1.81	1.85	1.96	2.11	2.24
ROME												
JAN 11	.29	.50	.63	.70	.76	.81	.83	.88	.98	1.08	1.25	1.38
MAR 5	.27	.32	.45	.47	.50	.68	.90	1.12	1.37	1.70	1.95	2.03
MAR 12	.29	.34	.49	.54	.64	.80	1.01	1.25	1.55	1.80	2.05	2.37
MAY 27	.32	.47	.57	.68	.93	1.27	1.30	1.37	1.40	1.43	1.44	1.67
JUN 20	.25	.28	.45	.47	.60	.68	.83	.83	.98	.99	.99	.99
JUL 2	.25	.35	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45
JUL 20	.27	.40	.47	.52	.58	.63	.65	.68	.69	.69	.69	.69
SEP 28	.27	.33	.38	.42	.52	.76	.95	1.06	1.26	1.59	1.76	2.16
SAVANNAH												
JAN 20	.19	.26	.39	.42	.49	.50	.51	.52	.52	.54	.55	.56
MAR 17	.20	.32	.34	.35	.37	.38	.38	.38	.38	.38	.38	.38
APR 6	.29	.44	.51	.54	.59	.69	.88	.98	1.07	1.28	1.40	1.46
APR 12	.32	.63	.94	1.07	1.22	1.24	1.25	1.29	1.30	1.30	1.30	1.30
MAY 20	.33	.57	.71	.94	1.04	1.24	1.34	1.38	1.39	1.39	1.42	1.42
JUN 6	.34	.56	.79	.93	1.17	1.65	1.86	2.08	2.21	2.28	2.45	2.56
JUN 18	.21	.32	.38	.39	.41	.44	.46	.49	.49	.49	.50	.50
JUN 22	.55	.86	.96	.98	.98	1.04	1.11	1.54	1.64	1.67	1.76	1.76
JUN 24	.15	.24	.33	.47	.53	.55	.57	.57	.58	.60	.62	.62
JUN 26	.38	.47	.51	.51	.52	.52	.53	.54	.55	.55	.55	.55
JUN 26	.19	.34	.49	.58	.72	.94	1.12	1.28	1.50	1.60	1.76	1.88
JUN 27	.25	.36	.41	.42	.42	.49	.72	.86	.86	.90	1.13	1.19
JUL 1	.28	.53	.77	.97	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05
JUL 7	.41	.70	.73	.80	.93	.94	.94	.94	.94	.94	.94	.94
JUL 16	.16	.28	.38	.45	.60	.64	.68	.81	.92	.99	.99	.99
JUL 29	.51	.85	.99	1.02	1.03	1.07	1.09	1.20	1.25	1.29	1.30	1.32
JUL 30	.25	.33	.42	.48	.50	.51	.51	.51	.53	.53	.78	.87
JUL 31	.27	.46	.64	.69	.72	.73	.73	.73	.73	.73	.73	.73
SEP 6	.21	.35	.48	.69	.83	.84	.85	.85	.85	.85	.85	.85
SEP 29	.22	.43	.48	.58	.67	.69	.82	.92	.98	1.06	1.09	1.18
HAWAII												
HILO												
MAR 1	.26	.28	.33	.34	.34	.36	.36	.36	.36	.36	.36	.59
MAR 6	.40	.75	1.03	1.26*1	.88	2.28	2.65	3.14	3.44	3.48	3.50	3.50
APR 15	.23	.40	.55	.67	.87	1.17	1.33	1.45	1.50	1.56	2.18	2.43
APR 15	.22	.38	.52	.56	.62	.63	.65	.68	.77	.82	.87	.93
APR 15	M	M	M	M	M	M	1.20	1.20	1.32	1.38	1.45	1.66
APR 16	.20	.30	.40	.48	.53	.55	.60	.64	.65	.70	.77	.81
APR 16	.26	.50	.60	.63	.66	.73	.77	.78	.79	.80	.88	.96
APR 17	M	M	M	M	M	M	1.70	M	M	2.70	M	M
APR 17	.23	.41	.55	.62	.68	.84	.96	1.20	1.36	1.47	1.54	2.30
MAY 6	.26	.41	.49	.61	.74	.99	1.17	1.22	1.33	1.64	1.75	1.93
MAY 11	.18	.33	.45	.52	.57	.62	.66	.68	.90	.95	.96	.97
JUN 9	.17	.32	.41	.48	.57	.69	.75	.88	1.07	1.15	1.48	1.88
SEP 17	.22	.32	.33	.35	.38	.48	.53	.56	.61	.65	.65	.65
SEP 17	.26	.31	.36	.41	.45	.45	.45	.56	.60	.62	.66	.66
SEP 29	.14	.27	.30	.38	.50	.55	.60	.67	.80	.95	1.18	1.40
OCT 3	.15	.27	.32	.42	.50	.51	.52	.53	.74	.75	.76	.84
HONOLULU												
JAN 7	.35	.65	.83	1.06	1.14	1.39	1.81	2.22	2.41	2.70	2.82	2.99
JAN 8	.42	.71	.93	1.00	1.00	1.00	1.00	1.00	1.05	1.05	1.05	1.05
JAN 16	.15	.29	.37	.42	.61	.77	.82	.83	.91	.95	.98	1.06
MAR 18	.28	.40	.45	.48	.55	.61	.66	.71	.76	.87	.92	.92
APR 10	.45	.61	.70	.70	.71	.75	.76	.77	.77	.77	.78	.78
MAY 14	.61	.93	1.19	1.43	1.70	1.92	2.44	2.68	2.77	2.84	2.94	3.03
SEP 17	.17	.30	.42	.46	.52	.56	.61	.67	.70	.74	.76	.77
KAHULUI												
JAN 8	.35	.39	.46	.51	.55	.56	.57	.63	.65	.65	.65	.65
MAR 28	.27	.46	.64	.73	1.06	1.15	1.18	1.23	1.42	1.50	1.56	1.58
MAY 14	.19	.31	.38	.40	.43	.52	.65	.84	.94	1.03	1.11	1.22
SEP 17	.14	.23	.33	.40	.55	.64	.66	.68	.71	.74	.75	.78
LIHUE												
JAN 6	.26	.37	.45	.47	.60	.91	1.20	1.40	1.48	1.56	1.59	1.65
JAN 7	.25	.42	.48	.50	.57	.65	.68	.68	.68	.68	.68	.69
JAN 7	.27	.33	.38	.42	.51	.54	.54	.58	.58	.59	.62	.69
JAN 8	.30	.39	.46	.50	.67	.73	.74	.99	1.27	1.28	1.55	1.58
MAR 30	.23	.38	.53	.63	.81	.93	1.04	1.13	1.13	1.13	1.14	1.18
APR 1	.26	.37	.44	.50	.52	.54	.58	.60	.61	.63	.76	.81
APR 14	.36	.44	.64	.74	.89	1.10	1.30	1.47	1.56	1.65	1.70	1.74
APR 26	.30	.45	.48	.48	.49	.49	.49	.49	.51	.51	.51	.51
SEP 17	.32	.48	.67	.78	.82	.84	.86	.99	1.01	1.10	1.10	1.10
IDAHO												
BOISE												
AUG 9	.31*	.44*	.59	.59	.59	.59	.59	.59	.59	.59	.59	.59
LEWISTON	NONE											
POCATELLO												
JUN 14	.18	.34	.42	.46	.62	.66	.68	.68	.68	.68	.68	.68
ILLINOIS												
CAIRO U												
MAY 5	.22	.35	.49	.58	.70	.82	.84	.87	.92	.99	1.05	1.07

T Clock malfunction
M No record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
ILLINOIS												
CAIRO U												
JUL 14	.38	.70	.85	.86	.86	.86	.86	.86	.86	.86	.86	.86
JUL 29	.37	.55	.61	.61	.62	.63	.64	.64	.65	.65	.65	.65
AUG 13	.29	.45	.54	.67	.86	.98	1.10	1.16	1.18	1.21	1.25	1.29
CHICAGO MIDWAY												
APR 17	.30	.60	.74	.79	.80	.80	.80	.80	.80	.80	.80	.80
JUL 16	.42	.53	.63	.70	.76	.80	.83	1.05	1.11	1.36	1.72	1.80
JUL 19	.19	.29	.39	.49	.68	.77	.85	.90	1.01	1.03	1.08	1.12
SEP 2	.25	.37	.42	.55	.82	.88	.92	.98	1.04	1.04	1.04	1.04
SEP 12	.24	.31	.33	.39	.55	.55	.55	.55	.55	.55	.55	.55
CHICAGO O HARE												
JUN 27	.25	.39	.39	.39	.39	.39	.39	.39	.39	.44	.48	.62
JUL 19	.27	.42	.56	.66	.69	.69	.73	.74	.76	.78	.79	.84
SEP 2	.40	.70	.99	1.02	1.06	1.09	1.16	1.16	1.16	1.31	1.31	1.31
NOV 17	.27	.39	.39	.40	.40	.40	.41	.42	.42	.70	.72	.72
MOLINE												
JUN 19	.40	.54	.69	.75	.80	.81	.81	.81	.81	.81	.81	.81
JUL 13	.15	.27	.39	.49	.58	.70	.78	.86	.93	.97	1.04	1.07
JUL 18	.50	.96	1.29	1.58	2.04	2.76	2.80	2.82	2.84	2.84	2.84	2.84
JUL 19	.56	.92	1.06	1.17	1.34	1.51	1.62	1.78	1.98	2.19	2.51	2.55
JUL 31	.40	.66	.73	.74	.76	.80	.86	.87	.88	.89	.90	.92
AUG 24	.22	.37	.45	.52	.74	.93	.95	1.26	1.35	1.40	1.43	1.45
AUG 28	.26	.43	.60	.68	.80	.82	.90	.96	1.01	1.03	1.05	1.07
SEP 20	.26	.48	.60	.67	.79	.96	1.06	1.08	1.09	1.10	1.10	1.10
PEORIA												
MAR 25	.23	.33	.37	.38	.39	.41	.42	.45	.50	.50	.50	.50
APR 22	.19	.38	.46	.50	.54	.61	.63	.66	.67	.67	.67	.68
APR 29	.21	.42	.60	.69	.94	1.03	1.08	1.15	1.24	1.26	1.26	1.26
JUN 5	.32	.60	.84	1.04	1.20	1.26	1.27	1.34	1.44	1.45	1.45	1.45
JUL 13	.16	.29	.40	.50	.68	.79	.87	.98	1.04	1.13	1.28	1.38
JUL 19	.22	.40	.46	.47	.47	.48	.48	.48	.48	.48	.48	.48
SEP 11	.20	.32	.37	.40	.43	.43	.43	.43	.43	.43	.43	.43
ROCKFORD												
JUN 4	.18	.35	.43	.52	.60	.64	.65	.65	.65	.65	.65	.65
JUN 9	.30	.38	.39	.43	.44	.45	.45	.45	.45	.45	.46	.51
JUN 19	.26	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51	.51
JUN 19	.20	.35	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
JUL 16	.23	.35	.45	.47	.50	.52	.55	.57	.60	.60	.60	.60
JUL 18	.55	.88	1.00	1.17	1.40	1.41	1.50	1.55	1.61	1.68	1.75	1.85
SEP 2	.36	.48	.64	.79	1.08	1.25	1.25	1.25	1.25	1.25	1.25	1.25
SEP 11	.15	.27	.38	.48	.56	.65	.71	.80	.86	.93	1.00	1.10
SEP 28	.25	.36	.43	.52	.58	.67	.72	.76	.76	.78	.78	.78
SPRINGFIELD												
APR 17	.28	.52	.60	.61	.62	.62	.62	.62	.62	.62	.62	.62
JUN 10	.24	.40	.48	.56	.59	.60	.60	.60	.60	.60	.60	.60
JUN 30	.21	.32	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
JUL 4	.22	.40	.45	.50	.58	.65	.74	.83	.87	.94	1.06	1.17
JUL 6	.28	.49	.60	.67	.82	1.01	1.33	1.42	1.50	1.72	2.04	2.16
JUL 28	.26	.34	.42	.48	.74	1.00	1.02	1.05	1.05	1.06	1.06	1.08
AUG 5	.23	.32	.32	.32	.32	.32	.32	.39	.58	.63	.64	.69
AUG 12	.24	.32	.36	.40	.50	.74	.87	1.16	1.28	1.28	1.36	1.42
INDIANA												
EVANSVILLE												
MAR 16	.59	.64	.67	.68	.70	.83	.92	.97	1.04	1.06	1.09	1.12
MAY 16	.25	.28	.29	.29	.30	.30	.30	.30	.30	.31	.48	.49
MAY 16	.29	.56	.59	.67	.75	.76	.76	.84	.84	.84	.84	.84
JUL 1	.38	.68	.92	1.10	1.24	1.30	1.35	1.36	1.37	1.37	1.38	1.38
JUL 27	.30	.41	.48	.55	.59	.59	.59	.59	.59	.59	.59	.59
AUG 12	.26	.46	.47	.47	.47	.48	.49	.49	.49	.49	.49	.49
AUG 28	.46	.82	1.00	1.11	1.34	1.44	1.45	1.45	1.45	1.45	1.45	1.45
SEP 3	.20	.36	.44	.47	.48	.48	.48	.48	.48	.48	.48	.48
FORT WAYNE												
APR 17	.24	.48	.68	.88	1.34	1.96	2.00	2.02	2.07	2.14	2.18	2.26
JUL 19	.30	.60	.90	1.20	1.53	1.69	1.74	1.75	1.76	1.76	1.77	1.82
SEP 12	.17	.29	.39	.42	.46	.63	.69	.69	.69	.69	.69	.69
INDIANAPOLIS												
MAR 4	.13	.22	.27	.37	.48	.65	.83	1.02	1.26	1.42	1.54	1.64
MAR 19	.44	.66	.75	.78	.81	.87	.89	.91	.91	.91	.91	.93
MAY 13	.28	.35	.35	.38	.39	.39	.40	.41	.41	.41	.41	.41
JUN 4	.17	.29	.36	.37	.37	.37	.39	.41	.42	.42	.57	.59
JUN 7	.43	.71	.86	1.12	1.68	2.13	2.79	3.22	3.49*	3.60	3.72*	3.73
JUN 13	.17	.31	.45	.49	.49	.51	.51	.51	.51	.51	.51	.51
JUL 20	.28	.44	.54	.75	.93	1.38	1.84	1.97	2.12	2.15	2.21	2.21
SOUTH BEND												
JUL 16	.35	.55	.55	.55	.55	.55	.55	.55	.55	.55	.60	.62
JUL 19	.29	.33	.33	.34	.36	.41	.53	.56	.57	.59	.60	.63
JUL 19	.50	.70	.75	.87	.97	.97	1.00	1.05	1.12	1.17	1.20	1.20
IOWA												
BURLINGTON												
MAR 4	.25	.32	.35	.37	.38	.42	.47	.57	.66	.77	.85	.95
JUN 19	.26	.52	.58	.59	.59	.59	.59	.59	.59	.59	.59	.59
JUL 4	.15	.26	.40	.52	.57	.64	.75	.85	.95	1.04	1.09	1.19
JUL 17	.30	.37	.38	.47	.56	.59	.63	.65	.66	.66	.67	.67
DES MOINES												
APR 18	.44	.65	.67	.72	.73	.77	.78	.78	.78	.78	.78	.78
APR 28	.31	.36	.36	.37	.37	.37	.37	.37	.37	.38	.38	.38
MAY 12	.35	.46	.47	.49	.53	.55	.57	.59	.62	.64	.66	.67
MAY 27	.60	.70	.73	.79	.87	.93	.99	1.00	1.01	1.02	1.05	1.05
JUL 5	.26	.40	.46	.60	.76	.78	.79	.80	.81	.83	.85	.87
JUL 17	.20	.39	.40	.47	.65	.70	.72	.74	.79	.85	.93	.95
AUG 5	.43	.71	.78	.85	.93	.95	.95	.95	.95	.95	.95	1.04
AUG 28	.40	.63	.65	.67	.70	.94	1.00	1.00	1.02	1.04	1.04	1.04
OCT 17	.60	.80	1.02	1.25	1.33	1.34	1.34	1.34	1.34	1.34	1.34	1.34
DUBUQUE												
JUL 18	.25	.40	.50	.65	.78	.89	.95	1.00	1.10	1.14	1.20	1.47
JUL 19	.45	.85	.95	1.12	1.45	1.70	1.71	1.76	1.85	1.92	1.98	2.00
AUG 3	.25	.35	.45	.60	.74	.75	.77	.82	.82	.82	.82	.82
AUG 9	.35	.66	.72	.76	.80	.80	.81	.81	.85	.85	.85	.85
AUG 24	.30	.40	.43	.50	.62	.75	1.00	1.28	1.54	1.60	1.85	2.20
AUG 28	.28	.40	.45	.60	.80	.89	1.01	1.01	1.27	1.30	1.42	1.49
SEP 20	.25	.50	.68	.75	.87	.90	.98	1.00	1.06	1.08	1.23	1.24

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
IOWA												
SIOUX CITY												
MAY 11	.30	.50	.68	.76	.78	.81	.98	1.27	1.42	1.42	1.42	1.42
MAY 11	.44	.49	.49	.49	.49	.49	.49	.49	.49	.49	.49	.49
JUN 1	.30	.47	.64	.70	.84	.94	.95	.95	1.02	1.14	1.14	1.14
JUN 1-2	.49	.91	.95	1.06	1.16	1.24	1.39	1.42	1.43	1.45	1.45	1.58
AUG 28	.25	.32	.41	.50	.70	.84	.87	.88	.90	.92	.94	.94
SEP 23	.23	.34	.37	.40	.51	.57	.60	.61	.85	.86	.88	.88
WATERLOO												
MAR 25	.18	.34	.48	.57	.61	.67	.77	.86	.88	.88	.88	.88
JUN 8	.26	.33	.36	.38	.46	.72	.83	.87	.90	1.12	1.22	1.43
JUN 26	.54	.72	.90	1.08	1.19	1.32	1.33	1.34	1.34	1.34	1.34	1.42
JUL 16	.21	.40	.42	.45	.46	.48	.49	.49	.49	.49	.49	.49
JUL 18	.48	.53	.70	.71	.71	.75	.77	.78	1.33	1.33	1.38	1.41
JUL 19 T	.76	.90	1.12	1.21	1.52	1.72	1.90	2.50	M	2.80	2.80	2.80
AUG 28	.29	.50	.72	.86	.94	.98	1.02	1.09	1.18	1.23	1.31	1.37
NOV 22	.15	.23	.27	.33	.50	.64	.81	.88	.90	1.05	1.17	1.32
KANSAS												
CONCORDIA												
MAR 18	.18	.27	.33	.39	.55	.69	.80	.85	.85	.86	.87	.88
APR 27	.17	.30	.36	.37	.38	.38	.38	.38	.38	.38	.38	.38
MAY 12	.18	.31	.41	.48	.58	.58	.58	.58	.58	.58	.58	.58
JUN 11	.24	.34	.45	.48	.52	.56	.56	.56	.56	.56	.56	.56
JUN 12	.29	.47	.52	.57	.59	.60	.60	.60	.60	.60	.64	.65
AUG 17	.19	.38	.50	.52	.53	.56	.57	.61	.70	.72	.83	.89
OCT 18	.25	.30	.35	.47	.56	.75	.77	.79	.90	.96	1.00	1.05
OCT 27	.27	.36	.38	.40	.45	.49	.62	.69	.70	.71	.73	.76
DODGE CITY												
MAY 29	.20	.38	.47	.56	.63	.70	.80	.80	.80	.80	.81	.82
JUN 15	.25	.38	.45	.51	.57	.67	.71	.72	.72	.74	.78	.88
JUL 15	.25	.36	.48	.58	.78	.82	.91	1.00	1.01	1.01	1.01	1.01
GOODLAND												
JUL 29	.30	.60	.75	.80	1.00	1.05	1.24	1.27	1.29	1.29	1.29	1.29
SEP 3	.25	.38	.45	.47	.50	.50	.51	.53	.53	.53	.53	.53
SEP 7	.50	.69	.75	.95	1.50	1.63	1.75	1.81	1.97	2.17	2.23*	2.27
TOPEKA												
MAY 4	.30	.54	.70	.80	1.12	1.29	1.31	1.32	1.33	1.34	1.36	1.38
MAY 15	.16	.32	.44	.49	.56	.72	.83	.91	.92	.92	.92	.92
JUL 12	.16	.30	.32	.36	.48	.60	.74	.94	.99	1.10	1.34	1.48
WICHITA												
MAY 25	.40	.60	.75	.80	1.40	1.76	1.98	2.14	2.32	2.82	3.06	3.06
MAY 26	.45	.60	.67	.76	.92	.99	.99	.99	.99	.99	.99	.99
JUN 15	.48	.51	.53	.58	.59	.64	.74	.80	.87	.89	.89	.89
JUN 19	.28	.36	.38	.40	.54	.63	.69	.71	.71	.71	.71	.71
JUL 17	.20	.26	.28	.40	.42	.45	.48	.50	.52	.52	.53	.56
AUG 17	.32	.37	.41	.42	.49	.49	.49	.49	.49	.49	.49	.49
SEP 1	.30	.52	.60	.65	.72	.75	.76	.81	.84	.84	.86	.86
SEP 5	.20	.30	.31	.32	.33	.33	.39	.41	.41	.45	.45	.51
KENTUCKY												
COVINGTON												
JAN 11	.26	.43	.47	.51	.57	.79	.81	.91	.93	.94	.96	.97
MAR 4	.15	.25	.35	.43	.60	.68	.74	.76	.83	1.01	1.22	1.44
JUN 20	.22	.34	.42	.47	.56	.69	.71	.71	.71	.71	.71	.71
JUL 20	.30	.58	.77	.87	1.08	1.24	1.33	1.46	1.50	1.53	1.60	1.71
LEXINGTON												
MAY 17	.26	.32	.44	.47	.60	.82	.92	1.14	1.15	1.16	1.17	1.17
JUN 7	.38	.48	.52	.56	.62	.64	.65	.65	.65	.66	.66	.68
JUN 7	.30	.31	.31	.31	.31	.32	.34	.34	.34	.34	.34	.34
JUL 2	.25	.40	.56	.73	.92	1.02	1.02	1.03	1.03	1.03	1.03	1.03
JUL 18	.26	.50	.60	.64	.64	.64	.71	.84	.84	.84	.84	.84
JUL 20	.40	.60	.76	.84	1.02	1.18	1.30	1.47	1.52	1.57	1.77	2.04
JUL 28	.32	.40	.48	.49	.50	.50	.52	.55	.57	.57	.57	.57
AUG 13	.18	.36	.40	.42	.62	.72	.73	.75	.78	.92	.97	1.04
LOUISVILLE												
MAR 16	.18	.28	.35	.41	.47	.54	.68	.84	.97	1.10	1.23	1.28
APR 29	.24	.30	.34	.35	.40	.40	.40	.41	.42	.42	.43	.44
APR 29	.22	.40	.48	.54	.60	.64	.68	.76	.81	.87	.87	.87
MAY 13	.20	.40	.48	.52	.52	.52	.53	.62	.78	.78	.78	.78
MAY 28	.49	.73	.84	.86	.88	.98	1.04	1.05	1.06	1.06	1.06	1.06
JUN 13	.30	.34	.58	.62	.64	.70	.78	.80	.80	.80	.80	.80
JUN 20	.23	.31	.31	.32	.32	.32	.32	.32	.65	M	M	M
JUN 20	.28	.34	.38	.51	.69	.71	.71	.72	.78	.95	1.04	1.08
JUL 20	.31	.56	.61	.63	.66	.67	.72	1.04	1.08	1.08	1.13	1.13
JUL 23	.26	.52	.62	.64	.65	.65	.66	1.20	1.20	1.20	1.30	1.38
JUL 29	.25	.37	.47	.49	.53	.53	.53	.53	.53	.53	.53	.53
SEP 3	.36	.52	.58	.60	.62	.62	.62	.62	.62	.62	.62	.62
SEP 12	.64	1.06	1.30	1.46	1.60	1.78	2.12	2.20	2.22	2.23	2.40	2.50
LOUISIANA												
ALEXANDRIA												
MAR 1	.20	.32	.33	.46	.61	.64	.65	.68	.69	.90	.92	.95
MAY 19	.50	.87	1.03	1.38	2.03	2.40	2.68	2.78	2.79	2.80	2.81	2.88
JUL 4	.55	.80	.92	1.07	1.18	1.25	1.25	1.27	1.30	1.35	1.40	1.45
JUL 24	.23	.34	.34	.34	.36	.48	.58	.61	.61	.61	.61	.61
AUG 4	.49	.95	1.00	1.07	1.14	1.15	1.17	1.17	1.17	1.17	1.17	1.17
SEP 5	.22	.34	.36	.49	.57	.60	.61	.62	.64	.69	.72	.75
SEP 13	.30	.53	.56	.72	.75	.75	.91	.94	.95	.95	.95	.96
BATON ROUGE												
JAN 11	.37	.60	.75	.83	.94	.99	1.01	1.02	1.02	1.18	1.22	1.22
FEB 11	.32	.49	.53	.57	.78	.81	.84	.84	.84	.84	.84	.84
APR 30	.20	.33	.42	.50	.53	.57	.58	.58	.58	.58	.58	.58
JUN 24	.26	.37	.40	.43	.46	.47	.47	.47	.47	.47	.47	.47
JUN 25	.30	.46	.52	.56	.57	.57	.57	.57	.57	.57	.57	.57
JUL 4 *	.65	1.05	1.45	1.59	1.80	1.95	1.98	1.98	2.00	2.03	2.04	2.05
JUL 11	.45	.77	.94	1.03	1.22	1.28	1.29	1.30	1.45	1.45	1.45	1.45
JUL 12	.30	.52	.62	.85	1.05	1.35	1.52	1.68	1.79	1.81	1.91	1.97
JUL 22	.46	.62	.73	.95	1.20	1.31	1.34	1.35	1.39	1.41	1.43	1.43
JUL 23	.26	.35	.47	.68	.85	.94	.95	1.00	1.05	1.06	1.08	1.10
JUL 25	.28	.45	.50	.57	.64	.65	.65	.65	.65	.65	.65	.65
JUL 31	.25	.41	.50	.62	.64	.64	.64	.64	.64	.64	.64	.64
AUG 24	.53	.76	.97	1.01	1.13	1.29	1.30	1.30	1.30	1.30	1.30	1.30
NOV 22	.24	.29	.38	.43	.46	.54	.60	.60	.73	.74	.85	.86

T Clock malfunction
M No record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
LOUISIANA												
BATON ROUGE												
DEC 11	.20	.30	.32	.34	.36	.36	.38	.39	.39	.39	.40	.40
LAKE CHARLES												
JAN 11	.35	.51	.54	.56	.97	1.04	1.07	1.10	1.11	1.12	1.13	1.13
JUN 17	.33	.35	.36	.37	.38	.38	.38	.38	.38	.38	.38	.55
JUL 11	.37	.62	.85	1.05	1.27	1.28	1.28	1.28	1.28	1.28	1.28	1.28
JUL 23	.25	.42	.53	.63	.66	.72	.73	.73	.73	.73	.73	.73
JUL 26	.35	.63	.82	1.10	1.36	1.43	1.53	1.65	1.69	1.70	1.81	1.84
AUG 2	.32	.52	.69	.75	.83	.86	.86	.89	.90	.90	.90	.90
AUG 21	.35	.49	.54	.55	.56	.56	.56	.56	.56	.56	.56	.56
SEP 7	.42	.50	.58	.75	1.05	1.43	1.50	1.52	1.53	1.53	1.53	1.53
SEP 8	.45	.57	.62	.75	.92	.97	1.00	1.00	1.00	1.00	1.00	1.00
SEP 12	.35	.50	.60	.70	.76	.76	.76	.76	.76	.76	.76	.76
SEP 17	.23	.30	.35	.37	.48	.49	.51	.56	.60	.64	.68	.73
NOV 5	.35	.52	.55	.59	.65	.81	.86	.91	1.05	1.17	1.23	1.25
NOV 28	.18	.28	.31	.38	.46	.50	.57	.63	.69	.75	.83	1.15
NEW ORLEANS AUDUBON												
JAN 19	.35	.60	.66	.75	1.06	1.36	1.36	1.38	1.39	1.40	1.40	1.40
FEB 12	.40	.47	.49	.50	.54	.55	.58	.60	.60	.60	.60	.60
FEB 18	.42	.81	.94	1.16	1.29	1.43	1.52	1.82	1.94	2.13	2.32	2.36
APR 6	.20	.25	.35	.43	.44	.45	.45	.46	.48	.48	.48	.48
JUN 1	.40	.72	.76	.78	.85	.86	.86	.86	.86	.86	.86	.86
JUN 12	.30	.55	.77	.90	1.03	1.06	1.07	1.08	1.08	1.08	1.08	1.08
JUN 17	.32	.48	.57	.60	.63	.63	.64	.66	.69	.71	.71	.71
JUN 20	.27	.47	.60	.70	.79	.93	.98	.99	.99	.99	.99	.99
JUN 24	.40	.59	.65	.75	.84	.91	.94	.95	.95	.95	.96	.97
JUN 25	.30	.40	.41	.42	.42	.42	.42	.43	.43	.43	.43	.44
JUL 2	.32	.57	.73	.80	.95	.96	.96	.96	.96	.96	.96	.96
JUL 8	.16	.25	.35	.40	.40	.40	.40	.40	.40	.40	.40	.40
JUL 8	.27	.35	.37	.39	.41	.42	.43	.44	.44	.44	.44	.46
JUL 9	.57	.75	.81	.86	.86	.86	.86	.86	.86	.86	.87	.90
JUL 18	.12	.22	.30	.36	.50	.53	.58	.58	.58	.58	.58	.58
JUL 31	.25	.44	.50	.64	.84	.92	.94	.94	.94	.94	.94	.94
AUG 21	.31	.57	.83	1.00	1.05	1.07	1.07	1.07	1.07	1.07	1.07	1.07
AUG 22	.25	.32	.44	.62	.83	1.01	1.31	1.32	1.32	1.32	1.32	1.32
AUG 24	.20	.36	.43	.46	.47	.47	.47	.47	.47	.47	.47	.47
SEP 7	.50	.80	1.00	1.28	1.67	1.74	1.75	1.77	2.01	2.01	2.01	2.01
SEP 13	.32	.42	.47	.49	.52	.56	.57	.57	.58	.58	.58	.58
SEP 16	.28	.35	.45	.53	.75	1.05	1.21	1.25	1.27	1.27	1.28	1.29
SHREVEPORT												
MAY 27	.30	.58	.75	.93	1.11	1.23	1.30	1.33	1.34	1.40	1.40	1.40
JUN 16	.25	.48	.57	.66	.89	1.08	1.11	1.23	1.32	1.33	1.40	1.48
JUL 27	.25	.39	.48	.51	.52	.53	.53	.54	.54	.54	.54	.54
AUG 13	.25	.49	.55	.62	.65	.67	.67	.67	.67	.67	.67	.96
AUG 14	.30	.52	.70	.93	1.20	1.22	1.24	1.29	1.31	1.35	1.38	1.48
AUG 28	.32	.51	.60	.68	.71	.86	.87	.89	.89	.89	.89	.89
SEP 5	.25	.35	.48	.56	.66	.78	.88	1.07	1.13	1.30	1.32	1.32
NOV 21	.20	.30	.33	.52	.65	.68	.73	.88	1.35	1.38	1.40	1.54
NOV 21	.30	.55	.55	.65	1.00	1.18	1.23	1.23	1.25	1.25	1.25	1.25
NOV 22	.38	.68	.68	.68	.68	.69	.74	.76	.76	.76	.76	.76
MAINE												
CARIBOU												
JUN 5	.27	.34	.35	.36	.38	.39	.40	.41	.41	.43	.45	.46
AUG 31	.20	.33	.37	.39	.41	.47	.50	.57	.57	.57	.57	.57
PORTLAND												
NOV 29	.24	.32	.35	.38	.45	.65	.73	.89	1.00	1.13	1.19	1.26
MARYLAND												
BALTIMORE												
APR 30	.40	.53	.68	.77	.79	.87	.91	1.07	1.09	1.09	1.09	1.09
JUN 5	.40	.46	.55	.58	.75	.96	.99	1.00	1.00	1.00	1.00	1.00
JUN 20	.18	.24	.28	.45	.50	.63	.69	.71	.73	.73	.74	.74
JUN 29	* .75	*1.20	*1.40	1.60	*1.75	2.05	2.55	2.66	2.80	2.83	2.84	2.85
AUG 13	.15	.28	.38	.45	.68	.73	.73	.73	.73	.78	.79	.85
AUG 19	.25	.46	.53	.58	.76	.80	1.11	1.49	1.54	1.57	1.63	1.67
BALTIMORE U												
JUN 20	.30	.50	.65	.73	.80	.94	1.15	1.35	1.40	1.42	1.42	1.42
FREDERICK C												
MAY 29	.50	.95	1.15	1.15	1.18	1.19	1.20	1.20	1.20	1.20	1.20	1.20
JUL 29	.28	.38	.40	.54	.65	.70	.70	.70	.70	.70	.70	.70
AUG 13	.25	.27	.27	.28	.30	.30	.30	.33	.33	.33	.33	.33
AUG 19	.28	.43	.57	.65	.72	.77	.78	.78	.78	.78	.80	.82
AUG 20	.31	.56	.64	.65	.66	.68	.69	.71	.71	.72	.74	.74
MASSACHUSETTS												
BOSTON												
JUN 6	.25	.37	.40	.44	.49	.54	.56	.56	.56	.56	.56	.56
JUN 9	.23	.43	.46	.48	.50	.51	.51	.59	.61	.67	.68	.68
NOV 29	.20	.38	.43	.49	.62	.67	.72	.76	.80	.89	.91	1.02
NANTUCKET												
FEB 12	.27	.44	.52	.56	.66	.89	.97	1.05	1.17	1.26	1.34	1.37
AUG 10	.20	.35	.41	.42	.42	.42	.42	.42	.45	.55	.56	.56
AUG 13	.44	.53	.66	.80	.84	.93	.97	1.16	1.26	1.32	1.43	1.49
AUG 20	.21	.30	.50	.57	.72	.84	1.13	1.25	1.31	1.31	1.32	1.33
SEP 16	.16	.29	.42	.53	.70	.76	.82	.86	.88	.90	.91	.91
PITTSFIELD												
JUN 6	.45	* .84	1.05	1.13	1.18	1.21	1.22	1.22	1.22	1.23	1.25	1.25
WORCESTER	NONE											
MICHIGAN												
ALPENA												
MAY 8	.18	.23	.35	.38	.39	.39	.53	.54	.64	.72	.79	.79
JUN 6	.39	.51	.57	.78	.90	.99	1.00	1.01	1.02	1.03	1.03	1.03
JUN 17	.46	.56	.56	.56	.56	.56	.56	.56	.56	.58	.58	.58
JUN 19	.15	.25	.36	.38	.50	.62	.72	.82	.85	.87	.91	.92
AUG 30	.36	.35	.41	.44	.45	.47	.50	.55	.58	.59	.59	.60
DETROIT												
MAR 19	.26	.34	.35	.36	.37	.37	.37	.38	.39	.39	.39	.39
JUN 9	.20	.36	.44	.48	.50	.53	.56	.56	.56	.56	.56	.56
JUN 9	.33	.46	.51	.62	.82	1.24	1.46	1.47	1.47	1.47	1.47	1.47
JUL 22	.40	.77	.99	1.07	1.12	1.13	1.15	1.20	1.22	1.24	1.27	1.33

C Record ended October 31, 1963

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
MICHIGAN												
DETROIT M WAYNE												
MAY 9	.27	.39	.40	.41	.43	.43	.43	.43	.43	.43	.43	.43
MAY 10	.17	.32	.39	.44	.62	.73	.81	.87	.89	.91	.91	.94
MAY 28	.30	.47	.52	.60	.75	.88	.92	.95	.97	1.00	1.00	1.00
JUN 9	.35	.65	.75	.89	.98	1.01	1.06	1.15	1.20	1.21	1.22	1.22
JUL 22	.20	.30	.33	.35	.39	.41	.43	.43	.43	.43	.43	.43
JUL 28	.25	.30	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
DETROIT WILLOW RUN												
APR 18-19	.23	.32	.37	.42	.42	.47	.47	.47	.47	.47	.47	.47
MAY 9-10	.19	.28	.31	.41	.60	.78	.84	.95	.97	.98	1.00	1.03
MAY 9	.26	.37	.48	.57	.60	.61	.62	.62	.62	.62	.62	.62
JUN 6	.35	.41	.42	.42	.43	.43	.44	.45	.65	.66	.67	.70
ESCANABA U C												
MAY 7	.40	.57	.62	.65	.66	.68	.69	.72	.84	.88	.92	.98
MAY 8	.30	.36	.41	.48	.50	.51	.53	.54	.54	.55	.58	.60
JUL 1	.19	.31	.40	.45	.47	.53	.54	.82	.83	.83	.83	.83
JUL 6	.34	.59	.80	.99	1.01	1.01	1.01	1.09	1.19	1.28	1.35	1.50
JUL 19	.35	.55	.67	.74	1.01	1.25	1.29	1.31	1.34	1.35	1.35	1.35
FLINT												
MAR 19	.25	.35	.40	.41	.42	.45	.62	.65	.65	.65	.65	.65
JUN 9	.28	.32	.33	.34	.40	.43	.49	.65	.73	.80	.92	.95
GRAND RAPIDS												
APR 18	.30	.49	.62	.73	.99	1.06	1.09	1.13	1.17	1.17	1.17	1.18
APR 30	.24	.36	.38	.44	.58	.67	.74	.79	.82	.86	.91	1.03
MAY 10	.39	.45	.51	.57	.63	.70	.72	.72	.72	.72	.72	.72
JUN 9	.38	.76	1.08	1.24	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70
JUL 17	.36	.70	.78	1.02	1.33	1.43	1.49	1.49	1.49	1.49	1.49	1.49
SEP 11	.14	.26	.35	.41	.52	.57	.70	.87	.96	1.13	1.22	1.28
NOV 17	.26	.34	.36	.38	.42	.54	.65	.66	.66	.68	.72	.92
LANSING												
JUN 6	.65	*1.05	1.15	1.64	*1.94	1.99	2.06	2.11	2.12	*2.70	3.80	*4.06
JUL 31	.38	.47	.48	.50	.50	.50	.50	.50	.50	.50	.50	.50
MARQUETTE U												
JUL 17	.38	.45	.50	.51	.55	.57	.57	.57	.57	.57	.57	.57
MUSKEGON												
MAY 9	.22	.31	.36	.38	.39	.43	.43	.43	.43	.44	.45	.45
JUN 6	.26	.28	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
JUN 8	.17	.30	.34	.35	.37	.43	.49	.55	.55	.55	.55	.55
JUN 9	.25	.39	.44	.61	.83	.88	.89	.89	.89	.89	.89	.89
NOV 17	* .53	.61	.72	.79	.82	.83	.88	.89	1.09	1.29	1.47	1.52
SAULT STE MARIE												
AUG 3	.25	.28	.29	.32	.38	.38	.39	.42	.56	.58	.58	.58
AUG 7	.30	.42	.46	.47	.51	.52	.53	.53	.53	.54	.54	.54
MINNESOTA												
DULUTH												
SEP 18	.30	.51	.54	.56	.59	.66	.69	.77	.80	.80	.80	.81
INTERNATIONAL FALLS												
MAY 31	.22	.34	.36	.40	.42	.44	.46	.49	.49	.49	.49	.49
AUG 12	.27	.47	.50	.56	.65	.70	.72	.72	.72	.72	.88	1.06
SEP 11	.29	.42	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
SEP 18	.35	.63	.65	.70	.84	.84	.86	.87	.89	1.11	1.23	1.27
MINNEAPOLIS												
MAY 9	.20	.36	.43	.48	.55	.59	.64	.70	.71	.72	.73	.73
JUL 27	.19	.32	.42	.45	.47	.54	.57	.58	.59	.61	.65	.67
AUG 8	.25	.32	.34	.36	.37	.41	.45	.45	.45	.45	.45	.45
SEP 11	.23	.44	.44	.45	.45	.57	.57	.57	.57	.57	.57	.57
ROCHESTER												
JUN 7	.35	.60	.77	.89	.91	.91	.91	.91	.91	.91	.91	.91
JUN 29	.25	.38	.45	.57	.57	.73	.74	.74	.74	.81	1.37	1.40
JUL 16	.29	.46	.51	.54	.55	.56	.56	.73	.79	.86	.95	.97
JUL 18	.20	.32	.34	.35	.35	.36	.39	.60	.75	.80	.84	.86
AUG 23	.27	.47	.61	.65	.67	.69	.70	.71	.71	.71	.71	.71
AUG 28	.24	.45	.55	.63	.67	.74	.81	1.05	1.13	1.22	1.35	1.39
SEP 19	.16	.32	.32	.32	.32	.35	.36	.37	.50	.52	.52	.57
OCT 24	.17	.32	.36	.45	.45	.45	.45	.45	.45	.45	.45	.45
ST CLOUD												
MAY 27	.11	.21	.27	.33	.51	.62	.67	.69	.87	.93	1.13	1.25
JUN 8	.27	.39	.42	.46	.47	.48	.48	.48	.48	.48	.48	.48
JUL 1	.28	.33	.38	.41	.47	.51	.53	.56	.57	.57	.57	.57
JUL 24	.18	.34	.35	.38	.40	.43	.45	.46	.47	.49	.50	.52
AUG 2	.28	.48	.61	.68	.79	.85	.97	1.02	1.10	1.12	1.13	1.13
AUG 8	.35	.70	.88	1.03	1.13	1.16	1.23	1.27	1.31	1.35	1.39	1.40
AUG 12	.32	.58	.79	.82	.88	.82	1.19	1.22	1.23	1.36	1.63	1.82
SEP 18	.16	.32	.33	.35	.36	.37	.39	.39	.39	.41	.44	.49
SEP 18	.22	.30	.34	.42	.54	.66	.82	.86	.88	.94	.97	1.02
MISSISSIPPI												
JACKSON												
JAN 11	.38	.68	.70	.73	.78	.87	.92	.96	1.00	1.01	1.02	1.24
MAR 1	.25	.33	.35	.40	.47	.50	.56	.60	.62	.63	.63	.63
APR 19	.39	.62	.89	1.14	1.26	1.27	1.34	1.34	1.35	1.35	1.49	1.53
MAY 5	.45	.75	.85	.88	1.26	1.28	1.29	1.29	1.29	1.29	1.29	1.29
JUN 20	.54	* .97	1.02	1.06	1.16	1.21	1.24	1.25	1.28	1.39	1.41	1.51
JUL 8	.54	.95	1.08	1.20	1.55	1.70	2.17	2.55	2.65	2.70	3.08	3.39
JUL 18	.11	.21	.32	.40	.45	.49	.50	.50	.50	.50	.50	.50
AUG 14	.20	.35	.38	.50	.52	.55	.60	.62	.63	.66	.68	.68
AUG 19	.21	.30	.37	.41	.46	.46	.46	.46	.46	.46	.46	.46
SEP 4	.12	.24	.35	.43	.51	.55	.56	.56	.56	.56	.56	.56
NOV 22	.28	.31	.32	.32	.33	.35	.38	.51	.57	.75	.81	.84
MERIDIAN												
MAR 19	.32	.47	.54	.55	.55	.57	.57	.57	.57	.57	.57	.57
MAY 28	.29	.44	.45	.47	.50	.50	.60	.62	.66	.66	.64	.64
JUN 22	.16	.31	.33	.36	.38	.54	.57	.57	.57	.57	.57	.57
JUN 30	.37	.40	.42	.42	.42	.42	.42	.42	.42	.42	.42	.42
JUL 3 T	.20	.30	.40	.60	.70	.70	.70	.70	.70	.70	.70	.70
JUL 15	.32	.37	.37	.38	.64	.64	.64	.64	.64	.64	.64	.64
JUL 17	.23	.38	.50	.57	.75	.82	.84	.85	.85	.85	.85	.85
AUG 11	.31	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35	.35
AUG 20	.60	1.00	1.30	1.60	2.10	2.60	3.20	3.30	3.30	3.35	3.35	3.35
NOV 1	.29	.35	.38	.40	.43	.50	.55	.58	.61	.61	.63	.63

T Clock malfunction
C Record ended September 1, 1963

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
MISSISSIPPI												
MERIDIAN												
NOV 22	.20	.33	.35	.38	.52	.67	.83	.90	.95	1.07	1.15	1.23
VICKSBURG U												
MAR 26	.20	.39	.41	.41	.41	.41	.41	.45	.48	.49	.49	.49
APR 19	.62	1.12	1.23	1.43	1.67	1.91	1.96	2.00	2.00	2.00	2.00	2.00
MAY 28	.16	.28	.42	.54	.61	.67	.70	.74	.78	.80	.81	.81
JUN 1	.23	.26	.29	.35	.46	.75	.75	.75	.75	.75	.75	.75
JUN 8	.37	.49	.54	.55	.56	.58	.59	.59	.59	.59	.59	.59
JUL 12	.43	.78	1.02	1.24	1.58	1.90	2.04	2.16	2.48	2.65	2.65	2.65
JUL 21	.15	.25	.32	.39	.61	.76	.77	.77	.77	.77	.77	.77
JUL 22	.18	.35	.47	.57	.71	1.00	1.02	1.05	1.09	1.12	1.14	1.14
JUL 26	.17	.27	.35	.36	.38	.38	.38	.42	.42	.43	.49	.50
JUL 27	.23	.39	.51	.62	.80	.81	.81	.81	.81	.81	.90	.90
JUL 30	.26	.38	.48	.55	.67	.68	.68	.68	.68	.68	.68	.68
AUG 10	.18	.30	.40	.42	.42	.44	.45	.45	.45	.45	.45	.45
AUG 14	.70	.98	1.19	1.36	1.45	2.29	2.87	2.88	3.35	4.07	4.40	4.42
MISSOURI												
COLUMBIA												
MAY 15	.28	.38	.43	.44	.50	.62	.65	.73	.78	.79	.82	.83
MAY 16	.31	.44	.51	.52	.54	.54	.55	.56	.56	.56	.56	.56
JUN 28	.28	.32	.40	.45	.45	.46	.46	.47	.47	.52	.53	.53
JUL 2	.14	.28	.36	.48	.68	.88	1.18	1.36	1.50	1.60	1.60	1.60
JUL 6	.62	.75	1.05	1.24	1.38	1.44	1.51	1.54	1.54	1.54	1.54	1.54
JUN 27	.20	.34	.52	.55	.58	.71	.74	.74	.75	.77	.78	.78
JUL 28	.18	.26	.34	.42	.55	.66	.71	.74	.78	.81	.82	.82
AUG 12	.39	.56	.56	.58	.72	.77	.77	.84	.85	.86	.88	.88
AUG 24	.15	.23	.28	.42	.56	.62	.78	.81	.82	.87	1.09	1.13
SEP 4	.22	.32	.33	.34	.35	.37	.38	.38	.38	.38	.38	.38
SEP 11	.20	.22	.23	.37	.44	.61	.70	.77	.77	.77	.77	.77
KANSAS CITY												
MAY 15	.25	.45	.62	.74	.82	.84	.89	.93	.98	.98	.98	.98
MAY 25	.28	.48	.57	.59	.66	.72	.81	.85	.86	.86	.86	1.05
JUN 19	.21	.32	.40	.47	.50	.52	.53	.54	.54	.54	.54	.54
JUN 20	.16	.30	.46	.49	.61	.62	.62	.69	.83	.85	.87	.90
JUL 12	.25	.48	.63	.83	1.16	1.44	1.98	2.29	2.44	2.61	2.69	2.81
JUL 13	.26	.36	.43	.58	.61	.61	.63	.65	.67	.68	.69	.73
AUG 1	.25	.33	.34	.39	.54	.56	.78	1.01	1.01	1.01	1.05	1.08
NOV 22	.35	.46	.53	.55	.55	.51	.67	.79	.81	.81	.81	.81
NOV 22	.18	.35	.42	.45	.50	.51	.54	.55	.56	.56	.56	.56
ST JOSEPH												
MAR 4	.33	.39	.42	.44	.47	.52	.57	.63	.68	.73	.83	.87
MAY 15	.50	.79	1.00	1.20	1.80	2.07	2.35	2.80	3.00	3.20	3.26	3.37
JUN 2	.23	.32	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
JUN 12	.25	.40	.55	.65	.80	.95	1.00	1.05	1.13	1.22	1.40	1.52
JUL 12	.30	.42	.49	.50	.50	.50	.50	.50	.50	.50	.50	.50
AUG 1	.35	.40	.68	.70	.72	.75	.78	.78	.78	.82	.89	1.05
NOV 22	.25	.34	.36	.37	.37	.37	.37	.37	.37	.37	.38	.38
ST LOUIS												
MAY 12	.26	.43	.49	.73	.88	1.04	1.33	1.39	1.45	1.46	1.46	1.46
MAY 16	.32	.54	.75	.90	1.02	1.05	1.05	1.05	1.05	1.05	1.05	1.05
JUN 10	.22	.33	.41	.49	.52	.60	.60	.76	.82	.84	.84	.94
JUN 13	.28	.55	.71	.72	.74	.75	1.16	1.34	1.36	1.36	1.36	1.36
JUN 19	.20	.33	.38	.43	.46	.50	.54	.62	.66	.74	.85	.94
OCT 17	.30	.50	.61	.66	.78	.84	.87	.90	.93	.96	.98	1.02
NOV 22	.23	.31	.35	.40	.58	.69	.79	.84	.86	.89	.91	.98
SPRINGFIELD												
MAY 4	.40	.55	.71	.80	.96	1.09	1.20	1.25	1.26	1.26	1.26	1.26
MAY 13	.14	.25	.33	.46	.66	.87	.90	.92	1.08	1.27	1.52	1.62
MAY 16	.31	.42	.50	.61	.93	1.15	1.15	1.15	1.15	1.15	1.15	1.15
MAY 26	.26	.36	.45	.47	.51	.56	.74	.91	.96	.99	1.02	1.06
JUN 15	.17	.29	.29	.38	.50	.56	.72	1.04	1.18	1.45	1.48	1.56
JUN 15	.24	.34	.38	.42	.46	.57	.66	.68	.70	.74	.74	.75
JUN 15	.21	.30	.32	.35	.38	.48	.58	.74	.98	.99	.99	.99
JUN 29	.27	.47	.55	.60	.65	.66	.67	.69	.71	.72	.73	.73
JUN 30	.32	.46	.54	.62	.67	.69	.70	.75	.76	.76	.77	.78
JUL 22	.26	.44	.50	.53	.58	.61	.62	.65	.65	.65	.65	.65
AUG 12	.32	.46	.58	.67	.69	.70	.79	.81	.81	.82	.85	.86
SEP 10	.32	.50	.51	.53	.70	.81	.85	.85	.85	.85	.85	.85
MONTANA												
BILLINGS	NONE											
GLASGOW												
JUN 20	.17	.25	.34	.50	.52	.53	.53	.54	.54	.54	.54	.54
JUN 21	.16	.24	.40	.47	.56	.59	.65	.66	.66	.66	.66	.66
JUN 28	.20	.28	.41	.52	.55	.60	.62	.68	.76	.81	.88	.95
GREAT FALLS												
JUN 16	.30	.41	.43	.45	.49	.49	.49	.49	.49	.49	.49	.49
JUL 5	.20	.32	.42	.44	.62	.62	.62	.62	.62	.62	.62	.62
HAVRE	NONE											
HELENA	NONE											
KALISPELL	NONE											
MISSOULA												
JUL 14	.21	.30	.31	.32	.34	.36	.36	.36	.36	.36	.36	.41
AUG 10	.29*	.51	.72	.74	.75	.76	.76	.76	.76	.76	.76	.76
NEBRASKA												
GRAND ISLAND												
MAY 11	.35	.50	.51	.53	.53	.53	.53	.53	.53	.53	.53	.53
MAY 14	.45	.90*	1.13	1.21	1.39	1.42	1.46	1.47	1.52	1.58	1.63	1.68
JUN 6	.10	.20	.28	.35	.51	.79	1.00	1.13	1.15	1.17	1.17	1.17
JUL 16	.20	.30	.35	.38	.41	.47	.47	.47	.47	.47	.47	.47
JUL 31	.30	.40	.46	.49	.50	.53	.61	.62	.62	.62	.62	.62
AUG 26	.30	.55	.70	.75	1.05	1.13	1.16	1.16	1.16	1.16	1.16	1.16
SEP 10	.23	.40	.55	.61	.68	.94	1.02	1.14	1.30	1.39	1.46	1.48
LINCOLN U												
MAY 14	.21	.29	.37	.44	.47	.47	.48	.50	.70	.80	.84	.95
JUN 24	.34	.49	.60	.68	.74	.83	.90	1.00	1.33	1.72	1.90	1.98
JUN 24	.28	.51	.63	.69	1.06	1.29	1.36	1.39	1.42	1.44	1.44	1.45
JUL 5	.23	.37	.41	.42	.44	.50	.54	.70	.76	.83	.89	.97
SEP 1	.22	.38	.52	.59	.77	1.12	1.22	1.28	1.35	1.39	1.42	1.42

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
NEBRASKA												
NORFOLK												
JUN 5	.27	.42	.58	.62	.70	.73	.75	.75	.75	.75	.75	.75
JUN 26	.20	.33	.38	.46	.68	.80	.85	.86	.86	.86	.86	.86
AUG 27	.30	.55	.77	.84	.88	.90	.91	.92	.94	.95	.96	.97
NORTH PLATTE												
MAY 29	.25	.31	.51	.56	.85	.88	.92	.97	1.01	1.06	1.16	1.23
JUN 15	.20	.26	.36	.44	.68	.72	1.04	1.07	1.08	1.12	1.12	1.12
SEP 9	.25	.42	.45	.51	.78	.78	.82	.94	.94	.94	.94	.94
SEP 14	.25	.30	.30	.31	.33	.36	.36	.36	.36	.36	.36	.36
SEP 15	.25	.33	.41	.46	.76	.95	1.22	1.64	2.05	2.24	2.40	2.47
OMAHA												
APR 28	.51	.71	.85	1.02	1.10	1.18	1.21	1.21	1.21	1.21	1.21	1.21
JUN 6	.34	.53	.68	.84	.89	1.08	1.13	1.41	1.41	1.41	1.41	1.41
JUL 5	.26	.31	.36	.41	.42	.42	.42	.42	.42	.42	.42	.42
JUL 30	.24	.34	.43	.55	.74	.81	.81	.81	.81	.81	.81	.81
AUG 1	.39	.65	.75	.85	.88	.91	.91	.91	.91	.91	.91	.91
AUG 27	.22	.35	.40	.48	.65	.68	.82	.84	.86	.86	.87	1.33
OCT 17	.30	.46	.50	.53	.54	.54	.54	.55	.55	.55	.55	.55
SCOTTSBLUFF												
MAY 30	.24	.44	.55	.61	.67	.71	1.00	1.13	1.20	1.21	1.21	1.21
JUL 26	.30	.54	.62	.90	.94	1.04	1.05	1.07	1.08	1.08	1.08	1.08
VALENTINE												
MAY 15	.38	.66	.88	1.03	1.09	1.11	1.13	1.15	1.15	1.15	1.15	1.15
JUN 2	.16	.30	.35	.37	.40	.41	.47	.51	.51	.51	.51	.51
JUN 5	.21	.39	.41	.41	.41	.41	.44	.44	.51	.51	.51	.51
JUL 29	.10	.20	.25	.35	.50	.69	.74	.78	.90	.92	.92	.93
AUG 26	.30	.52	.68	.80	.95	1.11	1.30	1.39	1.42	1.50	1.52	1.52
NEVADA												
ELKO	NONE											
ELY	NONE											
LAS VEGAS												
SEP 4	.20	.32	.43	.48	.66	.66	.72	.82	.84	1.01	1.04	1.05
RENO												
MAY 24	.28	.52	.64	.83*	.92	1.02*	1.27	1.28	1.28*	1.28	1.28*	1.28
WINNEMUCCA	NONE											
NEW HAMPSHIRE												
CONCORD												
JUL 8	.25	.45	.60	.73	.97	1.32	1.43	1.43	1.43	1.51	1.57	1.59
NEW JERSEY												
ATLANTIC CITY												
AUG 1	.34	.44	.45	.46	.46	.48	.48	.48	.48	.49	.49	.49
SEP 4	.30	.56	.62	.66	.69	.69	.70	.71	.78	.80	.80	.80
SEP 16	.17	.31	.39	.54	.68	.78	.88	1.12	1.18	1.26	1.34	1.40
NOV 29	.15	.28	.43	.54	.59	.71	.81	.88	.93	1.00	1.17	1.22
NEWARK												
JUL 20	.40	.64	.70	.76	.78	.79	.79	.79	.79	.79	.79	.79
AUG 1	.17	.33	.44	.56	.67	.69	.71	.75	.78	.81	.81	.81
TRENTON U												
JUN 29	.14	.25	.35	.43	.52	.63	.73	.74	.75	.75	.75	.76
JUL 20	.65	1.16	1.26	1.31	1.32	1.32	1.32	1.32	1.32	1.32	1.32	1.32
JUL 20	.30	.46	.57	.59	.62	.66	.66	.68	.70	.70	.70	.70
AUG 19-20	.15	.26	.38	.43	.48	.51	.52	.55	.55	.56	.56	.57
NEW MEXICO												
ALBUQUERQUE												
AUG 10	.20	.33	.37	.46	.67	.75	.80	.82	.85	.91	.98	1.00
CLAYTON												
MAY 30	.15	.22	.28	.33	.50	.58	.59	.66	.70	.75	.75	.75
JUN 18	.25	.40	.42	.49	.51	.52	.54	.59	.61	.66	.69	.69
JUL 12	.32*	.47	.49	.49	.54	.56	.57	.60	.60	.60	.60	.60
AUG 10	.25*	.49*	.57	.70*	1.02	1.14*	1.56	1.70	1.78*	1.98	2.55*	2.63
RATON												
SEP 20	.62	.68	.73	.74	.74	.74	.74	.74	.74	.74	.74	.84
ROSWELL												
AUG 31	.28	.34	.36	.40	.44	.72	.81	.85	.85	.85	.96	.96
SILVER CITY												
AUG 3	.32*	.58*	.70	.82*	1.09	1.33*	1.44	1.56	1.61*	1.81	1.93*	2.01
NEW YORK												
ALBANY												
JUN 9	.17	.26	.37	.38	.38	.38	.38	.38	.38	.38	.38	.38
JUN 20	.33	.42	.48	.52	.61	.61	.62	.62	.62	.62	.62	.62
BINGHAMTON												
MAY 10	.21	.26	.42	.52	.56	.58	.59	.59	.60	.68	.70	.76
JUN 10	.28	.40	.51	.53	.53	.53	.53	.53	.53	.53	.53	.53
JUN 14	.38	.62	.73	.90	1.03	1.14	1.20	1.21	1.21	1.21	1.21	1.21
JUN 28	.30	.58	.79	.92	1.34	1.53	1.60	1.61	1.65	1.65	1.65	1.65
JUL 7	.26	.30	.42	.44	.48	.48	.48	.48	.48	.48	.48	.72
AUG 7	.23	.38	.48	.55	.59	.60	.62	.67	.68	.68	.68	.68
BUFFALO												
MAY 8	.20	.33	.34	.35	.41	.43	.47	.48	.53	.55	.58	.58
JUL 2	.25	.42	.48	.66	.96	.99	1.00	1.00	1.00	1.00	1.00	1.00
JUL 29	.35	.50	.56	.59	.70	.74	.76	.81	.85	.85	.85	.85
AUG 7	.32	.63	.65	.74	.89	1.36	1.75	2.00	2.17	2.25	2.78	2.86
NEW YORK CENT PK												
JUN 29	.29	.46	.50	.52	.54	.55	.78	.80	.80	.80	.80	.80
AUG 1	.45	.61	.81	.86	.97	1.00	1.04	1.06	1.08	1.11	1.11	1.11
NOV 29	.20	.33	.42	.47	.65	.76	1.02	1.11	1.21	1.25	1.29	1.32

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
NEW YORK												
NEW YORK LA GUARDIA												
AUG 1	.20	.30	.36	.47	.49	.49	.49	.49	.49	.49	.49	.49
AUG 1	.20	.35	.55	.70	.88	.96	.96	.96	.96	.96	.96	.96
AUG 20	.27	.49	.66	.85	.94	.98	1.02	1.06	1.08	1.09	1.11	1.12
AUG 23	.34	.42	.48	.53	.57	.58	.58	.58	.58	.58	.58	.58
NORTH CAROLINA												
ASHEVILLE U												
MAY 28	.16	.29	.38	.40	.47	.51	.52	.52	.52	.52	.53	.53
AUG 29	.51	.88	1.04	1.43	1.81	1.99	2.06	2.11	2.16	2.24	2.31	2.35
SEP 4	.18	.31	.33	.33	.33	.33	.33	.33	.33	.33	.33	.34
SEP 12	.25	.35	.44	.62	.82	.87	.87	.87	.87	.87	.87	.87
CAPE HATTERAS R												
JAN 21	.32	.53	.54	.55	.56	.58	.60	.63	.62	.62	.62	.62
APR 7	.36	.71	.80	.95	1.30	1.65	2.05	2.31	2.39	3.23	3.56	3.87
MAY 23	.20	.29	.38	.42	.48	.53	.88	.81	.81	.81	.81	.81
JUN 2	.12	.24	.34	.38	.51	.73	.77	.90	.95	1.09	1.44	1.59
JUN 8	.34	.66	.70	.95	1.04	1.23	1.27	1.28	1.28	1.28	1.28	1.28
JUN 21	.24	.35	.38	.39	.46	.47	.49	.50	.51	.51	.51	.56
JUL 26	.21	.30	.40	.51	.59	.71	.99	1.04	1.08	1.12	1.12	1.14
AUG 20	.25	.32	.35	.44	.50	.56	.56	.56	.58	.65	.65	.65
SEP 5	.24	.41	.48	.70	.82	.93	1.00	1.03	1.06	1.07	1.08	1.10
SEP 5	.15	.30	.32	.36	.55	.63	.74	1.10	1.28	1.43	1.63	1.76
NOV 29	.25	.48	.57	.66	.76	.96	.99	.99	.99	.99	1.00	1.00
DEC 8	.18	.33	.34	.40	.66	.96	1.16	1.19	1.26	1.28	1.29	1.29
CHARLOTTE												
MAY 17	.21	.42	.61	.81	.98	1.09	1.09	1.09	1.09	1.09	1.09	1.09
JUL 14	.20	.29	.39	.44	.45	.45	.46	.49	.50	.50	.50	.50
JUL 16	.16	.27	.38	.46	.51	.52	.53	.53	.53	.53	.53	.53
JUL 29	.26	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36	.36
AUG 19	.16	.30	.35	.36	.36	.36	.36	.36	.36	.36	.36	.36
AUG 22	.30	.54	.64	.68	.68	.68	.68	.68	.68	.68	.68	.68
AUG 30	.11	.21	.31	.39	.60	.68	.88	.90	1.04	1.22	1.26	1.30
GREENSBORO												
JUN 20	.14	.24	.29	.36	.46	.75	.79	.80	.81	.81	.82	.83
JUN 30	.25	.41	.50	.50	.50	.50	.50	.50	.50	.50	.50	.50
JUL 23	.31	.54	.72	1.02	1.35	1.45	1.46	1.59	1.61	1.65	1.65	1.66
AUG 26	.17	.30	.39	.50	.58	.73	.78	.85	.91	.95	.98	1.09
RALEIGH												
MAY 21	*.80	1.35	1.40	1.48	1.50	1.52	1.52	1.52	1.52	1.52	1.52	1.52
MAY 28	.25	.35	.38	.41	.47	.49	.53	.54	.54	.54	.54	.54
JUN 4	.15	.30	.30	.30	.30	.34	.35	.35	.35	.35	.40	.40
JUL 2	.21	.41	.45	.48	.63	.67	.68	.68	.68	.72	.82	.83
JUL 12	.25	.30	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
JUL 31	.25	.39	.43	.55	.80	.82	.82	.82	.84	.85	.87	.87
AUG 13	.33	.38	.39	.54	.66	.67	.67	.67	.67	.67	.67	.67
AUG 20	.30	.51	.53	.56	.57	.62	.64	.64	.64	.64	.64	.64
WILMINGTON												
FEB 12	.20	.36	.38	.47	.76	.93	.98	1.00	1.05	1.09	1.14	1.15
MAY 21	.45	.55	.60	.75	.96	1.22	1.47	1.85	2.12	2.40	3.05	3.52
MAY 23	.45	.74	.76	.83	.90	.98	1.05	1.10	1.10	1.10	1.10	1.11
JUN 8	.25	.42	.43	.45	.50	.50	.50	.51	.51	.51	.51	.51
JUN 17	.20	.40	.55	.65	.70	.70	.70	.72	.72	.72	.72	.72
JUL 2	.25	.39	.46	.47	.48	.49	.56	.70	.72	.72	.72	.72
JUL 2	.60	1.19	1.34	1.59	1.84	2.36	2.75	2.85	1.90	1.92	1.95	2.95
JUL 16	.40	.70	.90	1.04	1.13	1.15	1.15	1.17	1.22	1.23	1.23	1.23
JUL 25	.30	.55	.60	.76	.90	.93	.95	1.25	1.43	1.47	1.49	1.52
JUL 27	.42	.66	.68	.73	.74	.76	.84	.86	.89	.91	.91	.91
JUL 28	.43	.84	.87	.93	.99	1.31	1.38	1.44	1.48	1.56	1.58	1.58
AUG 10	.33	.37	.38	.43	.62	.65	.70	1.13	1.20	1.25	1.25	1.25
AUG 26	.23	.30	.33	.42	.47	.49	.52	.58	.60	.63	.63	.63
SEP 13	.15	.29	.33	.40	.52	.59	.60	.61	.68	.73	.78	.84
SEP 23	.37	.61	.78	1.02	1.07	1.09	1.11	1.13	1.14	1.15	1.16	1.18
WINSTON SALEM												
MAY 20	.15	.28	.39	.52	.54	.55	.56	.67	.70	.72	.72	.72
MAY 28	.36	.62	.84	.92	1.14	1.50	1.84	2.01	2.03	2.04	2.06	2.06
JUN 3	.32	.52	.59	.70	.78	.81	.83	.84	.84	.84	.84	.84
JUN 7	.34	.59	.75	.77	.78	.78	.78	.78	.78	.78	.78	.78
JUN 20	.25	.41	.50	.53	.53	.53	.57	.60	.60	.60	.60	.60
JUL 1	.18	.28	.42	.53	.78	.95	1.06	1.12	1.14	1.16	1.16	1.16
JUL 25	.22	.40	.55	.70	.78	.83	1.22	1.34	1.39	1.40	1.42	1.46
AUG 30	.13	.25	.32	.44	.62	.72	.74	.76	.76	.92	.99	1.02
SEP 14	.12	.23	.33	.38	.52	.63	.78	.90	1.03	1.10	1.17	1.22
NORTH DAKOTA												
BISMARCK												
MAY 30	.28	.40	.58	.69	.70	.70	.70	.70	.70	.70	.70	.70
JUN 2	.36	.56	.67	.69	.72	.74	.76	.77	.82	.84	.84	.84
JUN 23	.33	.50	.58	.61	.67	.67	.67	.68	.72	.82	.90	1.09
JUN 28	.42	.55	.76	.94	.98	.98	.98	.98	.98	.98	.98	.98
JUL 18	.32	.62	.90	.94	.97	1.04	1.09	1.10	1.10	1.10	1.10	1.10
AUG 1	.30	.44	.46	.47	.47	.47	.47	.47	.47	.47	.47	.47
FARGO												
AUG 8	.16	.32	.37	.38	.39	.39	.39	.39	.39	.39	.39	.53
AUG 11	.20	.35	.38	.43	.60	.70	.86	1.02	1.06	1.17	1.19	1.56
WILLISTON												
JUL 10	.36	.66	.84	1.10	1.68	2.22	2.27	2.36	2.36	2.78	3.34	4.03
JUL 10	.20	.34	.38	.48	.62	.65	.65	.65	.65	.65	.65	.65
OHIO												
AKRON												
APR 17	.15	.21	.33	.40	.46	.52	.53	.56	.61	.62	.64	.64
APR 19	.31	.40	.42	.43	.44	.50	.50	.52	.52	.52	.52	.58
MAY 10	.38	.42	.47	.57	.63	.63	.64	.64	.64	.64	.67	.67
JUN 6	.14	.26	.36	.47	.54	.58	.59	.59	.59	.59	.59	.59
JUN 10	.26	.37	.49	.58	.64	.69	.74	.82	.85	.86	.86	.86
CINCINNATI OBS												
JAN 11	.30	.35	.41	.46	.58	.74	.85	.90	.91	.95	.96	.96
MAR 4	.14	.25	.35	.45	.57	.64	.71	.85	1.12	1.33	1.54	1.67
APR 19	.27	.29	.30	.30	.30	.30	.30	.30	.30	.30	.30	.42
MAY 13	.33	.58	.80	.98	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
MAY 13	.32	.53	.65	.81	1.03	1.42	1.68	1.72	1.76	1.82	1.97	1.98
MAY 28	.15	.28	.34	.48	.51	.52	.52	.52	.52	.52	.52	.52
JUL 20	.32	.54	.59	.64	.77	1.01	1.18	1.31	1.39	1.43	1.48	1.58

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
OHIO												
CINCINNATI U												
JAN 11	.19	.24	.35	.39	.43	.54	.65	.75	.78	.79	.80	.81
MAR 4	.14	.22	.28	.37	.56	.65	.72	.80	.91	.97	1.17	1.39
MAY 13	.38	.65	.99	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
MAY 13	.24	.41	.55	.63	.67	.79	1.09	1.19	1.26	1.27	1.38	1.45
JUL 24	.19	.29	.36	.46	.62	.95	1.17	1.28	1.36	1.44	1.48	1.56
SEP 12	.24	.33	.36	.37	.38	.39	.39	.44	.44	.44	.45	.45
CLEVELAND												
JUN 7	.23	.3	.32	.33	.35	.4	.44	.52	.58	.63	.65	.66
JUN 29	.24	.44	.58	.67	.70	.73	.73	.99	1.02	1.02	1.02	1.02
SEP 11	.23	.36	.38	.42	.49	.49	.49	.54	.56	.56	.56	.56
SEP 12	.28	.54	.66	.70	.80	.86	.92	1.02	1.04	1.16	1.16	1.16
COLUMBUS												
APR 17	.38	.44	.52	.54	.55	.58	.60	.62	.62	.62	.64	.64
APR 22	.17	.27	.37	.41	.64	.71	.81	.85	.87	.87	.87	.87
DAYTON												
APR 22	.39	.56	.75	.80	.83	.83	.89	.91	.91	.91	.91	.91
MAY 27	.32	.62	.90	1.02	1.20	1.27	1.35	1.39	1.40	1.40	1.40	1.40
JUN 5	.24	.32	.44	.58	.80	.91	.97	1.00	1.02	1.02	1.02	1.02
JUN 20	.25	.48	.55	.68	.79	.82	1.13	1.20	1.22	1.24	1.26	1.26
JUL 23	.25	.40	.46	.47	.50	.51	.54	.58	.64	.69	.78	.88
MANSFIELD												
MAR 19	.25	.32	.46	.53	.61	.62	.70	.70	.70	.70	.70	.70
APR 19	.24	.31	.35	.36	.42	.44	.55	.55	.55	.55	.57	.57
JUN 10	.23	.44	.48	.50	.55	.55	.55	.55	.55	.55	.55	.55
JUL 16	.35	.36	.35	.35	.35	.40	.40	.40	.40	.40	.40	.40
AUG 3	.16	.32	.41	.50	.55	.57	.57	.57	.57	.57	.57	.57
AUG 3	.22	.35	.45	.48	.50	.54	.53	.53	.53	.53	.53	.53
AUG 3	.24	.33	.38	.40	.43	.43	.43	.43	.43	.43	.43	.43
AUG 4	.20	.38	.43	.48	.50	.55	.57	.58	.58	.58	.58	.58
SANDUSKY U C												
JUN 6	.25	.3	.35	.35	.35	.45	.35	.35	.35	.35	.35	.35
TOLEDO												
MAY 28	.32	.47	.50	.63	.63	.63	.63	.63	.63	.63	.67	.67
JUN 7	.39	.74	.83	.97	1.10	1.24	1.56	1.70	1.79	1.85	1.88	1.93
JUN 9	.25	.32	.32	.32	.32	.32	.32	.35	.35	.35	.38	.39
JUN 29	*.85	.95	1.10	1.27	1.39	1.41	1.41	1.41	1.41	1.41	1.41	1.41
AUG 24	.20	.30	.35	.40	.47	.48	.51	.58	.60	.64	.67	.67
YOUNGSTOWN												
APR 17	.36	.44	.47	.50	.54	.57	.58	.58	.61	.61	.65	.70
OKLAHOMA												
OKLAHOMA CITY												
MAR 30	.25	.35	.40	.43	.65	.85	1.01	1.32	1.32	1.34	1.38	1.41
APR 24	.25	.35	.40	.55	.70	.71	.72	.72	.81	.85	.85	.87
JUN 16	.15	.3	.45	.50	.53	.53	.53	.55	.55	.55	.55	.55
JUN 23	.32	.47	.58	.65	.87	.95	1.01	1.08	1.10	1.12	1.13	1.13
JUL 13	.32	.63	.70	.90	1.22	1.44	1.71	1.86	2.00	2.04	2.04	2.04
JUL 28	.32	.43	.46	.50	.67	.89	1.13	1.19	1.30	1.36	1.41	1.45
JUL 29	.25	.65	.70	.83	.85	1.04	1.20	1.29	1.30	1.33	1.34	1.34
OCT 20	.16	.27	.34	.41	.53	.67	.79	.87	.97	1.05	1.22	1.66
TULSA												
MAR 4	.19	.38	.44	.55	.85	.92	.94	1.28	1.31	1.34	1.35	1.35
MAR 30	.23	.35	.36	.40	.40	.40	.40	.40	.40	.40	.40	.40
MAY 16	.30	.56	.60	.66	.70	.72	.72	.72	.77	.77	.77	.77
JUL 27	.45	.90	1.05	1.30	1.60	2.00	2.47	2.90	3.40	4.30	5.50	5.97
AUG 10	.23	.38	.38	.52	.75	.80	.82	.83	.84	.85	.85	.85
SEP 25	.35	.52	.55	.57	.57	.57	.58	.58	.58	.58	.60	.61
OREGON												
ASTORIA	NONE											
BURNS U	NONE											
EUGENE	NONE											
MEACHAM	NONE											
MEDFORD	NONE											
PENDLETON	NONE											
PORTLAND U												
JUN 20	.19	.47	.62	.63	.65	.65	.65	.65	.68	.69	.71	.71
ROSEBURG	NONE											
SALEM	NONE											
SEXTON SUMMIT R	NONE											
PACIFIC AREA												
CANTON ISLAND												
APR 27	.21	.36	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
JUN 13	.26	.36	.46	.44	.47	.47	.47	.47	.47	.47	.47	.47
AUG 1	.23	.31	.35	.37	.44	.46	.66	.66	.66	.66	.96	.98
AUG 24	.25	.48	.46	.48	.50	.51	.51	.51	.51	.51	.51	.80
SEP 16	.32	.62	.76	.91	1.07	1.16	1.18	1.18	1.18	1.18	1.18	1.18
SEP 25	.22	.42	.33	.4	.51	.51	.65	.81	.81	.81	.81	.81
OCT 29	.24	.31	.31	.31	.32	.32	.32	.32	.32	.32	.32	.32
DEC 4	.27	.37	.41	.44	.44	.44	.44	.44	.44	.44	.44	.44
DEC 25	.26	.35	.40	.45	.58	.75	.83	.87	.90	.90	.90	.90
DEC 26	.16	.31	.35	.36	.36	.38	.53	.62	.73	.84	.86	1.00
DEC 28	.44	.61	.65	.75	.76	.76	.78	.78	.78	.85	.85	.85
ENIWETOK												
MAY 19	M	M	M	M	M	M	M	M	M	M	M	M
AUG 1	.20	.38	.40	.42	.42	.42	.42	.42	.42	.42	.42	.42
AUG 1	.20	.31	.40	.60	.80	1.05	1.32	1.42	1.62	1.82	1.82	1.97
AUG 24	.30	.43	.54	.54	.54	.58	.60	.61	.81	.86	.86	.92
JOHNSTON												
APR 2	.16	.31	.47	.54	.58	.79	.91	1.23	1.33	1.56	1.91	2.21
APR 30	.30	.58	.82	.94	1.27	1.39	1.45	1.48	1.49	1.53	1.56	M
MAY 1	.27	.45	.56	.67	.90	1.38	1.62	1.93	2.04	.25	2.30	2.36

C Record ended October 1, 1963
M No record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
PACIFIC AREA												
JOHNSTON												
MAY 20	.21	.35	.48	.56	.68	.79	.88	1.02	1.28	M	M	M
MAY 26	.24	.40	.57	.69	.94	1.24	1.34	1.57	1.71	1.90	2.19	2.33
KOPOR R												
JAN 5	.27	.38	.46	.49	.50	.50	.51	.51	.51	.51	.51	.54
JAN 6	.27	.53	.69	.79	.87	.87	.87	1.07	1.09	1.22	1.22	1.28
JAN 6	.44	.77	1.07	1.33	1.50	1.79	1.83	2.29	2.63	2.70	2.79	2.84
JAN 9	.27	.41	.45	.46	.50	.62	.69	.74	.87	1.19	1.57	1.57
JAN 9	.18	.26	.38	.41	.47	.67	.80	.94	1.01	1.14	1.25	1.39
JAN 11	.21	.39	.50	.57	.69	.93	1.08	1.10	1.11	1.12	1.12	1.14
JAN 18	.25	.31	.33	.35	.37	.39	.40	.40	.40	.40	.40	.40
JAN 21	.21	.36	.46	.58	.89	1.14	1.40	1.82	1.94	2.10	2.16	2.21
JAN 29	.24	.42	.47	.56	.59	.61	.65	.83	.98	1.00	1.22	1.32
JAN 31	.26	.34	.35	.35	.36	.36	.36	.36	.36	.36	.36	.38
FEB 1	.27	.45	.50	.53	.54	.55	.57	.60	.61	.63	.64	.64
FEB 5	.34	.51	.61	.70	.81	.86	.88	1.19	1.35	1.37	1.37	1.37
FEB 11	.25	.41	.47	.47	.47	.47	.47	.47	.53	.53	.53	.53
MAR 3	.16	.26	.35	.43	.63	.81	.92	1.15	1.22	1.24	1.24	1.24
MAR 14	.44	.67	.78	.90	1.00	1.06	1.08	1.08	1.09	1.09	1.11	1.11
MAR 17	.22	.40	.55	.61	.69	.82	.85	.91	.96	.96	1.23	1.45
MAR 24	.20	.36	.36	.36	.36	.38	.38	.38	.57	.57	.59	.59
MAY 7	.26	.29	.29	.29	.29	.29	.29	.29	.29	.32	.32	.35
MAY 10	.21	.35	.44	.57	.79	.89	.97	1.04	1.04	1.04	1.05	1.10
MAY 11	.18	.33	.37	.40	.47	.52	.53	.53	.53	.54	.56	.56
MAY 18	.23	.31	.38	.43	.49	.53	.57	.61	.65	.66	.67	.67
MAY 22	.19	.30	.36	.45	.57	.61	.61	.62	.62	.62	.62	.62
MAY 28	.28	.37	.49	.63	.91	1.23	1.43	1.56	1.68	2.07	2.28	2.40
MAY 28	.19	.33	.40	.44	.48	.50	.51	.51	.52	.52	.52	.52
JUN 13	.18	.31	.32	.32	.32	.32	.33	.34	.34	.34	.34	.35
JUN 16	.21	.31	.34	.36	.40	.45	.46	.47	.48	.50	.52	.54
JUN 21	.28	.41	.50	.52	.56	.64	.64	.64	.64	.64	.64	.97
JUN 21	.30	.54	.64	.76	.95	1.21	1.24	1.31	1.38	1.38	1.39	1.43
JUN 22	.13	.20	.25	.31	.46	.67	.89	1.16	1.21	1.21	1.21	1.21
JUN 30	.17	.29	.37	.42	.45	.47	.48	.49	.57	.58	.58	.58
JUL 1	.26	.40	.57	.69	.85	.94	.96	1.01	1.05	1.10	1.16	1.19
JUL 5	.16	.29	.36	.37	.44	.62	.62	.62	.62	.62	.62	.62
JUL 6	.16	.28	.38	.47	.61	.73	.79	.85	.88	.92	.98	1.06
JUL 19	.25	.47	.65	.75	.83	.90	.93	.99	1.02	1.04	1.05	1.05
AUG 5	.12	.22	.30	.39	.51	.67	.79	.92	.94	.97	1.04	1.08
AUG 7	.29	.44	.51	.69	.89	1.09	1.13	1.14	1.17	1.19	1.19	1.19
AUG 9	.17	.29	.39	.47	.66	.84	.96	.98	.98	.98	.98	.98
AUG 11	.27	.48	.65	.77	1.03	1.53	2.02	2.33	2.55	2.72	2.79	2.85
AUG 14	.28	.36	.37	.38	.38	.38	.38	.39	.39	.39	.40	.41
AUG 16	.17	.32	.47	.57	.76	.86	.88	.88	.88	.89	.89	.89
AUG 19	.30	.37	.38	.39	.39	.41	.41	.41	.41	.41	.41	.41
AUG 25	.22	.31	.33	.33	.33	.33	.33	.33	.33	.33	.33	.33
SEP 22	.26	.30	.39	.49	.66	.96	1.22	1.42	1.43	1.48	1.50	1.50
SEP 23	.16	.24	.37	.46	.57	.68	.73	.75	.81	.87	.89	.89
SEP 24	.31	.40	.51	.58	.68	.77	.80	.81	.81	.81	.82	.82
SEP 30	.26	.41	.55	.58	.60	.61	.61	.61	.61	.61	.61	.61
SEP 30	.30	.44	.65	.78	.94	1.15	1.23	1.37	1.42	1.49	1.83	1.98
SEP 30	.19	.31	.48	.60	.71	.83	.93	1.03	1.12	1.19	1.39	1.44
OCT 4	.25	.40	.54	.62	.65	.67	.67	.67	.67	.69	.69	.72
OCT 4	.38	.65	.79	.84	.89	.90	.91	.92	.94	.95	.95	.95
OCT 11	.21	.30	.34	.35	.36	.36	.36	.38	.40	.40	.44	.44
OCT 18	.19	.33	.43	.55	.69	.73	.73	.73	.73	.74	.74	.75
OCT 18	.18	.28	.40	.44	.44	.45	.46	.46	.56	.74	.76	.76
OCT 19	.18	.33	.40	.46	.53	.57	.62	1.03	1.09	1.09	1.10	1.11
NOV 17	.20	.30	.37	.39	.41	.42	.42	.42	.42	.45	.46	.46
NOV 19	.14	.22	.28	.41	.52	.58	.63	.67	.68	.68	.68	.68
NOV 19	.33	.39	.46	.53	.68	.93	1.15	1.21	1.24	1.24	1.28	1.34
DEC 6	.26	.42	.58	.71	.94	.99	.99	1.00	1.01	1.01	1.02	1.13
DEC 9	.35	.63	.77	.85	.89	.89	.89	.89	.89	.89	.89	.89
DEC 10	.42	.78	1.10	1.45	1.81	1.88	1.89	1.90	1.90	1.90	1.90	1.90
DEC 13	.28	.44	.55	.73	1.03	1.28	1.68	2.05	2.33	2.71	2.77	2.80
DEC 19	.29	.50	.65	.76	.91	.93	.95	.96	.98	.98	.98	.98
DEC 19	.22	.36	.43	.45	.46	.47	.47	.47	.47	.47	.47	.47
MAJURO												
JAN 1	.25	.39	.44	.47	.55	.61	.62	.62	.62	.65	.65	.65
JAN 3	.32	.48	.66	.87	1.24	1.71	2.13	2.40	2.58	2.74	2.77	2.82
JAN 3	.29	.42	.53	.53	.60	.60	.60	.60	.60	.60	.60	.60
JAN 5	.18	.31	.45	.52	.64	.65	.69	.76	.77	.77	.77	.77
JAN 16	.13	.26	.36	.45	.60	.76	.86	.96	1.04	1.07	1.08	1.09
JAN 19	.15	.26	.35	.43	.60	.78	.92	.95	1.00	1.07	1.18	1.25
JAN 21	.23	.28	.42	.48	.53	.72	.80	.80	.80	.83	.84	1.11
JAN 23	.22	.33	.43	.50	.70	.87	.92	.94	.94	.95	.95	.95
JAN 29	.15	.24	.32	.40	.46	.47	.47	.47	.48	.48	.48	.48
FEB 4	.23	.35	.41	.45	.53	.54	.61	.72	.76	1.11	1.23	1.45
FEB 5	.37	.54	.66	.89	1.20	1.33	1.36	1.44	1.48	1.49	1.51	1.53
FEB 15	.18	.34	.41	.44	.46	.48	.48	.48	.48	.48	.48	.48
FEB 19	.27	.40	.45	.46	.46	.47	.47	.47	.53	M	.90	.91
FEB 19	.24	.32	.38	.39	.41	.42	.43	.44	.77	.81	M	M
FEB 24	.22	.31	.34	.35	.37	.40	.42	.46	.67	.69	.79	.85
MAR 15	.21	.32	.41	.42	.42	.43	.54	.58	.58	.60	.60	.60
MAR 21	.25	.46	.64	.73	.89	1.06	1.28	1.36	1.40	1.46	1.59	1.60
APR 26	.22	.39	.59	.73	.82	.91	.93	.93	.93	.93	.93	1.22
MAY 5	.24	.43	.60	.77	1.06	1.40	1.74	1.92	1.93	1.94	2.02	2.08
MAY 10	.32	.55	.85	1.06	1.28	1.34	1.36	1.37	1.37	1.40	1.41	1.41
MAY 11	.26	.43	.56	.66	.80	.90	.92	.96	1.07	1.10	1.11	1.12
MAY 12	.30	.35	.37	.39	.42	.42	.43	.43	.45	.53	.55	.55
MAY 15	.22	.37	.50	.56	.60	.70	.70	.70	.70	.70	.74	.78
MAY 29	.39	.61	.66	.68	.76	.77	.77	.77	.77	.77	.77	.77
MAY 29	.24	.42	.55	.57	.59	.68	.77	.77	.77	.77	.77	.77
MAY 31	.18	.32	.47	.51	.60	.68	.68	.68	.68	.68	.68	.68
JUN 6	.29	.48	.62	.72	.91	.99	1.09	1.19	1.32	1.63	1.80	1.88
JUN 10	.17	.30	.43	.54	.70	1.01	1.21	1.39	1.41	1.46	1.51	1.54
JUN 13	.24	.33	.46	.55	.65	.66	.66	.66	.66	.66	.66	.66
JUN 18	.16	.29	.38	.41	.48	.65	.70	.92	1.18	1.26	1.29	1.35
JUN 25	.18	.32	.43	.45	.46	.46	.46	.46	.46	.47	.47	.47
JUN 26	.17	.25	.30	.41	.49	.58	.62	.64	.64	.64	.66	.66
JUN 30	.22	.33	.35	.35	.35	.38	.41	.42	.48	.53	.53	.53
JUL 1	.26	.45	.53	.56	.58	.60	.60	.61	.61	.62	.63	.63
JUL 7	.28	.55	.76	.97	1.43	1.90	2.00	2.28	2.68	3.03	3.28	3.47
JUL 19	.21	.33	.43	.59	.63	.63	.63	.66	.70	.72	.72	.75
JUL 23	.23	.35	.43	.43	.43	.54	.55	.56	.67	.68	.68	.73
AUG 10	.32	.46	.47	.47	.47	.75	.75	.75	.75	.75	.75	.75
AUG 25	.34	.67	.83	.94	.98	1.00	1.01	1.01	1.03	1.06	1.06	1.20
AUG 25	.22	.33	.34	.34	.34	.34	.34	.34	.34	.34	.34	.34
SEP 13	.26	.47	.61	.74	.78	.80	.90	.91	.92	.96	.97	.98
SEP 26	.32	.55	.68	.80	.89	.96	1.15	1.47	1.60	1.69	1.71	1.85
OCT 3	.27	.54	.65	.74	.78	.79	.79	.79	.79	.79	.79	.79
OCT 11	.16	.22	.35	.42	.55	.62	.67	.71	.76	.76	.79	.83
OCT 11	.20	.33	.46	.53	.62	.64	.83	1.05	1.14	1.30	1.54	1.73
OCT 15	.26	.39	.55	.69	.83	.97	1.03	1.09	1.14	1.17	1.19	1.21

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
PACIFIC AREA												
MAJURO												
OCT 17	.20	.35	.49	.61	.79	.83	.85	.85	.85	.85	.85	.85
OCT 28	.17	.28	.42	.54	.66	.73	.78	.82	.93	1.01	1.08	1.19
NOV 5	.20	.32	.39	.44	.46	.49	.49	.50	.51	.51	.62	.74
NOV 27	.20	.37	.48	.59	.74	.98	1.22	1.22	1.22	1.23	1.34	1.79
NOV 27	.21	.35	.41	.53	.66	.70	.71	.81	.89	.94	.97	1.00
NOV 28	.20	.33	.41	.52	.53	.53	.55	.57	.58	.58	.58	.58
NOV 30	.28	.34	.40	.42	.48	.49	.49	.49	.49	.58	.81	.82
DEC 3	.24	.34	.45	.53	.82	.87	.87	.89	1.00	1.23	1.24	1.24
DEC 15	.26	.41	.45	.47	.47	.48	.49	.49	.49	.49	.49	.49
DEC 20	.25	.41	.43	.44	.46	.48	.56	.60	.63	.69	.69	.72
DEC 20	.15	.24	.32	.42	.54	.54	.54	.55	.55	.55	.55	.56
MARCUS ISLAND S												
OCT 14	.30	.49	.57	.65	.66	.70	.72	.72	.72	.72	.72	.72
OCT 17	.21	.26	.31	.33	.51	.63	.68	.69	.82	.85	.90	.98
OCT 27	.32	.58	.79	.92	1.17	1.34	1.54	1.68	1.86	2.03	2.50	3.57
NOV 7	.42	.70	.89	1.06	1.35	1.55	1.95	2.10	2.16	2.19	2.23	2.28
DEC 29	.68	1.22	1.72	2.04	2.80	3.81	4.16	4.31	4.32	4.80	4.84	4.84
PONAPE R												
JAN 1	.26	.33	.34	.36	.39	.43	.43	.51	.53	.53	.63	.63
JAN 1	.31	.50	.66	.66	.73	.73	.74	.74	.87	1.16	1.16	1.57
JAN 1	.37	.44	.48	.53	.53	.58	.58	.59	.62	.99	1.04	1.21
JAN 14	.53	.74	.82	.82	.82	.82	.82	.82	.82	.82	.82	.85
JAN 15	.25	.38	.49	.61	.62	.68	.69	.82	.99	1.08	1.22	1.29
JAN 15	.15	.28	.40	.44	.57	.74	.91	1.11	1.29	1.34	1.38	1.57
JAN 19	.14	.25	.27	.30	.46	.59	.84	1.00	1.07	1.15	1.35	1.39
JAN 25	.27	.42	.54	.60	.85	1.10	1.23	1.29	1.29	1.29	1.29	1.30
FEB 1	.35	.59	.74	.80	1.23	1.54	1.71	1.83	1.97	2.02	2.04	2.05
FEB 2	.31	.51	.61	.67	.73	.76	.78	.84	.86	.86	.87	.87
FEB 11	.26	.28	.28	.28	.28	.31	.34	.34	.34	.34	.34	.34
FEB 18	.31	.34	.55	.59	.75	.87	.97	.98	.98	.98	1.05	1.11
FEB 18	.26	.27	.27	.27	.27	.27	.30	.30	.30	.30	.30	.44
FEB 20	.37	.66	.97	1.22	1.64	2.40	2.60	3.04	3.29	3.33	3.45	3.50
FEB 28	.22	.40	.57	.73	1.01	1.40	1.66	1.74	1.78	1.82	1.87	1.93
MAR 1 E	.18	.37	.46	.52	.63	.72	.72	.72	.84	.85	.86	.87
MAR 8	.40	.65	.80	.85	.90	.90	.90	.90	.90	.90	.92	.92
MAR E	.35	.45	.47	.48	.51	.57	.60	.78	.86	.89	.94	.94
MAR 25	.20	.34	.47	.59	.79	1.17	1.45	1.67	2.00	2.27	2.60	2.71
MAR 25	.25	.32	.41	.46	.55	.67	.72	.76	.77	.77	.77	.77
MAR 25	.27	.33	.34	.34	.35	.35	.35	.35	.36	.36	.36	.36
MAR 27	.34	.57	.79	.98	1.09	1.33	1.51	1.59	1.63	1.63	1.64	1.83
MAR 28	.27	.49	.68	.86	.95	.95	.96	1.00	1.07	1.12	1.14	1.15
APR 3	.20	.31	.41	.49	.58	.66	.68	.90	1.02	1.18	1.44	1.50
APR 9	.18	.36	.39	.42	.42	.42	.42	.42	.42	.42	.42	.42
APR 15	.27	.33	.36	.40	.57	.59	.60	.61	.61	.62	.62	.63
APR 18	.31	.45	.58	.64	.67	.69	.71	.71	.71	.71	.71	.74
APR 21	.32	.39	.44	.45	.46	.53	.54	.55	.59	.62	.63	.68
MAY 12	.14	.27	.38	.47	.64	.81	.88	1.02	1.17	1.50	1.69	1.91
MAY 16	.24	.36	.40	.41	.41	.41	.41	.41	.41	.41	.41	.41
MAY 23	.34	.55	.78	.97	1.27	1.49	1.59	1.64	1.73	1.80	1.80	1.82
MAY 25	.24	.32	.37	.38	.47	.49	.49	.49	.49	.49	.49	.49
MAY 26	.32	.36	.37	.39	.44	.48	.48	.48	.48	.48	.48	.48
MAY 26	.34	.46	.49	.54	.55	.55	.56	.58	.58	.58	.58	.58
MAY 27	.47	.60	.76	.85	1.07	1.27	1.28	1.28	1.28	1.28	1.28	1.28
MAY 29	.17	.30	.37	.41	.46	.51	.52	.53	.55	.59	.74	.81
MAY 30	.22	.31	.39	.40	.40	.40	.72	1.11	1.16	1.16	1.16	1.16
MAY 31	.18	.32	.40	.43	.53	.58	.59	.59	.60	.60	.61	.61
JUN 10	.28	.50	.62	.71	1.13	1.30	1.33	1.36	1.38	1.42	1.87	2.21
JUN 23	.26	.33	.34	.34	.35	.35	.35	.38	.38	.38	.38	.38
JUN 27	.32	.51	.64	.76	1.00	1.16	1.36	1.53	1.69	2.01	2.36	2.45
JUL 14	.23	.35	.48	.60	.75	.80	.87	.87	.89	.90	.90	.92
JUL 21	.26	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
JUL 21	.26	.29	.35	.37	.55	.59	.59	.61	.64	.64	.68	.68
JUL 27	.14	.26	.32	.41	.51	.59	.64	.66	.71	.75	.79	.84
JUL 29	.37	.53	.53	.53	.53	.53	.53	.53	.53	.53	.67	.89
JUL 30	.25	.36	.45	.56	.60	.69	.70	.75	.76	.77	.77	.78
AUG 4	.17	.29	.37	.37	.39	.41	.46	.56	.57	.58	.58	.58
AUG 4	.30	.56	.71	.81	1.19	1.41	1.61	1.97	2.33	2.66	2.97	3.05
AUG 10	.24	.40	.44	.45	.45	.46	.51	.52	.53	.54	.60	.61
AUG 10	.20	.32	.32	.33	.33	.37	.38	.44	.55	.57	.62	.63
AUG 18	.31	.46	.52	.52	.72	.75	.77	.77	.77	.77	.77	1.24
AUG 23	.18	.32	.42	.59	.60	.82	.91	.92	.92	.92	.94	.98
AUG 30	.22	.36	.54	.67	.81	1.10	1.20	1.38	1.43	1.55	1.55	1.55
AUG 31	.27	.44	.51	.60	.80	.98	1.05	1.08	1.09	1.10	1.10	1.11
SEP 2	.17	.27	.33	.42	.55	.61	.65	.65	.65	.65	.65	.72
SEP 4	.29	.50	.56	.60	.68	.72	.72	.72	.72	.72	.75	.75
SEP 6	.25	.33	.41	.57	.68	.70	.71	.71	.71	.71	.71	.71
SEP E	.27	.39	.64	.72	.86	.88	.91	1.16	1.20	1.23	1.24	1.25
SEP 11	.22	.40	.48	.55	.64	.68	.71	.91	1.28	1.41	1.47	1.47
SEP 15	.19	.25	.34	.42	.60	.80	.90	1.04	1.11	1.16	1.20	1.23
SEP 16	.29	.52	.68	.77	.81	.83	.85	.86	.86	.86	.86	.86
SEP 27	.42	.55	.55	.56	.56	.56	.57	.58	.59	.60	.63	.65
OCT 1	.30	.60	.74	.76	.79	.80	.80	.80	.83	.85	.85	.85
OCT 2	.45	.77	.90	1.02	1.13	1.13	1.15	1.28	1.30	1.40	1.63	1.65
OCT 6	.29	.47	.55	.58	.64	.67	.70	.71	.71	.72	.72	.72
OCT 10	.35	.62	.84	.99	1.17	1.35	1.46	1.74	1.87	2.01	2.11	2.27
OCT 15	.19	.27	.36	.41	.51	.54	.55	.55	.55	.55	.55	.55
OCT 15	.24	.40	.49	.57	.70	.74	.75	.86	.97	.97	1.12	1.27
OCT 17	.23	.39	.45	.50	.63	.77	.91	.98	1.04	1.09	1.10	1.21
OCT 24	.26	.31	.32	.37	.38	.42	.42	.42	.42	.44	.44	.44
OCT 27	.46	.70	.97	1.11	1.25	1.29	1.32	1.48	1.52	1.61	1.70	1.72
OCT 30	.28	.29	.36	.43	.62	.66	.67	.67	.67	.67	.67	.67
DEC 9	.23	.28	.40	.50	.57	.70	1.03	1.26	1.41	1.47	1.49	1.50
DEC 19	.22	.31	.38	.45	.53	.56	.56	.56	.57	.78	1.10	1.10
TAGUAC GUAM R						NONE						
TRUK MOEN ISLAND												
JAN 4	.43	.59	.61	.81	.92	.95	1.10	1.40	1.76	1.86	1.89	1.96
JAN 16	.30	.46	.55	.56	.57	.57	.58	.58	.58	.58	.59	.59
JAN 19	.31	.43	.47	.47	.47	.47	.47	.58	.77	.77	.77	.77
JAN 19	.25	.41	.48	.56	.66	.75	.78	.80	.80	.80	.96	.96
JAN 24	.23	.33	.36	.36	.37	.37	.37	.59	.61	.61	.61	.61
JAN 30	.32	.59	.75	.75	.75	.75	.87	1.05	1.14	1.14	1.14	1.17
FEB 18	.20	.35	.47	.55	.66	.77	.90	.91	.93	.93	.93	.93
FEB 24	.30	.34	.42	.46	.50	.50	.52	.56	.56	.56	.69	.76
MAR 15	.22	.36	.44	.54	.63	.71	.88	.93	1.04	1.06	1.10	1.12
MAR 26	.19	.30	.36	.37	.49	.57	.68	.87	1.04	1.15	1.19	1.22
APR 17	.21	.31	.33	.37	.40	.41	.43	.49	.50	.55	.68	.72
APR 24	.26	.44	.64	.85	1.12	1.26	1.30	1.44	1.67	1.72	1.87	1.99
MAY 16	.23	.40	.46	.49	.49	.49	.49	.49	.49	.49	.49	.49
MAY 23	.17	.27	.39	.48	.58	.67	.76	.78	.79	.81	.84	.84
MAY 25	.19	.32	.39	.42	.43	.43	.43	.43	.49	.49	.49	.49
MAY 27	.36	.49	.50	.50	.50	.51	.51	.51	.51	.51	.54	.58

M No record

S Record began September 2, 1963
E Estimated

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
PACIFIC AREA												
TRUK MOEN ISLAND												
JUN 13	.16	.30	.40	.44	.51	.53	.53	.63	.64	.64	.64	.74
JUN 21	.27	.44	.48	.60	.67	.73	.82	.86	.86	.86	.88	.92
JUN 23	.27	.43	.53	.56	.57	.57	.57	.57	.58	.58	.58	.58
JUN 28	.29	.40	.44	.45	.45	.46	.46	.46	.46	.46	.46	.46
JUL 1	.15	.26	.35	.43	.61	.90	.94	.99	.99	.99	.99	.99
JUL 10	.24	.38	.51	.53	.58	.62	.68	.76	.85	.85	1.08	1.17
JUL 12	.25	.41	.47	.47	.47	.48	.48	.48	.48	.48	.49	.51
JUL 13	.33	.58	.86	1.06	1.34	1.61	1.81	1.85	1.87	1.88	1.92	1.98
JUL 21	.32	.42	.49	.57	.67	.69	.70	.70	.70	.70	.73	.75
JUL 25	.45	.64	.76	.82	.89	.90	.91	.92	.92	.92	.92	.92
AUG 5	.30	.42	.56	.73	.93	1.30	1.42	1.51	1.79	1.98	2.01	2.01
AUG 9	.28	.40	.53	.67	.85	1.03	1.25	1.33	1.36	1.46	1.53	1.54
AUG 13	.24	.34	.40	.40	.43	.45	.45	.45	.45	.45	.45	.45
AUG 24	.26	.43	.53	.61	.67	.79	1.07	1.23	1.28	1.34	1.42	1.49
AUG 25	.37	.46	.49	.49	.49	.49	.49	.51	.57	.72	.72	.79
AUG 25	.30	.52	.58	.79	1.09	1.51	2.11	2.27	2.35	2.37	2.38	2.39
AUG 26	.23	.37	.44	.54	.84	1.00	1.16	1.20	1.33	1.37	1.43	1.45
AUG 27	.29	.48	.65	.87	.99	1.08	1.15	1.23	1.25	1.25	1.25	1.25
SEP 8	.20	.30	.37	.42	.48	.81	.94	1.02	1.07	1.24	1.41	1.45
SEP 9	.40	.54	.66	.75	.90	1.04	1.10	1.15	1.20	1.28	1.32	1.33
SEP 11	.31	.40	.43	.44	.54	.71	.82	.85	.88	.93	.93	.93
SEP 15	.37	.54	.67	.78	.86	.86	.86	.86	.87	.87	.87	.87
SEP 22	.21	.32	.46	.49	.57	.59	.60	.60	.60	.60	.60	.60
SEP 23	.22	.35	.48	.62	.89	1.05	1.10	1.33	1.43	1.44	1.55	1.59
SEP 28	.46	.84	1.16	1.48	1.83	2.27	2.63	2.89	3.09	3.42	3.72	3.88
OCT 1	.40	.53	.61	.71	.77	.82	.83	.84	.85	.85	.85	.85
OCT 8	.25	.39	.47	.67	.80	.82	.85	.89	.89	1.08	1.36	1.43
OCT 8	.38	.65	.83	.91	1.22	1.33	1.52	1.98	2.37	2.44	2.53	2.90
OCT 10	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26
OCT 27	.19	.30	.37	.39	.40	.40	.40	.40	.40	.47	.56	.57
OCT 28	.46	.64	.76	.90	1.11	1.33	1.42	1.46	1.49	1.51	1.52	1.54
NOV 11	.20	.25	.32	.38	.54	.62	.64	.64	.64	.64	.64	.64
NOV 16	.33	.45	.64	.65	.65	.65	.65	.65	.65	.65	.65	.65
NOV 19	.28	.36	.39	.39	.40	.41	.42	.42	.42	.43	.43	.43
NOV 27	.33	.42	.43	.43	.43	.43	.43	.84	.85	.85	1.13	1.13
DEC 8	.44	.54	.71	.73	.77	.82	.82	.83	.83	.83	.83	.83
DEC 10	.31	.36	.40	.44	.46	.46	.46	.51	.51	.58	.58	.58
DEC 18	.35	.54	.73	.98	1.32	1.57	1.59	1.62	1.66	1.68	1.70	1.70
DEC 19	.30	.44	.52	.52	.57	.58	.58	.58	.58	.58	.58	.58
WAKE												
MAY 14	.25	.47	.52	.53	.56	.59	.69	.70	.70	.72	.72	.72
MAY 15	.30	.58	.69	.72	.76	.76	.77	.78	.79	.79	.79	.79
MAY 20	.20	.31	.35	.40	.41	.41	.41	.41	.41	.41	.41	.41
JUN 3	.15	.21	.28	.36	.50	.60	.61	.65	.65	.69	.69	.69
JUN 16	.37	.56	.65	.66	.68	.68	.68	.68	.68	.68	.80	.80
JUL 15	.17	.33	.37	.38	.38	.38	.41	.41	.41	.41	.41	.41
AUG 23	.20	.35	.41	.43	.45	.49	.49	.50	.55	.60	.61	.72
SEP 6	.23	.43	.50	.68	.79	.82	.82	.82	.82	.82	.82	.82
OCT 12	.25	.36	.39	.43	.46	.47	.48	.48	.49	.49	.49	.50
OCT 26	.16	.22	.30	.38	.50	.57	.57	.57	.57	.57	.57	.63
NOV 6	.20	.31	.41	.43	.43	.43	.43	.43	.43	.43	.43	.43
NOV 6	.45	.82	1.11	1.31	1.50	1.56	1.57	1.57	1.57	1.57	1.58	1.58
YAP R												
JUL 3	.20	.34	.43	.47	.53	.57	.63	.71	.77	.80	.88	.96
JUL 21	.17	.32	.46	.59	.76	.89	.94	1.00	1.00	1.01	1.07	1.07
JUL 24	.34	.64	.92	1.12	1.43	2.09	2.29	2.33	2.35	2.35	2.35	2.37
AUG 5	.22	.32	.41	.46	.57	.58	.60	.60	.60	.60	.60	.60
AUG 9	.27	.43	.58	.64	.73	.75	.75	.75	1.14	1.22	1.29	1.36
AUG 11	.16	.30	.41	.57	.70	.77	.84	.92	.96	1.00	1.03	1.04
AUG 18	.20	.22	.37	.39	.60	.90	1.20	1.28	1.34	1.45	1.50	1.50
AUG 21	.22	.44	.46	.48	.48	.49	.61	.85	1.07	1.17	1.21	1.21
AUG 26	.15	.26	.33	.41	.52	.60	.63	.67	.71	.75	1.07	1.31
AUG 27	.31	.46	.59	.65	.78	.86	.94	1.05	1.10	1.14	1.26	1.51
AUG 27	.39	.76	1.07	1.43	2.00	2.19	2.19	2.19	2.20	2.28	2.55	2.60
AUG 30	.27	.49	.59	.68	.72	.75	.78	.81	.83	.84	.88	.90
AUG 31	.19	.38	.55	.71	.92	1.33	1.58	1.66	2.11	2.40	2.58	2.68
SEP 7	.16	.28	.39	.41	.42	.43	.43	.43	.43	.43	.43	.43
SEP 17	.25	.34	.38	.43	.76	.84	.93	.93	.93	.93	.94	.94
OCT 9	.19	.33	.43	.49	.75	1.05	1.20	1.28	1.59	1.99	2.03	2.55
OCT 10	.22	.35	.47	.56	.58	.59	.60	.60	.60	.60	.67	.75
OCT 10	.23	.39	.53	.55	.55	.55	.55	.55	.55	.55	.55	.55
OCT 11	.18	.30	.31	.31	.32	.36	.43	.53	.56	.57	.57	.57
OCT 12	.17	.28	.37	.44	.48	.61	.95	1.08	1.10	1.13	1.22	1.22
NOV 9	.39	.71	1.03	1.21	1.48	1.70	1.73	1.75	1.75	1.75	1.75	1.75
NOV 21	.37	.37	.37	.37	.38	.38	.41	.46	.52	.58	.58	.58
NOV 29	.20	.36	.40	.40	.40	.40	.40	.40	.40	.40	.40	.40
DEC 4	.13	.25	.31	.36	.54	.59	.61	.65	.66	.66	.66	.66
DEC 4	.28	.54	.74	.79	.91	1.06	1.07	1.07	1.07	1.07	1.07	1.24
DEC 13	.20	.30	.40	.44	.49	.56	.61	.69	.76	.81	.90	.95
DEC 14	.18	.31	.41	.43	.45	.59	.65	.78	.78	.81	.88	.97
DEC 14	.23	.38	.53	.60	.72	.81	.97	1.02	1.07	1.09	1.09	1.09
DEC 31	.25	.48	.66	.77	.87	.89	.91	.97	1.16	1.16	1.57	1.61
PENNSYLVANIA												
ALLENTOWN												
JUN 30	.28	.47	.51	.55	.54	.55	.56	.57	.57	.57	.57	.57
JUL 20	.38	.62	.78	.80	.81	.81	.81	.81	.81	.81	.81	.81
AUG 13	.40	.70	.84	.87	.90	.91	.96	.96	1.09	1.53	1.55	1.55
SEP 12	* .55	.75	*1.10	1.22	1.75	1.84	1.84	1.84	1.85	2.05	2.54	2.84
ERIE												
APR 19	.24	.34	.37	.38	.41	.46	.46	.46	.48	.50	.50	.50
HARRISBURG												
APR 30	.31	.33	.37	.39	.39	.39	.40	.40	.40	.40	.41	.42
MAY 29	.33	.58	.61	.63	.64	.65	.65	.65	.65	.65	.65	.65
AUG 1	.20	.38	.53	.64	.82	.83	.84	.84	.84	.84	.84	.84
AUG 1	.20	.38	.39	.39	.39	.39	.39	.39	.39	.39	.39	.39
PHILADELPHIA												
JUN 10	.36	.64	.69	.70	.71	.73	.77	1.02	1.14	1.17	1.18	1.18
JUL 13	.16	.32	.33	.34	.42	.42	.43	.43	.44	.47	.47	.47
JUL 26	.23	.44	.48	.62	.72	.84	.84	.84	.84	.84	.88	.88
AUG 1	.32	.56	.58	.68	.78	.90	1.09	1.14	1.16	1.16	1.16	1.16
AUG 1	.30	.50	.56	.57	.58	.58	.58	.58	.58	.58	.58	.58
SEP 4	.32	.56	.72	.84	.95	1.30	1.54	1.72	2.08	2.32	2.73	3.06
NOV 23	.26	.31	.33	.34	.36	.39	.43	.50	.52	.54	.59	.62
PITTSBURGH U												
JUN 6	.57	.72	.73	.74	.75	.75	.82	.82	.82	.84	.86	.86
JUN 30	.27	.42	.47	.48	.48	.48	.48	.48	.48	.48	.48	.48

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
PENNSYLVANIA												
PITTSBURGH U												
JUL 2	.21	.36	.42	.55	.68	.70	.70	.75	.75	.75	.75	.75
AUG 3	.30	.33	.39	.46	.56	.69	.73	.73	.73	.73	.73	.73
PITTSBURGH												
JUL 2	.28	.42	.42	.43	.60	.64	.64	.64	.64	.64	.64	.64
JUL 19	.22	.32	.49	.52	.52	.52	.52	.52	.52	.52	.52	.52
AUG 3	.19	.24	.36	.43	.44	.46	.48	.48	.48	.48	.48	.48
AUG 17	.34	.40	.41	.41	.41	.41	.41	.41	.41	.41	.46	.46
SEP 3	.22	.43	.45	.46	.46	.62	.63	.63	.63	.63	.64	.64
SEP 12	.22	.42	.45	.48	.48	.49	.49	.49	.51	.54	.61	.62
READING U												
JUN 10	.25	.38	.39	.40	.42	.46	.47	.48	.48	.52	.58	.59
JUL 28	.21	.40	.55	.69	1.06	1.30	1.50	1.52	1.52	1.52	1.52	1.52
AUG 1	.23	.30	.34	.43	.57	.64	.69	.70	.71	.71	.71	.71
SEP 3	.36	.41	.48	.51	.54	.91	1.07	1.38	1.39	1.40	1.73	2.05
WILKES BARRE-SCRANTON												
JUL 30	.10	.18	.25	.33	.50	.65	.77	.78	.81	.91	.93	.93
AUG 17	.26	.34	.35	.37	.49	.54	.60	.70	.88	1.02	1.09	1.12
RHODE ISLAND												
BLOCK ISLAND												
MAY 29	.16	.20	.27	.30	.50	.76	.90	1.00	1.03	1.06	1.10	1.13
AUG 13	.25	.35	.45	.62	.68	.80	.86	1.09	1.19	1.25	1.30	1.98
NOV 29	.20	.39	.44	.50	.84	.90	1.05	1.16	1.51	1.63	1.72	1.75
PROVIDENCE												
MAY 29	.15	.27	.34	.41	.52	.64	.77	.82	.87	.90	.95	.97
JUN 9	.18	.35	.45	.48	.50	.53	.54	.55	.56	.56	.57	.57
JUN 28	.44	.86	1.06	1.08	1.12	1.16	1.22	1.24	1.25	1.27	1.31	1.34
NOV 29	.19	.33	.44	.47	.51	.66	.82	.92	1.01	1.06	1.15	1.58
SOUTH CAROLINA												
CHARLESTON U												
JAN 20	.32	.42	.43	.48	.65	.68	.68	.69	.75	.81	.86	.88
APR 6	.35	.42	.45	.47	.48	.49	.49	.52	.73	.88	1.00	1.02
JUN 17	.15	.28	.38	.44	.49	.49	.51	.53	.53	.53	.53	.53
JUN 18	.31	.51	.71	.89	1.10	1.13	1.35	1.47	1.57	1.63	1.72	1.77
JUN 22	.21	.38	.44	.47	.55	.59	.61	.61	.64	.67	.77	.78
JUN 23	.20	.37	.47	.51	.53	.57	.60	.65	.76	.81	.89	.94
JUN 25	.27	.42	.51	.56	.59	.67	.73	.80	.85	.88	1.10	1.17
JUN 27	.27	.42	.47	.49	.51	.56	.59	.67	.70	.70	.70	.70
JUN 29	.36	.57	.63	.67	.67	.76	.79	.81	.81	.81	.81	.81
JUL 1	.20	.30	.37	.40	.48	.50	.50	.50	.50	.50	.50	.50
JUL 8	.23	.34	.35	.36	.40	.46	.55	.64	.66	.69	.71	1.06
JUL 9	.20	.30	.37	.40	.40	.40	.42	.46	.50	.51	.51	.51
JUL 25	.21	.31	.39	.40	.44	.48	.49	.49	.49	.49	.51	.51
JUL 30	.25	.36	.55	.60	.65	.69	.69	.69	.69	.69	.69	.69
AUG 6	.25	.35	.55	.70	.90	1.25	1.45	1.75	1.95	2.05	2.12	2.12
AUG 26	.25	.50	.75	1.00	1.25	1.35	1.50	1.75	2.00	2.25	2.30	2.39
SEP 13	.34	.59	.69	.81	.86	.88	.89	.91	.92	.93	.93	.93
SEP 14	.14	.22	.27	.35	.51	.54	.69	.72	.72	.72	.72	.72
COLUMBIA												
JAN 20	.17	.32	.34	.37	.47	.55	.62	.67	.75	.86	.97	1.01
MAR 6	.32	.35	.36	.36	.58	.60	.63	.69	.74	.77	.82	.84
MAY 28	.26	.38	.53	.67	1.05	1.35	1.50	1.61	1.66	1.74	1.75	1.75
JUN 17	.17	.30	.35	.39	.40	.47	.50	.50	.58	.87	.96	.99
JUN 21	.27	.38	.42	.46	.54	.57	.58	.58	.59	.59	.59	.59
AUG 22	.20	.34	.42	.48	.75	.83	.96	1.01	1.02	1.02	1.03	1.05
SEP 28	.35	.52	.55	.67	.92	1.17	1.32	1.38	1.42	1.50	1.57	1.62
FLORENCE												
JAN 20	.26	.41	.42	.50	.60	.60	.63	.64	.67	.74	.78	.85
APR 28	.28	.33	.38	.46	.59	.67	.70	.71	.71	.73	.75	.75
MAY 17	.29	.53	.67	.83	.86	.86	.86	.86	.86	.86	.86	.86
JUL 24	.54	.82	.90	1.00	1.20	1.30	1.40	1.48	1.49	1.50	1.66	1.74
JUL 30	.17	.30	.34	.36	.37	.37	.37	.37	.40	.40	.40	.40
AUG 30	.19	.34	.43	.56	.66	.74	.76	.76	.76	.76	.76	.76
SEP 13	.27	.53	.66	.76	.84	.87	.87	.87	.87	.87	.87	.87
SEP 29	.54	.98	1.13	1.26	1.50	1.55	1.64	1.77	1.85	1.94	2.05	2.11
GNVLE-SPARTANBURG												
MAR 5	.24	.39	.53	.65	.77	.91	1.13	1.26	1.52	1.90	2.13	2.36
APR 30	.16	.26	.35	.43	.61	.74	.80	.89	.98	1.06	1.16	1.29
MAY 27	.28	.38	.45	.61	.72	.76	.77	.77	.77	.78	.78	.78
JUN 27	.19	.27	.35	.49	.60	.90	.92	.92	.92	.92	.92	.92
JUN 20	.14	.24	.37	.42	.44	.46	.48	.52	.56	.58	.60	.60
JUL 25	.27	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42	.42
SOUTH DAKOTA												
HURON												
MAY 9	.12	.24	.35	.40	.43	.46	.51	.52	.52	.52	.52	.52
MAY 12	.17	.29	.33	.36	.52	.67	.71	.78	.90	.91	.92	.92
MAY 26	.19	.33	.38	.44	.52	.63	.65	.65	.66	.67	.67	.67
JUL 3	.17	.32	.37	.41	.55	.88	.89	1.07	1.13	1.19	1.30	1.43
JUL 26	.40	.75	.98	1.10	1.12	1.13	1.17	1.17	1.17	1.19	1.24	1.31
RAPID CITY												
JUN 15	.26	.45	.55	.70	1.00	1.10	1.20	1.32	1.72	1.82	2.05	2.15
JUL 14	.23	.40	.42	.45	.49	.50	.51	.52	.52	.52	.52	.52
SIOUX FALLS												
MAY 12	.48	.60	.60	.61	.61	.62	.63	.63	.63	.63	.63	.63
MAY 9	.28	.49	.50	.50	.50	.51	.52	.52	.54	.54	.54	.54
JUN 26	.27	.46	.54	.56	.56	.59	.64	.78	.78	.78	.78	.78
JUL 3	.22	.32	.48	.62	.67	.71	.74	.78	1.16	1.27	1.31	1.33
SEP 19	.21	.30	.40	.54	.67	.74	.81	.87	.89	.90	.90	.90
OCT 8	.18	.23	.35	.38	.39	.43	.47	.51	.51	.52	.52	.54
OCT 15	.39	.58	.61	.62	.62	.62	.62	.63	.63	.63	.63	.63
TENNESSEE												
BRISTOL												
MAR 11	.25	.33	.35	.37	.43	.50	.60	.68	.82	.91	1.02	1.12
MAY 15	.35	.47	.47	.47	.51	.53	.55	.56	.56	.56	.56	.56
MAY 16	.40	.44	.45	.46	.49	.50	.50	.50	.50	.50	.63	.67
JUN 28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.30	.30	.30
JUL 1	.25	.30	.39	.43	.48	.49	.49	.49	.49	.49	.49	.49
JUL 20	.26	.42	.46	.54	.57	.60	.60	.75	.82	.85	.85	.85

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
TENNESSEE												
BRISTOL												
AUG 20	.38	.60	.65	.70	.95	1.22	1.30	1.42	1.45	1.47	1.52	1.53
CHATTANOOGA												
MAR 5	.25	.31	.38	.43	.53	.70	.83	.96	.99	1.03	1.15	1.23
MAR 5	.22	.36	.43	.45	.46	.58	.67	.72	.85	.90	.95	1.03
MAR 11	.22	.39	.54	.67	.98	1.33	1.65	1.95	2.08	2.15	2.22	2.24
MAY 13	.20	.33	.42	.47	.60	.67	.72	.87	.90	.93	1.03	1.07
JUN 20	.18	.31	.44	.52	.54	.68	.82	.82	.85	.94	.96	.96
JUL 2	.19	.32	.41	.46	.50	.51	.51	.53	.55	.55	.55	.55
JUL 6	.37	.49	.53	.56	.58	.60	.61	.63	.66	.66	.66	.66
JUL 17	.21	.33	.43	.64	.76	.77	.78	.78	.78	.78	.78	.78
JUL 18	.18	.28	.39	.43	.45	.47	.55	.56	.56	.56	.56	.56
JUL 28	.44	.65	.98	1.19	1.38	1.44	1.46	1.59	1.59	1.59	1.59	1.59
JUL 29	.32	.53	.67	.69	.73	.76	.76	.76	.76	.76	.76	.76
JUL 29	.32	.55	.69	.72	.76	.80	.80	.81	.81	.82	.82	.82
KNOXVILLE												
MAR 12	.26	.38	.55	.75	.88	1.04	1.10	1.26	1.42	1.65	2.20	2.33
MAY 27	.26	.38	.43	.48	.55	.60	.71	.85	.87	.87	.88	.88
JUN 30	.25	.35	.40	.47	.61	.61	.61	.61	.61	.61	.61	.61
JUL 7	.35	.50	.55	.60	.65	.69	.75	.75	.75	.75	.75	.75
JUL 20	.25	.50	.55	.56	.57	.57	.58	.60	.63	.63	.85	1.06
AUG 7	.27	.50	.72	.81	.85	.86	.89	.89	.91	.92	.92	.92
AUG 22	.20	.34	.42	.48	.75	.83	.96	1.01	1.02	1.02	1.03	1.05
AUG 29	.20	.40	.50	.67	.90	.96	.99	1.01	1.01	1.01	1.01	1.01
SEP 4	.25	.40	.50	.58	.62	.62	.62	.63	.63	.64	.64	.65
MEMPHIS												
MAR 4-5	.22	.34	.43	.47	.57	.84	.97	1.15	1.19	1.19	1.20	1.20
APR 19	.27	.39	.43	.46	.55	.60	.63	.73	.75	.76	.76	.77
APR 28	.40	.69	.90	.97	.99	1.16	1.21	1.29	1.33	1.37	1.42	1.44
APR 29	.23	.30	.32	.37	.43	.54	.54	.55	.55	.55	.68	.70
JUN 16	.24	.46	.64	.82	1.11	1.33	1.35	1.35	1.36	1.36	1.38	1.42
JUN 19	.32	.60	.75	.76	.77	.77	.77	.77	.77	.95	1.09	1.09
JUL 7	.26	.42	.57	.59	.61	.63	.63	.63	.63	.63	.67	.67
JUL 13	.33	.53	.66	.85	1.01	1.13	1.15	1.17	1.18	1.18	1.19	1.20
JUL 20	.24	.32	.39	.41	.41	.61	.63	.64	.65	.66	.66	.66
JUL 29	.39	.47	.48	.49	.51	.52	.52	.52	.52	.52	.52	.52
AUG 2	.41	.52	.61	.67	.78	.80	.81	.81	.81	.81	.81	.81
NASHVILLE												
MAR 11	.23	.33	.46	.50	.66	.80	.87	.98	1.04	1.12	1.46	1.51
MAR 16	.22	.36	.46	.55	.72	.96	1.35	1.90	2.00	2.03	2.08	2.15
JUL 7	.24	.48	.49	.50	.50	.50	.50	.50	.50	.50	.50	.50
JUL 13	.20	.28	.40	.45	.58	.88	.94	1.13	1.20	1.29	1.30	1.30
JUL 18	.16	.30	.40	.44	.51	.54	.54	.54	.54	.55	.55	.55
JUL 20	.23	.42	.43	.44	.45	.45	.45	.45	.45	.45	.45	.45
AUG 25	.17	.30	.40	.48	.54	.68	.76	.79	.81	.82	.82	.82
AUG 28	.15	.25	.38	.50	1.08	1.48	1.88	2.38	M	M	M	M
SEP 3	.24	.46	.70	.76	.96	1.11	1.13	1.34	1.47	1.47	1.47	1.47
TEXAS												
ABILENE												
APR 28	.25	.41	.47	.52	.63	.81	.81	.81	.83	.85	.88	.91
MAY 5	.30	.58	.70	.91	1.18	1.37	1.54	1.62	1.66	1.67	1.74	1.83
MAY 22	.19	.32	.44	.52	.62	.78	.98	1.12	1.19	1.26	1.42	1.49
MAY 30	.56	.72	1.04	1.20	1.41	1.62	1.67	1.73	1.76	1.81	1.81	1.84
JUN 17	.34	.48	.60	.68	.76	.78	.82	.87	.88	.88	.90	.94
AUG 30	.40	.62	.88	1.14	1.74	2.04	2.66	2.80	2.82	2.83	2.86	2.87
AMARILLO												
MAY 31	.16	.20	.26	.34	.47	.57	.83	.99	.99	.99	.99	.99
JUN 8	.22	.30	.36	.39	.45	.58	.65	.67	.73	.79	.82	.82
JUN 16	.20	.40	.55	.67	.81	.89	.90	.91	.96	.99	1.07	1.10
JUN 18	.15	.30	.40	.51	.60	.61	.64	.65	.65	.65	.65	.66
JUL 12	.34	.64	.69	.71	.75	.75	.75	.80	.84	.86	.87	.87
AUG 13	.17	.28	.32	.44	.52	.69	.78	.83	.86	.89	1.03	1.12
OCT 20	.38	.60	.65	.66	.72	.91	1.03	1.08	1.09	1.10	1.10	1.10
AUSTIN												
APR 5	.20	.36	.46	.59	.80	.97	1.16	1.26	1.43	1.65	1.85	1.99
MAY 20	.30	.36	.38	.38	.39	.39	.39	.43	.43	.43	.44	.61
MAY 30	.17	.29	.39	.42	.48	.48	.48	.48	.48	.48	.48	.48
JUN 18	.26	.46	.59	.64	.73	.81	.82	.82	.82	.82	.82	.82
SEP 15	.27	.41	.53	.59	.67	.70	.71	.76	.80	.83	.89	.90
BROWNSVILLE												
MAY 5	.23	.36	.42	.45	.49	.78	.92	.97	.98	.98	.98	.98
MAY 6	.24	.43	.52	.59	.65	.74	.88	.96	1.17	1.31	1.49	1.56
JUN 18	.25	.42	.65	.80	1.04	1.28	1.40	1.50	1.50	1.50	1.91	1.92
SEP 17	.20	.40	.48	.52	.59	.62	.62	.63	.63	.63	.63	.63
SEP 20	.22	.37	.46	.59	.77	1.01	1.15	1.16	1.16	1.16	1.18	1.31
CORPUS CHRISTI												
JUN 17	.32	.47	.59	.74	.91	.97	.98	1.00	1.01	1.05	1.07	1.09
AUG 11	.35	.68	.88	1.04	1.07	1.07	1.11	1.42	1.52	1.52	1.78	1.81
OCT 14	.21	.41	.55	.69	.79	.86	.93	.95	.96	.96	.96	.96
OCT 22	.29	.35	.36	.36	.43	.50	.53	.53	.53	.68	.86	.89
DALLAS												
APR 24	.39	.42	.43	.43	.44	.44	.44	.44	.45	.48	.55	.55
APR 27	.67	.71	.75	.82	.88	.92	.96	1.07	1.08	1.08	1.08	1.08
APR 28	.40	.57	.70	.78	1.09	1.26	1.56	1.76	1.92	1.93	1.93	2.25
JUN 16	.26	.45	.51	.60	.65	.93	.97	1.01	1.05	1.06	1.07	1.10
JUL 14	.26	.42	.54	.63	.67	.77	.88	1.04	1.29	1.42	1.57	1.59
AUG 28	.32	.51	.60	.68	.71	.86	.87	.89	.89	.89	.89	.89
SEP 7	.23	.37	.42	.60	.68	.70	.75	.75	.75	.75	.75	.75
EL PASO												
MAY 23	.22	.37	.40	.52	.57	.70	.71	.71	.71	.71	.71	.71
FORT WORTH												
APR 27	.55	.86	1.04	1.12	1.18	1.27	1.30	1.61	1.63	1.65	1.66	1.67
APR 28	.35	.57	.58	.65	.95	1.02	1.17	1.18	1.34	1.41	1.55	1.68
JUL 14	.28	.50	.51	.54	.60	.84	.89	1.15	1.55	1.68	1.83	2.08
AUG 13	.25	.50	.57	.67	.79	.80	.81	.81	.81	.81	.81	.81
AUG 30	.40	.75	.77	.84	.86	.90	.98	1.00	1.00	1.00	1.00	1.00
AUG 31	.42	.80	.82	.88	.92	.92	.92	.92	.92	.92	.92	.92
SEP 12	.30	.60	.70	.78	.95	.98	1.01	1.05	1.09	1.10	1.11	1.13
GALVESTON U												
JUN 18	.22	.32	.39	.43	.49	.52	.56	.58	.59	.59	.59	.59

M No record

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
TEXAS												
GALVESTON U												
JUN 20	.19	.34	.41	.42	.42	.42	.42	.42	.42	.42	.42	.42
JUN 21	.33	.56	.79	1.01	1.30	1.55	1.71	1.73	1.76	1.78	1.82	1.83
JUL 26	.55	.72	.74	.75	.78	.82	.86	.89	.89	.89	.91	.95
SEP 6	.40	.61	.80	1.00	1.13	1.16	1.17	1.17	1.17	1.17	1.17	1.17
SEP 17	.13	.24	.31	.39	.52	.72	1.00	1.15	1.31	1.41	1.46	1.48
SEP 19	.30	.39	.44	.48	.51	.51	.51	.51	.51	.51	.51	.51
SEP 19	.28	.50	.65	.81	.99	.99	.99	.99	.99	.99	.99	.99
NOV 5	.31	.59	.80	.93	1.20	1.52	1.85	1.85	1.85	1.86	1.96	1.97
NOV 8	.19	.34	.50	.62	.72	.77	.85	.91	.98	.98	.99	1.00
DEC 20	.16	.27	.41	.48	.69	.76	.76	.8M	.9K	1.00	1.1J	1.2L
HOUSTON U												
JAN 11	.32	.34	.35	.35	.35	.39	.39	.39	.54	.58	.59	.59
MAY 22	.33	.48	.59	.80	1.18	1.68	2.25	2.71	2.82	2.83	2.94	2.95
MAY 28	.39	.61	.73	.85	1.02	1.04	1.04	1.04	1.04	1.04	1.04	1.04
JUN 16	.25	.46	.65	.80	.93	.96	.97	.97	.98	.99	.99	1.01
JUN 22	.20	.38	.50	.56	.63	.78	.96	1.01	1.03	1.03	1.07	1.07
JUN 24	.31	.51	.62	.77	.95	1.00	1.01	1.03	1.03	1.04	1.05	1.05
JUN 26	.43	.70	.87	1.01	1.15	1.28	1.36	1.39	1.39	1.39	1.39	1.39
JUN 28	.35	.52	.67	.79	.95	1.02	1.05	1.06	1.06	1.07	1.07	1.07
JUN 29	.28	.47	.60	.68	.71	.72	.73	.73	.73	.74	.78	.78
JUN 30	.23	.31	.33	.35	.37	.63	.68	.68	.68	.69	.70	.70
JUL 2	.27	.43	.49	.50	.51	.51	.51	.51	.52	.52	.52	.52
AUG 19	.28	.43	.61	.71	.84	.89	.90	.90	.90	.90	.90	.90
AUG 30	.20	.33	.41	.43	.46	.46	.47	.47	.47	.47	.47	.47
SEP 13	.60	1.20	1.48	1.68	1.92	2.13	2.25	2.28	2.29	2.29	2.29	2.29
SEP 19	.22	.40	.50	.61	.75	1.02	1.29	1.44	1.47	1.47	1.48	1.61
LAREDO												
FEB 11	.25	.50	.55	.77	.90	.92	.93	.93	.93	.93	.93	.93
MAY 6	.55	.90	1.20	1.40	1.75	1.90	1.90	1.92	1.92	1.92	1.92	1.92
JUN 17	.35	.65	.90	1.25	1.55	1.63	1.68	1.69	1.77	1.83	1.94	2.15
JUN 17	.30	.50	.55	.59	.82	1.02	1.20	1.45	1.15	1.74	2.05	2.25
SEP 13	.25	.38	.45	.50	.75	.75	.80	.83	.83	.83	.83	.85
NOV 27	.18	.31	.36	.41	.60	.63	.64	.67	.68	.69	.70	.72
LUBBOCK												
MAY 5	.20	.32	.42	.46	.50	.54	.57	.62	.69	.72	.80	1.24
MAY 21	.25	.50	.70	.90	1.10	1.40	1.61	1.68	1.78	1.86	1.94	1.94
MAY 31	.18	.34	.38	.47	.54	.88	1.06	1.53	1.62	1.96	2.09	2.25
JUN 13	.26	.38	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45
AUG 18	.28	.44	.60	.72	.82	.90	.92	.93	.93	.93	.94	.94
AUG 30	.24	.34	.40	.48	.66	.70	.74	.77	.78	.78	.88	1.04
SEP 2	.37	.41	.43	.45	.49	.50	.55	.56	.56	.56	.56	.56
MIDLAND												
MAY 15	.21	.33	.40	.52	.62	.72	.74	.75	.78	.78	.78	.78
MAY 22	.32	.48	.60	.64	.70	.76	.77	.80	.80	.82	.83	.84
JUN 19	.44	.77	1.02	1.12	1.18	1.22	1.25	1.29	1.37	1.43	1.50	1.53
JUL 28	.36	.52	.59	.66	.78	.90	.94	.95	.96	.96	.96	.96
PORT ARTHUR												
JAN 17	.16	.30	.33	.44	.51	.56	.66	.77	.87	1.07	1.26	1.32
JAN 19	.31	.42	.49	.50	.60	.77	.85	1.10	1.37	1.54	1.72	2.11
JUN 17	.19	.34	.40	.44	.47	.49	.50	.52	.52	.52	.52	.52
JUN 23	.20	.30	.37	.38	.39	.40	.40	.40	.40	.40	.40	.40
JUN 24	.33	.50	.63	.66	.66	.66	.66	.66	.66	.66	.66	.66
JUL 23	.23	.38	.42	.51	.70	.73	.73	.73	.73	.73	.73	.73
JUL 26	.49	.95	1.09	1.11	1.12	1.14	1.15	1.15	1.15	1.15	1.15	1.15
JUL 26	.26	.41	.53	.64	.74	1.17	1.28	1.35	1.37	1.40	1.43	1.47
AUG 31	.25	.34	.40	.42	.49	.54	.55	.56	.56	.56	.56	.56
SEP 14	.30	.56	.73	.80	.97	1.14	1.15	1.15	1.15	1.15	1.15	1.15
SEP 17	.27	.36	.44	.50	.70	.89	1.10	1.35	1.54	1.81	2.16	2.44
SEP 17	.15	.25	.35	.43	.59	.83	1.11	1.46	1.66	1.78	2.04	2.26
SEP 17	.27	.47	.63	.76	1.12	1.61	2.04	2.48	2.88	3.09	3.22	3.63
SEP 18	.21	.32	.45	.48	.55	.56	.56	.56	.56	.56	.56	.56
NOV 5	.54	.69	.81	.81	.83	.86	.91	.97	1.02	1.08	1.17	1.31
NOV 8	.14	.21	.31	.40	.56	.86	1.08	1.29	1.49	1.73	2.05	2.43
SAN ANGELO												
MAY 19-20	.38	.75	.93	1.08	1.25	1.37	1.42	1.48	1.56	1.62	1.73	1.85
MAY 22	.37	.55	.63	.78	.91	.93	.95	.97	1.03	1.09	1.26	1.35
JUN 11	.21	.40	.45	.57	.74	.91	.99	1.00	1.00	1.00	1.00	1.00
JUN 19	.15	.30	.32	.37	.42	.42	.43	.43	.44	.44	.45	.46
AUG 14	.18	.29	.39	.49	.64	.78	.86	.88	.92	.97	1.00	1.02
NOV 19	.23	.35	.36	.41	.47	.48	.49	.51	.53	.53	.56	.57
SAN ANTONIO												
FEB 10	.31	.43	.45	.45	.46	.49	.51	.51	.51	.53	.53	.66
MAY 5	.34	.67	.86	1.01	1.37	1.76	2.12	2.29	2.35	2.37	2.40	2.41
JUN 24	.26	.50	.65	.80	1.01	1.07	1.08	1.09	1.09	1.09	1.09	1.09
OCT 24	.26	.34	.47	.54	.63	.84	.91	.98	1.07	1.12	1.46	1.62
VICTORIA												
APR 30	.25	.43	.45	.47	.55	.64	.70	.71	.73	.73	.73	.73
MAY 22	.50	.65	.75	.79	.95	1.05	1.10	1.13	1.15	1.16	1.17	1.17
JUN 25	.45	.75	.79	.83	.85	1.05	1.32	1.43	1.49	1.50	1.50	1.55
JUN 27	.40	.65	1.00	1.23	1.35	1.40	1.43	1.43	1.43	1.43	1.43	1.43
AUG 21	.35	.65	.90	1.05	1.40	1.45	1.45	1.45	1.45	1.45	1.45	1.45
AUG 25	.27	.42	.51	.53	.55	.55	.55	.55	.55	.55	.55	.55
AUG 30	.20	.35	.45	.48	.50	.50	.50	.50	.50	.50	.50	.50
OCT 25	.20	.32	.35	.41	.57	.72	.77	.80	.80	.80	.80	.80
WACO												
MAR 10	.33	.54	.56	.60	.66	.68	.70	.72	.72	.72	.72	.72
APR 28	.34	.44	.53	.55	.93	.95	.95	.95	.95	.95	.95	1.15
MAY 6	.55	1.00	1.35	1.73	2.48	2.78	2.88	2.88	2.88	2.88	2.88	2.88
MAY 28	.55	1.10	1.20	1.25	1.35	1.35	1.36	1.37	1.39	1.41	1.42	1.44
JUN 16	.17	.31	.37	.42	.45	.47	.51	.52	.53	.55	.65	.73
JUN 28	.25	.32	.35	.37	.40	.43	.43	.45	.45	.45	.45	.45
OCT 23	.30	.50	.55	.57	.60	.60	.60	.60	.60	.62	.71	.72
WICHITA FALLS												
MAR 30	.30	.44	.50	.58	.71	.80	.80	.80	.81	.91	1.01	1.16
MAY 4	.26	.43	.53	.55	.56	.59	.73	.97	1.11	1.45	1.45	1.45
MAY 19	.20	.32	.43	.52	.61	.63	.63	.63	.63	.63	.63	.63
JUL 13	.21	.31	.41	.52	.74	1.02	1.34	1.94	M	M	M	M
JUL 29	.31	.51	.71	.73	.74	.74	.74	.74	.74	.74	.74	.74
AUG 30	.21	.37	.49	.53	.55	.56	.58	.59	.61	.62	.72	.76
SEP 6	.22	.41	.53	.60	.66	.69	.70	.70	.70	.70	.70	.70
UTAH												
MILFORD	NONE											

M No record

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
UTAH												
SALT LAKE CITY						NONE						
WENDOVER						NONE						
VERMONT												
BURLINGTON												
JUL 30	.23	.28	.35	.48	.68	.78	.79	.82	.84	.85	.86	.86
AUG 4	.22	.32	.36	.38	.42	.44	.46	.46	.47	.47	.47	.47
AUG 7	.22	.42	.48	.52	.58	.64	.76	.76	.76	.76	.76	.76
VIRGINIA												
LYNCHBURG												
JUL 28	.23	.35	.43	.48	.50	.56	.58	.63	.63	.63	.74	.76
SEP 5	.15	.22	.31	.32	.39	.70	.76	.79	.85	.86	.86	.86
NORFOLK												
JUN 3	.10	.19	.28	.36	.50	.60	.76	.87	.98	1.03	1.09	1.14
JUN 14	.40	.69	.82	.86	.86	.86	.86	.86	.86	.86	.86	.86
JUL 28	.17	.25	.36	.42	.48	.59	.68	.68	.68	.68	.89	.89
AUG 13	.24	.32	.36	.40	.52	.59	.60	.60	.61	.62	.62	.62
AUG 23	.25	.35	.44	.60	.75	1.01	1.08	1.09	1.09	1.09	1.09	1.09
RICHMOND												
JUN 7- 8	.38	.53	.61	.70	.83	1.03	1.07	1.10	1.10	1.12	1.13	1.14
JUN 20	.25	.49	.53	.54	.57	.60	.61	.62	.62	.62	.62	.62
AUG 11	.20	.35	.45	.46	.46	.46	.46	.46	.46	.46	.46	.46
AUG 21	.43	.72	.91	1.14	1.51	1.90	1.98	2.09	2.16	2.19	2.19	2.19
ROANOKE						NONE						
WASHINGTON												
OLYMPIA						NONE						
SEATTLE U						NONE						
SPOKANE						NONE						
STAMPEDE PASS R						NONE						
TATOOSH ISLAND R												
OCT 13	.15	.25	.34	.45	.57	.70	.81	.85	.94	1.02	1.13	1.26
WALLA WALLA U						NONE						
YAKIMA												
JUL 7	.18	.30	.35	.38	.41	.45	.49	.57	.62	.64	.65	.66
WEST INDIES												
SAN JUAN P.R.												
APR 1	.25	.40	.61	.74	.97	1.08	1.13	1.18	1.21	1.21	1.21	1.33
APR 5	.25	.36	.43	.47	.53	.53	.54	.54	.54	.54	.54	.54
APR 13	.36	.51	.57	.62	.64	.64	.64	.66	.66	.66	.66	.66
MAY 16-17	.26	.51	.73	.88	1.03	1.15	1.17	1.18	1.21	1.21	1.22	1.42
MAY 1	.18	.30	.38	.41	.51	.53	.54	.54	.54	.54	.54	.54
MAY 25	.18	.29	.46	.49	.50	.50	.66	.73	.73	.73	.74	.96
JUN 28	.23	.30	.36	.38	.41	.43	.61	.68	.72	.78	.85	.93
SEP 5	.30	.50	.65	.74	.89	1.10	1.23	1.33	1.59	1.79	1.82	2.49
SEP 7	.23	.35	.42	.46	.50	.61	.70	.73	.70	.7	.73	.70
WEST VIRGINIA												
BECKLEY S												
JUL 22	.32	.52	.73	.90	1.09	1.17	1.24	1.29	1.29	1.29	1.29	1.29
SEP 12	.25	.43	.54	.60	.62	.65	.73	.83	.88	.88	.88	.88
CHARLESTON												
MAY 10	.38	.41	.45	.46	.47	.47	.47	.47	.47	.47	.47	.47
MAY 17	.30	.40	.40	.43	.45	.45	.60	.65	.80	.83	.85	.85
JUL 29	.29	.36	.37	.38	.39	.41	.42	.44	.44	.45	.45	.45
AUG 4	.18	.30	.33	.34	.35	.36	.40	.44	.45	.45	.48	.50
AUG 7	.15	.25	.33	.47	.64	.90	1.00	1.10	1.15	1.17	1.21	1.22
ELKINS												
MAR 19	.25	.45	.50	.60	.79	1.00	1.16	1.25	1.35	1.38	1.42	1.53
JUN 9	.38	.44	.44	.47	.55	.55	.55	.55	.55	.55	.55	.55
JUN 26	.36	.39	.39	.40	.41	.44	.45	.45	.45	.46	.48	.50
JUL 2	.16	.32	.37	.44	.50	.54	.60	.63	.65	.65	.65	.66
JUL 20	.20	.37	.43	.48	.51	.52	.54	.54	.56	.58	.64	.67
JUL 28	.24	.34	.37	.38	.39	.40	.40	.40	.40	.40	.40	.40
HUNTINGTON												
MAY 17	.25	.40	.49	.70	.79	.79	.80	.80	.80	.80	.80	.80
JUL 29	.35	.41	.45	.51	.53	.53	.53	.53	.53	.53	.53	.53
AUG 7	.12	.22	.36	.43	.62	.65	.65	.65	.65	.65	.65	.65
AUG 19	.17	.27	.40	.51	.60	.71	.71	.71	.71	.71	.71	.71
SEP 12	.33	.49	.51	.60	.88	.91	.96	1.00	1.02	1.05	1.06	1.07
PARKERSBURG U												
MAR 19	.37	.43	.48	.52	.55	.65	.77	.83	.89	.97	1.02	1.15
JUN 28	.25	.38	.45	.50	.53	.56	.57	.60	.61	.63	.65	.66
JUN 29	.26	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
JUN 30	.15	.28	.37	.41	.44	.45	.45	.45	.45	.45	.45	.45
JUL 19	.37	.56	.63	.64	.64	.64	.64	.64	.64	.64	.64	.64
JUL 20	.18	.33	.36	.39	.40	.40	.40	.40	.40	.40	.40	.40
JUL 28	.17	.34	.43	.44	.46	.46	.46	.46	.46	.46	.46	.46
SEP 12	.26	.35	.39	.40	.50	.51	.53	.54	.54	.55	.58	.59
WISCONSIN												
GREEN BAY												
JUN 27	.23	.43	.48	.55	.86	.94	.97	1.03	1.10	1.18	1.23	1.23
JUL 21	.24	.45	.54	.64	.88	.94	1.00	1.00	1.00	1.00	1.00	1.00
LA CROSSE												
JUN 8	.18	.35	.40	.44	.48	.50	.52	.53	.53	.53	.53	.53
JUL 18	.32	.35	.36	.37	.39	.41	.41	.41	.41	.41	.41	.41
JUL 30	.33	.41	.43	.44	.46	.48	.49	.49	.49	.49	.49	.49
AUG 2	.17	.32	.36	.42	.53	.55	.58	.58	.58	.58	.58	.58
AUG 23	.47	.89	.92	1.00	1.17	1.27	1.29	1.30	1.31	1.31	1.31	1.31

S Record began May 15, 1963

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
WISCONSIN												
MADISON												
MAY 9	.26	.28	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
JUN 5	.35	.50	.69	1.00	1.15	1.75	2.15	2.27	2.62	2.75	3.00	3.13
JUN 7	.34	.58	.77	.88	.92	.92	.92	.93	.94	.97	.98	.98
JUN 27	.36	.59	.84	.97	1.09	1.15	1.22	1.22	1.23	1.23	1.23	1.23
SEP 12	.30	.36	.40	.46	.48	.55	.57	.57	.57	.57	.57	.57
MILWAUKEE												
JUN 8	.20	.38	.54	.66	.72	.74	.75	.76	.77	.78	.78	.78
WYOMING												
CASPER												
JUL 26	.38	.51	.52	.52	.52	.52	.52	.52	.52	.52	.52	.52
CHEYENNE												
SEP 8	.30	.42	.65	.75	.84	.93	1.01	1.06	1.08	1.08	1.26	1.26
LANDER												
JUN 14	.27	.40	.46	.53	.61	.75	.88	1.08	1.15	1.42	1.70	1.80
SHERIDAN												
SEP 10	.58	.64	.66	.70	.72	.73	.74	.75	.75	.75	.75	.75
CORRECTIONS												
FLORIDA												
ORLANDO												
AUG 24, 1962	.25	.44	.62	.80	1.11	1.19	1.20	1.20	1.20	1.20	1.20	1.20
SEP 7, 1962	.13	.21	.30	.38	.57	.65	.71	.75	.76	.76	.76	.76
TALLAHASSEE												
MAR 21, 1962	.43	.85	1.12	1.22	1.35	1.68	1.88	2.01	2.28	2.70	3.15	3.40
WEST PALM BEACH												
AUG 28, 1962	.23	.44	.65	.87	1.07	1.33	1.36	1.36	1.37	1.37	1.39	1.40
GEORGIA												
ATHENS												
AUG 13, 1962	.19	.23	.37	.44	.66	.73	.75	.76	.76	.76	.76	.82
ROME												
JUN 23, 1962	.40	.59	.87	1.17	1.32	1.37	1.37	1.37	1.43	1.69	1.69	1.69
VALDOSTA												
FEB 19, 1962	.22	.39	.44	.56	.88	1.21	1.24	1.24	1.24	1.24	1.24	1.24
INDIANA												
EVANSVILLE												
MAY 26, 1962	.20	.38	.52	.62	.73	.86	1.00	1.00	1.00	1.00	1.00	1.00
SEP 3, 1962 E	.55	.78	1.00	1.22	1.68	1.81	1.82	1.85	1.85	2.02	2.04	2.04
SEP 14, 1962	.22	.38	.50	.64	.90	.98	.99	1.00	1.00	1.00	1.00	1.00
KANSAS												
DODGE CITY												
JUL 17, 1962	.29	.52	.63	.83	1.25	1.50	1.64	1.74	1.74	1.74	1.74	1.74
TOPEKA												
MAY 28, 1962	.20	.36	.56	.63	.78	.88	.90	.92	.94	.94	1.01	1.28
LOUISIANA												
NEW ORLEANS												
JAN 22, 1953	.25	.27	.27	.28	.29	.31	.34	.36	.36	.36	.36	.36
NEW ORLEANS AUDUBON												
APR 26, 1962	.40	.66	.88	1.28	1.51	1.64	1.69	1.74	1.75	1.75	1.75	1.75
SHREVEPORT												
APR 27, 1962	.18	.27	.39	.52	.75	.83	.86	.88	.89	.91	.92	.92
MICHIGAN												
GRAND RAPIDS												
APR 28, 1962	.19	.31	.41	.59	.67	.82	.87	.92	.92	.92	.92	.92
MISSISSIPPI												
VICKSBURG U												
JAN 14, 1962	.28	.54	.81	.86	.99	1.13	1.18	1.20	1.21	1.21	1.23	1.24
APR 11, 1962	.41	.80	1.08	1.46	1.67	2.43	2.57	2.78	3.78	3.98	4.20	4.28
MISSOURI												
KANSAS CITY												
JUL 11, 1962	.33	.52	.66	.86	1.27	1.44	1.45	1.46	1.46	1.46	1.46	1.46
NORTH CAROLINA												
CAPE HATTERAS R												
APR 11, 1962	.26	.39	.56	.73	1.06	1.51	1.81	2.05	2.55	2.66	2.74	2.97
JUN 14, 1962	.18	.34	.40	.55	.80	1.13	1.30	1.48	1.64	1.71	1.74	1.77
JUN 29, 1962	.19	.27	.45	.51	.66	.86	.96	1.11	1.20	1.55	1.82	2.02
NOV 3, 1962	.30	.55	.85	.95	1.25	1.71	2.09	2.41	2.46	2.48	2.53	2.65
NOV 9, 1962	.46	.75	.92	1.02	1.12	1.20	1.26	1.31	1.37	1.43	1.50	1.60
GREENSBORO												
JUN 2, 1962	.22	.38	.60	.76	1.02	1.23	1.33	1.38	1.40	1.42	1.42	1.42
OREGON												
ASTORIA												
OCT 8, 1962	.30	.51	.77	1.00	1.13	1.24	1.40	1.50	1.60	1.90	2.00	2.10

E Estimated

EXCESSIVE SHORT DURATION RAINFALL

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180
CORRECTIONS												
TENNESSEE												
KNOXVILLE												
JUL 25, 1962	.26	.35	.52	.68	1.02	1.26	1.52	1.94	1.95	1.95	1.95	1.95
TEXAS												
ABILENE												
AUG 31, 1962	.18	.22	.36	.43	.62	.73	.90	.92	.98	1.17	1.20	1.20
AMARILLO												
JUN 18, 1962	.30	.60	.80	1.00	1.60	1.78	1.94	2.14	2.29	2.79	2.81	2.81
AUG 13, 1962	.14	.19	.25	.30	.48	.73	.96	1.11	1.16	1.20	1.23	1.32
FORT WORTH												
APR 22, 1962	.32	.60	.72	.95	1.12	1.40	1.67	1.85	1.87	1.87	1.90	1.92
WEST VIRGINIA												
ELKINS												
OCT 4, 1962	.20	.25	.30	.38	.60	.71	.74	.74	.80	.87	.88	.88
WEST INDIES												
SAN JUAN												
MAR 20, 1962	.28	.55	.75	.83	1.30	1.65	1.80	1.82	1.83	1.83	1.83	1.83
MAY 1, 1962	.18	.29	.41	.58	.82	1.04	1.11	1.21	1.23	1.26	1.29	1.30
MAY 24, 1962	.21	.29	.50	.57	.61	.69	.69	.71	.71	.71	.73	.73

Data from airport unless otherwise specified.
U indicates Urban, R indicates Rural, sites.

* Maximum of record for this duration and station. Period of record is that compiled in Weather Bureau Technical Paper No. 2, revised, plus 1962 and 1963 data. New records are denoted only for 5, 10, 15, 30, 60, 120, and 180 minutes. The continuity of record at stations that have changed location is described on page 2 of the above reference.

Maxima of record, as published in Weather Bureau Technical Paper No. 2, revised, were exceeded in 1962 at the following stations for the durations shown. The new record and date are shown opposite each duration for which record was exceeded:

Red Bluff, California
10 minute duration .77 on October 12
15 " " .98 on October 12

Moline, Illinois
5 minute duration .68 on July 24
10 " " 1.01 on July 24

Evansville, Indiana
5 minute duration .75 on May 26

Des Moines, Iowa
5 minute duration 1.20 on June 10
10 " " 1.46 on June 10
15 " " 1.48 on June 10

Dodge City, Kansas
5 minute duration .70 on September 16

Goodland, Kansas
5 minute duration .50 on May 17

Wichita, Kansas
5 minute duration .80 on July 29
10 " " 1.34 on July 23

Baton Rouge, Louisiana
120 minute duration 3.80 on April 27
180 " " 4.80 on April 27

Caribou, Maine
30 minute duration .97 on July 9

Marquette, Michigan
10 minute duration 1.05 on September 13

Muskegon, Michigan
10 minute duration .71 on September 13
15 " " 1.00 on September 13
30 " " 1.30 on September 13

St. Joseph, Missouri
60 minute duration 3.98 on May 19
120 " 5.24 on May 19
180 " 5.55 on May 19

Columbus, Ohio
10 minute duration 1.06 on August 4

Astoria, Oregon
10 minute duration .47 on October 8
15 " " .77 on October 8
30 " " 1.13 on October 8
60 " " 1.40 on October 8
120 " " 1.90 on October 8
180 " " 2.10 on October 8

Allentown, Pennsylvania
10 minute duration .86 on June 15
15 " " 1.08 on June 15

Nashville, Tennessee
180 minute duration 4.12 on December 13

Fort Worth, Texas
10 minute duration 1.10 on June 27

Milford, Utah
5 minute duration .30 on December 28
180 " " 1.09 on December 28

Station and date	Maximum precipitation in inches (5 to 180 minutes)											
	5	10	15	20	30	45	60	80	100	120	150	180

Salt Lake City AP, Utah
5 minute duration .50 on July 13
10 " " .92 on July 13
15 " " 1.26 on July 13
30 " " 1.39 on July 13
60 " " 1.94 on July 13
120 " " 1.99 on July 13
180 " " 1.99 on July 13

Huntington, West Virginia
5 minute duration .77 on July 1
10 " " 1.13 on July 1
15 " " 1.45 on July 1
30 " " 2.40 on July 1
60 " " 2.79 on July 1

SUNSHINE, AMOUNT AND PERCENT

YEAR 1963

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
ALABAMA																										
Birmingham	122	39	172	56	244	66	230	59	287	67	246	57	255	58	318	77	242	65	307	87	163	52	186	60	2772	62
Montgomery	119	37	178	58	240	64	212	54	262	61	270	63	290	67	297	72	233	63	288	82	177	56	196	63	2842	62
ALASKA																										
Anchorage	53	26	53	44	175	48	224	51	318	59	205	36	283	50	238	49	170	44	100	32	135	62	32	18	1986	45
Juneau	33	15	41	15	128	35	204	47	268	51	147	27	152	28	223	47	49	13	81	26	74	31	39	19	1439	37
Nome	32	16	101	42	152	41	173	38	179	31	159	25	174	28	72	14	198	51	110	37	113	59	36	27	1499	33
ARIZONA																										
Phoenix	268	84	276	90	332	90	344	88	368	85	427	99	404	92	323	78	333	90	308	88	272	87	301	97	3956	89
Prescott	255	81	264	86	315	85	298	76	380	88	399	92	343	78	276	66	309	83	286	82	229	74	284	93	3638	82
Tucson	267	83	279	90	313	84	338	87	368	86	420	98	339	78	268	65	311	84	305	86	269	85	295	94	3772	85
Yuma	272	85	290	94	354	95	350	90	389	91	423	99	410	94	364	88	331	89	286	81	262	83	305	98	4036	91
ARKANSAS																										
Ft. Smith	173	55	169	55	242	65	193	49	254	58	287	66	296	67	312	75	236	64	317	90	217	70	189	62	2885	65
Little Rock	156	50	185	60	274	74	224	57	317	73	350	81	284	64	302	73	262	70	305	87	190	61	179	58	3028	67
CALIFORNIA																										
Eureka (U)	179	60	125	42	174	47	221	55	183	41	321	71	315	69	182	43	195	52	145	42	126	42	162	56	2328	52
Fresno	219	71	187	62	308	83	291	74	378	86	410	93	445	100	398	95	319	86	263	75	117	38	47	15	3382	76
Los Angeles (U)	218	69	218	71	323	87	295	75	223	52	241	56	386	88	350	84	299	80	249	71	227	73	282	92	3311	74
Red Bluff	235	78	193	64	244	66	231	58	312	70	406	90	442	97	396	93	307	82	258	75	148	49	103	36	3275	73
Sacramento	172	56	169	56	255	69	249	63	339	77	429	97	451	100	387	92	306	82	272	78	108	36	53	19	3190	72
San Diego	215	67	211	68	289	78	308	79	236	55	207	48	308	71	301	73	269	72	239	68	231	73	278	89	3092	70
San Francisco (U)	168	55	188	62	294	79	272	69	249	57	344	78	348	77	287	68	290	78	235	68	135	44	222	74	3032	68
COLORADO																										
Denver	229	76	215	72	282	76	310	78	301	67	324	72	341	75	267	63	314	84	286	83	255	85	221	76	3345	75
Grand Junction	168	56	219	73	236	64	193	49	333	75	306	69	357	79	230	54	303	81	259	75	215	71	186	63	3005	68
Pueblo	243	80	239	79	295	80	336	85	306	69	362	82	351	78	303	72	314	84	273	79	272	89	238	80	3532	79
CONNECTICUT																										
Hartford	174	59	178	60	201	54	284	71	291	65	273	60	360	78	315	74	254	68	281	82	117	40	159	56	2887	65
New Haven	188	63	200	67	219	59	271	68	308	69	285	63	338	74	312	73	240	64	289	82	132	44	185	65	2967	66
DISTRICT OF COLUMBIA																										
Washington Nat'l Airport	177	58	162	54	230	62	275	69	287	65	303	68	345	76	316	75	231	62	287	83	161	47	177	60	2951	62
FLORIDA																										
Apalachicola (U)	183	56	192	62	273	74	331	86	310	73	287	68	---	--	---	--	---	--	311	88	192	60	200	63	----	--
Jacksonville	190	59	190	61	305	82	331	85	338	80	293	69	293	68	286	70	185	50	265	75	197	62	189	60	3062	69
Key West	260	78	247	78	333	89	329	86	339	82	281	69	286	68	272	68	204	55	268	75	195	59	211	64	3225	73
Lakeland (U)	198	60	165	52	237	64	301	78	287	68	241	58	253	59	265	65	170	46	264	74	189	59	156	48	2726	61
Miami Beach 1/	185	56	175	54	294	79	318	83	287	69	249	61	294	70	258	64	152	41	227	63	167	51	208	64	2814	63
Pensacola (U)	130	40	187	60	213	57	304	78	342	81	246	58	302	70	294	72	218	59	#300	85	167	52	147	46	2850	63
Tampa	198	60	185	59	225	61	285	74	342	81	343	82	297	70	318	78	248	67	267	75	193	60	152	47	3053	69
GEORGIA																										
Atlanta	150	47	196	64	260	70	276	71	323	75	266	62	315	72	331	80	252	68	326	93	209	67	206	67	3110	70
Macon	160	50	197	64	237	64	243	62	289	67	247	58	300	69	305	74	228	62	318	90	222	71	200	64	2946	66
Savannah	163	51	174	56	266	72	282	72	312	73	257	60	303	70	313	76	224	60	302	86	216	68	198	63	3010	68
HAWAII																										
Hilo	188	55	194	60	135	36	140	37	119	29	122	31	170	42	128	32	121	33	120	33	143	43	119	35	1699	38
Honolulu	185	54	226	71	164	44	200	53	266	65	287	71	303	73	294	74	253	69	256	71	184	55	210	62	2828	64
Kahului	216	63	244	76	262	70	245	65	292	72	316	79	333	81	330	83	266	72	261	72	271	81	227	67	3263	73
Lihue	194	57	231	72	186	50	152	40	194	48	236	58	269	65	247	62	---	--	159	44	225	68	229	68	----	--
IDAHO																										
Boise	172	59	166	57	242	65	214	53	456	64	264	57	441	94	374	87	266	71	177	52	96	33	114	41	2982	63
Pocatello	148	51	150	51	276	75	181	45	279	61	241	53	450	97	335	78	238	64	242	71	120	41	98	35	2758	62
ILLINOIS																										
Cairo (U)	208	60	208	68	245	66	245	62	275	63	346	79	334	75	318	76	267	72	299	86	175	57	215	72	3135	70
Chicago (Midway)	85	29	141	48	154	42	274	68	258	57	344	76	312	68	229	53	219	59	215	62	129	43	286	55	2646	55
Moline	121	41	163	55	176	48	270	67	311	69	314	69	333	72	264	62	228	61	227	66	150	51	177	62	2734	60
Peoria	107	36	168	56	186	50	264	66	281	63	363	80	327	72	279	65	269	72	265	77	151	51	178	62	2838	62
Springfield	122	41	156	52	156	54	262	67	298	67	359	80	369	81	334	79	322	86	288	83	182	61	211	73	3059	69
INDIANA																										
Evansville	151	50	173	57	200	54	254	64	323	73	376	85	354	79	324	77	269	72	307	88	139	46	161	54	3031	67
Ft. Wayne	94	31	135	45	129	35	222	56	312	70	354	78	361	79	283	66	290	78	269	78	138	46	125	43	2712	59
Indianapolis	179	59	204	68	185	50	257	65	303	68	325	73	329	72	274	65	273	73	276	80	167	56	165	57	2937	65
IOWA																										
Burlington	141	47	175	59	198	53	263	66	305	68	389	86	364	80	287	67	256	69	279	81	163	55	184	64	3004	66
Des Moines	119	40	149	50	203	55	208	52	202	45	313	69	333	72	234	55	205	55	250	73	146	49	156	55	2518	56
Sioux City	148	50	166	56	236	64	188	47	239	53	310	68	333	72	216	50	214	57	217	63	218	74	167	59	2652	59
KANSAS																										
Concordia	164	54	200	67	257	69	273	69	252	57	287	64	301	66	274	65	233	62	286	83	231	77	163	56	2921	66
Dodge City	236	77	236	75	267	72	310	78	266	60	319	72	365	81	304	72	293	78	292	84	236	77	202	68	3326	74
Topeka	141	46	180	60	224	60	259	65	236	53	331	74	341	75	295	70	225	60	277	80	200	66	181	62	2890	64
Wichita	183	60	195	65	230	62	256	65	215	49	314	71	343	76	316	75	245	66	269	77	210	69	167	56	2943	66
KENTUCKY																										
Louisville	152	50	148	49	175	47	226	57	267	60	270	61	289	64	267	63	242	65	300	86	142	47	158	53	2636	59
LOUISIANA																										
New Orleans (701 Loyola)	111	34	188	60	219	59	233	60	272	64	245	58	218	51	248	61	173	47	275	77	128	40	136	43	2445	55
Shreveport	142	44	203	63	257	69	209	54	300	70	319	75	321	74	328	79	233	63	312	88	195	62	178	57	2997	67
MAINE																										
Portland	134	46	171	58	223	60	237	59	276	61	288	62	307	66	239	55	224	60	252	74	89	31	155	58	2595	58
MARYLAND																										
Baltimore	160	53	152	50	225	61	296	75	286	64	290	65	369	81	304	72	225	60	294	85	179	59	187	64	2967	67
MASSACHUSETTS																										
Blue Hill Obs. (R)	140	49	140	58	194	54	240	62	275	63	279	63	289	65	273	66	209	58	252	76	85	30	151	55	2527	59
Boston	165	56	191	64	227	61	248	62	300	66	315	69	314	68	278	65	239	64	280	82	100	34	167	59	2824	63
Nantucket	125	42	152	51	220	59	271	68	291	65	301	67	262	57	287	67	191	51	237	69	90	30	155	54	2582	58
MICHIGAN																										
Alpena	165	58	181	62	240	65	283	70	308	67	331	71	384	81	253	58	191	51	232	68	113	39	139	51	2820	62
Detroit City AP	102	35	143	48	155	42	205	51	275	61	342	75	330	71	265	62	232	62	259	75	102	35	125	44	2535	55
Escanaba (U)	145	51	174	60	230	62	236	58	231	50	299	64	294	70	258	59	#	--	---	--	---	--	---	--	----	--
Grand Rapids	68	23	95	32	194	52	278	69	290	64	375	85	374	81	282	65	246	66	221	65	89	30	92	33	2604	--
Lansing	137	47	192	65	200	54	234	58	288	64	331	72	326	70	249	58	229	61	227	66	102	35	104	37	2619	57
Marquette (U)	144	51	148	51	235	63	274	67	301	65	317	67	341	71	291	66	217	58	211	62	86	30	111	41	2676	58

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
MICHIGAN (Cont'd)																										
Sault Ste. Marie	127	45	131	45	220	60	257	63	290	62	343	73	331	69	262	60	186	49	218	65	77	27	99	37	2541	55
MINNESOTA																										
Duluth	152	54	147	51	207	56	210	51	217	47	270	57	277	58	256	58	199	53	232	69	102	36	143	54	2412	54
Minneapolis-St. Paul	119	42	152	52	185	50	233	57	235	51	345	74	354	75	315	72	232	62	241	71	133	46	142	52	2686	59
MISSISSIPPI																										
Jackson	127	40	185	60	252	68	209	54	341	80	308	72	---	--	---	--	---	--	---	--	---	--	---	--	----	--
Vicksburg (U)	164	51	206	67	260	70	196	50	348	81	315	73	307	71	331	80	271	73	315	89	192	61	156	50	3061	69
MISSOURI																										
Columbia	145	48	145	48	203	55	256	65	259	58	313	70	343	76	323	76	281	75	264	76	181	60	212	72	2925	65
Kansas City	173	57	186	62	251	68	299	75	324	73	375	84	393	87	302	71	235	63	268	77	201	67	177	60	3184	70
St. Louis	142	46	149	49	225	61	228	58	243	55	341	77	333	74	251	59	285	76	297	86	192	63	204	69	2890	64
Springfield	180	58	177	58	250	67	238	60	303	69	334	76	384	86	332	79	254	68	317	91	212	69	173	58	3154	70
MONTANA																										
Billings	135	48	168	58	225	79	229	56	284	61	316	67	375	79	375	86	261	69	240	71	154	54	150	55	2980	67
Great Falls	81	29	167	58	237	64	189	46	286	61	244	51	388	81	357	81	271	72	221	65	98	35	98	37	2637	59
Havre	128	47	115	40	245	66	220	53	306	65	250	52	393	81	375	85	254	67	231	69	178	64	133	51	2828	63
Helena	119	42	160	55	227	61	175	43	290	62	219	46	368	77	352	80	256	68	207	61	100	35	140	52	2613	58
Missoula	74	26	115	40	211	57	252	62	333	71	214	45	364	76	348	79	242	64	148	44	81	29	49	18	2431	54
NEBRASKA																										
Lincoln (U)	143	48	169	57	231	62	221	55	237	53	306	68	320	70	281	66	196	52	289	84	229	77	171	59	2793	63
North Platte	189	64	180	60	258	70	276	69	265	59	369	82	355	77	261	61	201	54	254	74	255	86	222	77	3085	69
Omaha	149	50	165	56	221	60	241	60	250	56	342	76	341	74	282	66	205	55	277	81	185	62	179	62	2837	63
Valentine	220	75	178	60	246	67	219	55	260	57	270	59	363	78	305	71	208	55	289	84	237	81	189	67	2984	67
NEVADA																										
Ely	221	73	202	67	296	80	210	53	361	81	319	71	448	99	393	93	294	79	274	79	204	68	232	79	3454	78
Las Vegas	251	81	256	84	318	86	317	81	386	88	402	92	428	96	355	85	312	84	276	79	252	82	285	94	3838	86
Reno	256	83	191	64	290	78	305	77	343	77	334	75	443	98	392	92	290	78	206	60	185	61	190	65	3419	77
Winnemucca	241	81	165	55	251	68	170	42	200	45	189	42	447	98	373	88	254	68	214	62	111	37	120	42	2735	61
NEW HAMPSHIRE																										
Concord	132	45	180	61	292	52	235	58	270	59	306	66	307	66	259	60	239	64	267	78	80	27	162	58	2729	59
Mt. Washington Obs. (R)	107	36	86	29	138	37	125	30	206	44	233	50	146	31	84	19	186	49	204	59	27	9	117	41	1659	37
NEW JERSEY																										
Atlantic City Exp. Center	192	63	193	64	205	55	264	66	265	60	257	57	324	68	256	60	202	54	251	73	134	44	141	48	2684	60
Trenton (U)	179	60	168	56	209	56	284	71	286	64	273	61	322	71	268	63	216	58	265	77	158	53	188	65	2816	63
NEW MEXICO																										
Albuquerque	255	81	235	77	286	77	320	81	354	81	380	88	321	73	296	71	307	82	296	84	246	79	275	90	3571	80
Roswell	275	87	237	77	304	82	328	84	313	73	341	79	348	80	297	72	327	88	303	86	281	90	226	73	3580	81
NEW YORK																										
Albany	126	43	162	53	189	51	243	61	272	60	253	55	304	66	226	53	218	58	280	82	76	26	138	49	2487	56
Binghamton	93	32	125	41	180	49	286	71	294	65	304	67	294	64	225	52	247	66	269	78	48	16	76	27	2441	55
Buffalo	84	29	101	34	160	43	249	62	265	58	315	69	331	71	274	64	256	68	265	77	52	18	96	34	2448	55
New York Central Park Obs.	174	58	188	63	194	52	282	71	264	59	238	53	304	66	251	59	222	59	295	86	147	49	181	63	2740	61
Rochester	110	37	139	47	199	54	266	66	291	64	328	71	321	69	278	65	237	63	246	72	55	19	110	39	2580	58
Syracuse	103	35	138	47	180	49	257	64	280	62	318	69	346	74	257	60	263	70	268	78	69	24	104	37	2583	58
NORTH CAROLINA																										
Asheville (U)	202	65	200	58	254	69	277	71	281	65	213	49	255	51	262	63	217	58	323	92	172	56	157	52	2783	63
Cape Hatteras (R)	157	50	134	44	242	65	262	67	289	66	238	55	271	61	264	63	186	50	256	73	179	58	174	57	2652	60
Charlotte	170	54	198	65	251	68	248	63	259	60	288	66	322	73	323	78	253	68	314	90	200	65	184	60	3010	68
Greensboro	174	56	185	61	247	67	256	65	243	56	233	53	263	59	270	65	238	64	284	81	161	52	183	61	2737	62
Raleigh	180	58	185	61	275	74	259	66	279	64	249	57	256	58	248	59	205	55	268	87	164	53	164	54	2732	61
Wilmington	186	59	157	51	238	64	274	70	262	61	242	56	277	63	287	69	203	55	263	75	224	72	201	65	2814	63
NORTH DAKOTA																										
Bismarck	162	58	92	32	259	70	228	56	320	69	359	76	380	79	361	82	244	65	257	76	166	59	135	51	2963	66
Devils Lake (U)	184	67	154	52	253	69	195	48	270	57	*	--	---	--	---	--	---	--	---	--	---	--	---	--	----	--
Fargo	176	63	158	55	296	80	228	56	249	53	307	65	359	75	272	62	230	61	246	73	136	48	119	45	2776	61
Williston	176	64	105	37	220	60	168	41	228	48	293	61	366	76	335	76	255	68	251	75	164	59	138	53	2699	60
OHIO																										
Cincinnati Obs.	129	43	131	43	163	44	237	60	263	59	267	60	332	73	272	64	254	68	295	85	117	39	161	55	2620	59
Cleveland	120	40	132	44	181	49	292	73	311	69	353	78	330	72	245	57	236	63	243	71	66	22	116	41	2625	59
Columbus	125	42	159	53	179	48	268	67	307	69	308	69	319	70	244	57	269	72	278	81	117	39	107	37	2680	60
Dayton	131	40	131	44	145	39	224	56	244	55	259	58	345	76	270	64	276	74	290	84	121	40	164	56	2600	58
Sandusky (U)	183	62	199	67	194	52	271	68	352	78	358	79	391	85	313	73	255	68	*	--	---	--	---	--	----	--
Toledo	99	34	148	50	143	39	245	61	289	64	329	73	365	79	243	57	230	62	243	71	101	34	131	46	2566	58
OKLAHOMA																										
Oklahoma City	207	66	187	61	226	61	261	67	288	66	343	79	354	80	328	79	259	70	295	84	219	71	184	61	3151	71
Tulsa	203	65	176	56	237	64	220	56	188	43	270	62	300	67	330	79	247	66	277	79	228	74	174	57	2850	64
OREGON																										
Portland	128	45	75	26	113	30	91	22	261	56	200	43	195	41	225	51	225	60	93	27	66	23	73	27	1745	39
Roseburg	122	42	85	29	184	50	158	39	278	61	267	58	309	66	333	77	242	65	108	32	48	16	77	28	2211	50
PACIFIC AREA																										
Guam (Taguac) (R)	192	54	158	48	305	82	266	71	329	83	354	89	---	--	333	86	201	55	203	55	212	61	190	51	----	--
Johnson Island	283	83	270	83	270	72	250	66	120	30	226	58	249	62	244	62	296	81	273	75	220	65	207	60	2908	--
Koror	180	49	199	60	219	59	258	70	211	55	170	--	237	61	161	42	202	55	215	58	226	64	221	61	2499	--
Majuro	178	49	153	46	244	65	209	57	220	57	170	45	183	47	202	52	234	65	217	58	193	54	175	48	2378	54
Marcus Island	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--	---	--	279	85	253	77	217	66	----	--
Ponape	158	43	162	48	181	48	140	38	183	48	195	52	211	55	213	56	220	60	136	37	207	58	197	54	2203	48
Truk	183	50	161	48	203	54	152	41	121	31	118	31	182	47	138	36	177	48	111	30	221	63	139	38	1906	43
Yap	209	57	157	48	127	34	286	77	245	63	248	65	215	55	208	54	239	66	161	44	180	60	253	75	2528	55
PENNSYLVANIA																										
Harrisburg	151	50	170	57	168	45	265	67	317	71	265	59	365	80	291	68	235	63	282	82	139	47	145	50	2793	63
Philadelphia	170	57	165	55	183	49	284	71	291	65	263	59	301	66	260	61	213	57	252	73	165	55	174	60	2721	61
Pittsburgh (U)	131	44	136	45	149	40	220	55	283	63	288	64	312	68	232	55	266	71	290	84	111	37	113	39	2531	--
Pittsburgh	148	49	157	53	142	38	218	55	269	60	235	52	332	73	284	67	267	71	297	86	130	44	99	34	2578	58
Reading (U)	134	45	159	53	155	42	246	62	264	59	247	55	310	68	273	64	236	63	268	78	125	42	144	50	2561	57
Scranton	139	47	153	51	141	38	246	62	262	58	248	55	339	74	271	63	229	61	289	84	110	37	117	41	2544	57
PUERTO RICO																										
San Juan (Isla Verde)	198	57	185	57	279	75	263	70	240	59	240	61	272	67	260	66	207	56	222	61	190	56	242	71	2798	63
RHODE ISLAND																										
Providence	177	59	190	64	212	57	250	63	286	63	272	60	296	64	240	56	198	53	265	77	109	37	168	59	2663	60

See reference notes at end of table.

SUNSHINE, AMOUNT AND PERCENT

YEAR 1963

Station	January		February		March		April		May		June		July		August		September		October		November		December		Annual	
	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible	Hours	Percent of possible
SOUTH CAROLINA																										
Charleston	166	52	167	54	259	70	269	69	272	63	229	53	300	69	257	62	215	58	290	82	202	64	160	51	2786	62
Columbia	211	67	178	57	248	67	241	62	300	69	212	49	310	71	262	65	204	55	288	83	209	67	198	64	2861	64
Greenville-Spartanburg	179	57	202	66	244	66	269	69	270	62	213	49	284	64	305	73	260	70	298	85	182	59	188	62	2894	65
SOUTH DAKOTA																										
Huron	123	53	123	42	229	62	205	51	279	61	305	66	327	70	330	76	207	55	225	66	187	65	144	52	2684	60
Rapid City	143	49	130	44	239	65	213	53	267	58	291	63	341	73	314	72	250	67	259	76	194	67	134	48	2775	61
TENNESSEE																										
Chattanooga	149	48	192	63	237	64	245	63	290	67	187	43	258	58	307	74	277	74	325	93	170	55	160	53	2797	63
Knoxville	129	41	140	46	226	61	216	55	259	59	130	30	223	50	280	67	307	82	330	94	177	57	138	45	2555	57
Memphis	169	54	202	66	287	77	265	68	355	82	366	84	326	74	346	83	272	73	338	97	194	62	215	70	3335	75
Nashville	162	52	190	63	228	61	239	61	268	61	299	68	294	66	301	72	280	75	312	89	124	40	168	56	2865	64
TEXAS																										
Abilene	225	71	183	59	290	78	261	67	265	62	312	73	390	90	331	80	266	72	271	77	231	73	137	44	3162	70
Amarillo	255	81	209	69	285	77	308	79	303	70	338	78	363	82	315	76	295	79	327	89	286	92	203	67	3487	78
Austin	162	50	166	53	192	52	166	43	192	45	247	59	310	72	344	84	262	71	253	71	159	50	135	42	2588	58
Brownsville	125	38	193	59	156	42	237	62	258	62	219	53	258	61	284	70	208	56	186	52	215	66	151	46	2490	56
Corpus Christi	148	45	195	60	234	63	250	65	206	49	275	66	341	80	326	80	240	65	223	62	182	56	119	37	2739	61
Dallas	192	60	198	64	277	74	184	47	228	53	318	74	353	81	336	81	262	71	278	79	211	67	164	53	3041	67
El Paso	275	86	276	89	340	92	336	86	378	89	396	93	370	85	294	71	317	86	314	89	260	82	277	88	3833	86
Galveston (U)	194	39	194	62	249	67	266	69	316	75	321	76	356	83	348	85	266	72	279	79	188	59	150	47	3127	68
Houston	135	42	195	63	222	60	224	58	315	74	311	74	350	82	359	88	271	73	263	74	207	65	193	61	3043	68
Port Arthur	128	39	176	57	178	48	234	60	313	74	250	59	305	71	314	77	269	73	271	76	218	68	182	57	2838	63
San Antonio	204	63	209	65	225	61	213	55	221	52	296	70	334	78	353	86	279	75	256	72	186	58	171	54	2947	66
UTAH																										
Salt Lake City	148	49	119	63	245	66	135	34	335	75	321	71	386	84	337	79	293	78	250	73	145	49	110	38	2824	63
VERMONT																										
Burlington	90	31	159	54	197	53	200	49	310	68	301	65	308	66	344	56	263	70	253	74	48	17	145	53	2618	56
VIRGINIA																										
Lynchburg	187	61	157	52	270	60	273	69	253	58	292	66	272	61	219	52	231	62	277	80	171	56	172	58	2774	61
Norfolk	168	54	170	56	228	61	265	67	265	60	224	51	285	64	281	67	220	59	235	68	214	70	210	70	2765	57
Richmond	167	54	157	52	227	61	265	67	248	56	270	61	277	62	246	58	217	58	256	73	185	61	187	63	2702	61
WASHINGTON																										
Seattle (U)	91	33	124	43	174	44	181	47	323	69	219	46	310	64	294	67	218	58	99	29	56	20	34	13	2123	48
Spokane	103	37	111	39	213	58	232	57	371	79	297	62	366	76	371	84	288	77	184	55	56	20	67	25	2659	59
Tatoosh Is. (R)	105	38	85	29	203	55	204	50	296	63	185	38	155	32	153	35	216	57	124	37	68	25	50	19	1844	41
Walla Walla (U)	93	32	63	22	183	49	144	36	324	70	307	65	---	--	---	--	---	--	---	--	--	--	--	--	----	--
WEST VIRGINIA																										
Parkersburg (U)	130	49	142	47	156	42	235	59	279	63	274	61	301	66	303	48	246	66	287	83	87	29	98	33	2558	55
WISCONSIN																										
Green Bay	104	36	127	43	191	52	245	61	225	49	320	69	360	77	295	68	214	57	197	58	97	33	166	60	2541	55
Madison	130	45	153	52	175	47	215	53	231	31	303	66	340	73	268	62	195	49	178	52	108	37	149	53	2445	52
Milwaukee	140	48	156	53	182	49	256	64	301	66	353	77	384	83	306	71	207	55	218	64	144	49	164	58	2811	61
WYOMING																										
Cheyenne	199	67	211	71	285	77	298	79	339	76	344	76	345	75	268	63	292	78	265	77	211	71	224	78	3281	74
Lander	189	65	226	76	320	86	332	82	341	75	329	72	344	74	257	60	242	65	283	83	229	78	171	61	3263	73
Sheridan	149	52	142	48	228	62	211	52	253	55	280	60	357	76	291	67	256	68	234	69	164	57	149	51	2714	61

Data from airport unless otherwise specified.
"U" indicates Urban, "R" indicates Rural, sites.
† Discontinued from October 1963.
1/ Miami Beach, Fla. Data taken from instruments at 3240 N. W. 27th Avenue.
Discontinued from September 1963.
* Discontinued from June 1963.
‡ Airport data after October 10.

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

YEAR [illegible]

State and Station	Temperature							Heating degree days	Precipitation						Relative humidity				Wind					Possible sunshine	Average sky cover sunrise to sunset	Number of days											
	Averages			Extremes								Snow, Sleet									Fastest mile					Sunrise to sunset						Max temp		Min temp	
	Daily maximum	Daily minimum	Annual	Highest	Date	Lowest	Date		Total	Greatest in 24 hours	Date (s)	Total	Greatest in 24 hours	Date (s)	1:00 a.m. E.S.T.	7:00 a.m. E.S.T.	1:00 p.m. E.S.T.	7:00 p.m. E.S.T.	Average speed	Prevailing direction	Speed	Direction	Date			Clear, 0-0.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	90°F and above	32°F and below	32°F and below	0°F and below
ALABAMA	°F	°F	°F	°F		°F		Base 65 °F	In.	In.		In.	In.		%	%	%	%	M.p.h.		M.p.h.			%	Tenths										
BIRMINGHAM	73.0	50.3	61.7	98	JUL 14+	- 2	JAN 24	3086	55.07	3.44	APR 29	8.5	8.4	DEC 31-1	79	83	54	61	7.9	E	47	NE	JUL 24	62	5.6	121	102	142	99	1	49	12	56	3	75	1
HUNTSVILLE	72.1	48.7	60.4	97	AUG 6+	- 4	JAN 24	3473	53.51	5.84	MAR 11-12	24.0	17.1	DEC 31-1	75	81	51	56	8.7	SE	63*	N	JUL 20		5.4	141	91	133	99	4	44	12	64	10	83	2
MOBILE	77.5	56.6	67.1	100	JUN 14	8	JAN 24	1984	52.83	4.57	JUN 19-20	3.0	3.0	DEC 31	80	83	53	64	8.1	SW	51*	NW	MAY 7		5.7				0	0	0	0	0	0	0
MONTGOMERY	75.7	52.7	64.2	100	JUN 15+	5	JAN 24	2586	41.52	2.92	SEP 27-28	1.0	1.0	DEC 31	78	84	53	57	7.6	ENE	37	W	MAR 5	62	5.4	130	99	136	90	1	57	14	90	2	60	0
ALASKA																																				
ANCHOPAGE	43.6	29.4	36.5	75	AUG 13	-22	JAN 9	10276	18.11	1.16	JUL 16-17	94.6	8.6	APR 9-10	80	75	66	76	5.8	N	44*	N	FEB 1	45	7.3	65	76	224	117	27	0	31	8 15	113	197	23
ANNETTE	53.0	42.5	47.8	88	MAY 21	10	NOV 21	6208	115.67	3.40	OCT 30-31	24.2	4.6	NOV 22-23	83	78	71	81	10.0	SSE	51*	ESE	SEP 24		8.2	32	63	270	225	10	3	20	23	7	47	0
BARROW	15.9	4.8	10.4	63	JUL 25	-44	FEB 6+	19871	9.77	.71	MAR 24-25	62.1	7.1	MAR 24-25	78	78	75	77	13.1	ENE	55*	W	OCT 3+			V39	V52	V208	116	18	0	85	0	259	320	169
BARTER ISLAND	18.1	6.1	12.1	66	AUG 15	-44	JAN 8	19219	8.95	.84	JAN 29	52.4	4.4	APR 4	78	78	77	78	12.6	ENE	69*	WSW	MAR 26			X50	X61	X216	119	14	0	61	0	245	308	157
BETHEL	35.8	22.1	29.0	81	JUL 10	-32	JAN 8	13035	20.43	1.31	AUG 28-29	43.2	4.0	MAR 16-17	87	85	76	81	12.7	NNE	44*	S	MAR 25		7.5	60	64	241	142	18	0	61	15	153	220	68
COLD BAY	43.0	34.5	38.8	65	AUG 9	1	NOV 29	9449	29.48	1.86	JAN 22-23	19.3	1.8	APR 25-26	87	86	80	85	16.4	SSE	59*	SSE	DEC 7		9.0	8	42	315	186	3	0	29	0	47	143	0
CORDOVA	47.4	32.2	39.8	78	AUG 31	-10	JAN 9	9106	93.20	3.63	OCT 6-7	89.3	13.1	JAN 2-3	90	84	76	86	6.0	ESE	30*	ESE	DEC 2+		7.9	48	61	256	215	23	0	15	8	35	162	9
FAIRBANKS	36.5	16.7	26.6	84	JUL 11+	-50	JAN 8	13930	13.97	1.18	AUG 9	82.9	12.6	MAR 25	78	74	61	69	5.0	N	27*	SSW	JUN 4+		7.1	64	83	218	114	22	3	17	38	165	222	115
JUNEAU	48.0	35.0	41.5	81	AUG 12	- 1	JAN 9	8450	57.39	1.91	JAN 3-4	130.4	24.2	APR 2-3	85	80	73	82	9.2	ESE	55*	ESE	DEC 3	37	8.4	43	36	286	227	29	1	21	19	40	130	4
KING SALMON	42.2	25.9	34.1	79	JUL 29	-30	JAN 7	11169	21.01	2.00	AUG 22-23	40.0	6.3	MAR 13-14	85	81	68	78	11.6	N	55*	E	DEC 20		7.5	66	52	247	146	16	0	33	17	97	200	43
KOTZEBUE	28.0	15.0	21.5	69	AUG 14	-32	MAR 2+	15778	14.08	1.38	JUL 3-4	56.5	4.3	MAR 24-25	82	81	77	79	13.5	WNW	49*	SW	AUG 22		6.7	102	47	216	114	21	0	17	0	200	242	114
MC GRATH	34.5	16.1	25.3	83	JUL 10	-56	JAN 8	14465	8.95	.84	AUG 23-24	78.5	8.6	MAR 9-10	76	72	59	69	5.7	N	32	SSW	MAR 25		7.3	68	60	237	116	29	6	21	23	170	235	114
NOME	33.4	20.2	26.8	70	MAY 28	-36	JAN 7	13842	11.98	1.23	JAN 15-16	38.8	3.2	MAR 7-8	79	77	73	76	12.7	N	46*	NE	DEC 17	33	6.7	100	58	207	111	13	0	26	1	167	239	76
ST. PAUL ISLAND	38.7	30.8	34.8	54	AUG 5+	2	FEB 28	10903	26.53	1.80	JUL 18-19	46.9	6.4	APR 24-25	90	90	86	89	17.8	NW	56*	W	OCT 28		9.2	7	36	322	196	12	0	106	0	76	190	0
SHEMYA	42.3	36.5	39.4	55	AUG 16+	21	FEB 26	9236	27.98	2.24	AUG 19	29.8	3.2	DEC 29-30	87	88	86	86	18.5	S	68*	SSW	NOV 17		9.1	3	53	309	221	7	0	74	0	15	88	0
YAKUTAT	47.1	35.1	41.1	79	MAY 21	2	JAN 20+	8609	179.44	6.97	OCT 7-8	120.6	11.8	MAR 26	91	84	78	88	7.1	E	63*	SE	DEC 3		8.1	48	39	278	237	32	5	44	7	32	123	0
ARIZONA																																				
FLAGSTAFF	61.9	30.4	46.2	89	JUL 24	-20	JAN 12	6889	14.52	1.79	AUG 31	56.1	7.9	NOV 20-21	70	38	36	61	7.3	SSW	35*	SSW	JAN 18		4.4	173	89	103	66	14	49	8	0	10	206	11
PHOENIX	85.6	56.3	71.0	112	JUL 24	20	JAN 13	1392	7.24	1.42	OCT 18-19	.0	.0		48	30	21	37	6.7	ESE	48*	SE	AUG 25	89	3.1	228	79	58	28	0	28	1	171	0	18	0
PRESCOTT	71.0	41.3	56.2	98	JUL 30	1	JAN 13	4084	9.83	1.12	AUG 25-26	4.0	4.0	MAR 17-18	62	34	29	51	9.0	SW	56	SE	MAR 2	82	3.7	194	102	69	52	2	42	2	45	3	126	0
TUCSON	82.2	54.9	68.6	107	JUL 25	21	JAN 13	1603	9.97	1.15	SEP 3-4	.0	.0		50	29	23	41	9.3	SSE	52	W	NOV 7	85	3.6	194	101	70	41	0	52	0	152	0	16	0
WINSLOW	72.1	39.9	56.0	104	JUL 25	-13	JAN 13	4512	9.80	1.38	AUG 21-22	13.3	4.0	JAN 19	64	38	30	52	8.8	SW	53*	SSW	MAR 15		4.1	180	100	85	50	7	34	6	73	10	131	6
YUMA	89.1	60.3	74.7	114	SEP 8+	28	JAN 14+	774	4.48	2.42	SEP 17	.0	.0		48	29	19	38	7.1	SSE	35	SE	OCT 18+	91	2.8	241	79	45	14	0	7	2	187	0	4	0
ARKANSAS																																				
FORT SMITH	74.4	48.8	61.6	106	AUG 28	1	DEC 23+	3555	27.09	2.78	JUN 19	4.0	4.0	DEC 22	75	83	52	52	7.2	ENE	40	NW	MAY 16	65	5.3	133	102	130	74	1	35	12	102	10	88	0
LITTLE ROCK	74.2	49.3	61.8	107	AUG 28	- 1	DEC 24	3406	28.26	2.51	NOV 21-22	10.9	9.8	DEC 22	78	84	52	56	7.6	WSW	50	SE	MAY 28	67	5.2	137	100	128	87	1	53	12	97	11	84	1
TEXARKANA	75.5	53.5	64.5	102	AUG 26	6	JAN 24	2733	37.91	3.28	JUN 19-20	6.0	5.0	DEC 22	77	84	57	58	8.5	NE									74	1	38	14	95	11	57	0
CALIFORNIA																																				
BAKERSFIELD	74.6	52.1	63.4	107	SEP 26	20	JAN 13	2377	6.88	1.08	FEB 13	.0	.0		72	57	41	60	6.3	NW	32*	SE	MAR 16		4.3	183	79	103	41	0	2	38	81	0	28	0
BISHOP	74.3	37.5	55.9	103	AUG 15	2	JAN 13	4105	6.83	1.91	JAN 30-31	1.6	1.1	MAR 14		28	19								3.7	200	82	83	42	1	16	0	88	0	138	0

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Temperature							Heating degree days	Precipitation						Relative humidity				Wind					Possible sunshine	Average sky cover sunrise to sunset	Number of days									
	Averages			Extremes								Snow, Sleet								Fastest mile						Sunrise to sunset			Precipitation .01 inch or more	Snow, Sleet 1.0 inch or more	Thunderstorms	Heavy fog	Max temp		Min temp	
	Daily maximum	Daily minimum	Annual	Highest	Date	Lowest	Date		Total	Greatest in 24 hours	Date (s)	Total	Greatest in 24 hours	Date (s)	1:00 a.m. EST	7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Average speed	Prevailing direction	Speed	Direction	Date			Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10					90°F and above	32°F and below	32°F and below	0°F and below
CALIFORNIA	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M.p.h		M.p.h			%	Tenths									
BLUE CANYON	57.4	42.1	49.8	85	SEP 26	15	JAN 12+	5688	75.03	9.10	JAN 1	194.8	24.3	MAR 27-28		51									5.1	158	54	153	95	33	13	69	0	14	82	0
BURBANK	74.2	52.1	63.2	106	SEP 28	30	JAN 14	1591	13.14	3.53	FEB 9-10	.1	.1	MAR 17	74	53	44	67	6.1	S	29*	SSE	FEB 9		4.1	189	82	94	43	0	6	11	22	0	1	0
EUREKA U	58.8	48.1	53.5	77	DEC 30	30	JAN 12	4116	41.85	2.56	APR 11-12	.0	.0						7.0	SE#	45	S	DEC 24	52	7.2	55	97	213	128	0	3	37	0	0	2	0
FRESNO	74.0	49.2	61.6	107	SEP 26	19	JAN 13	2791	14.27	1.18	JAN 30-31	.0	.0		80	62	43	67	6.5	NW	34	NW	MAR 31	76	4.5	180	66	119	50	0	8	63	89	0	28	0
LONG BEACH	74.0	53.4	63.7	110	SEP 26	25	JAN 13	1389	13.61	3.59	FEB 9-10	.0	.0		80	60	54	76	6.0	WNW	44*	WNW	APR 1		4.6	165	109	91	34	0	8	35	14	0	1	0
LOS ANGELES	71.2	55.5	63.4	110	SEP 26	30	JAN 13	1305	13.51	3.67	FEB 9-10	.0	.0		75	59	63	74	7.8	W	32*	W	APR 1		4.5	158	107	100	35	0	4	28	7	0	1	0
LOS ANGELES U	73.8	56.4	65.1	109	SEP 26	34	JAN 13	1060	12.31	2.49	FEB 9-10	.0	.0		71	51	50	68	6.0	W#	34	NW	NOV 21	74	4.1	182	107	76	41	0	9	4	15	0	0	0
MOUNT SHASTA R	61.5	37.6	49.6	93	AUG 7+	5	JAN 12	5735	37.65	2.72	APR 13-14	83.2	14.3	MAR 15-16		63	52								5.1	147	83	135	98	19	14	2	10	3	130	0
OAKLAND	64.3	50.0	57.2	94	JUL 26	30	JAN 14	2907	19.11	1.53	MAR 27-28	.0	.0		83	71	62	79	8.9	WNW	40*	SW	NOV 5		5.1	137	118	110	61	0	3	16	1	0	8	0
POINT ARGUELLO R	64.4	46.7	55.6	83	NOV 10	25	JAN 14	3369	15.12	2.28	FEB 9-10	.0	.0						7.1		32*	SE	JAN 30		5.8	112	100	153	74	0	2	116	0	0	14	0
RED BLUFF	72.7	49.6	61.2	105	SEP 4+	24	JAN 14	2967	22.46	2.06	JAN 29-30	T	T	MAR 16+	71	55	41	62	9.0	SSE	56	SE	JAN 31	73	5.0	154	73	138	75	0	9	33	78	0	27	0
SACRAMENTO	71.2	47.7	59.5	104	SEP 26+	23	JAN 13	3060	21.64	2.47	JAN 30-31	.0	.0		80	71	55	81	5.5	SW	38	W	MAR 22	72	5.1	155	74	136	63	0	7	60	66	0	26	0
SACRAMENTO U	70.9	49.3	60.1	103	SEP 26	27	JAN 13	2780	18.97	1.92	JAN 30-31	.0	.0																64	0	0	0	59	0	18	0
SANDBERG R	62.8	45.6	54.2	94	AUG 14	11	JAN 12	4560	12.85	1.83	FEB 9-10	19.9	7.9	MAR 16		46			13.0	S	62	NNW	NOV 21		3.6	211	69	85	43	5	6	80	4	3	51	0
SAN DIEGO	71.5	55.7	63.6	111	SEP 26	31	JAN 13	1207	7.72	1.49	NOV 20-21	.0	.0		78	59	61	76	6.9	WNW	32	SE	MAR 16	70	4.6	152	120	93	41	0	1	18	5	0	1	0
SAN FRANCISCO	64.4	48.4	56.4	94	JUL 26	29	JAN 13	3173	19.89	2.11	JAN 30-31	.0	.0		86	73	64	83	10.0	W	60	SSE	JAN 30		4.9	148	105	112	62	0	3	12	2	0	7	0
SAN FRANCISCO U	62.6	51.5	57.1	88	SEP 26+	37	DEC 16	2894	18.78	1.95	JAN 29-30	.0	.0			F79	K68		7.8	W				68					64	0	2	0	0	0	0	0
SANTA CATALINA	68.2	54.7	61.5	101	SEP 26	36	JAN 13	2047	11.31	1.92	FEB 8-9	.0	.0													152	72	82	44	0	3	147	12	0	0	0
SANTA MARIA	68.1	45.9	57.0	92	SEP 27	23	JAN 13	2908	14.27	1.80	FEB 9-10	.0	.0		88	61	62	86	7.3	WNW	32*	WNW	MAR 31		4.3	180	93	92	54	0	2	58	1	0	25	0
COLORADO																																				
ALAMOSA	60.6	23.9	42.3	89	JUL 25+	-41	JAN 13	8270	6.55	1.15	FEB 9-10	28.9	11.5	FEB 9-10	75	42	38								4.3	163	130	72	67	8	47	20	0	28	213	63
COLORADO SPRINGS	65.3	37.6	51.5	99	JUL 22	-21	JAN 12	5584	13.24	1.56	AUG 12-13	32.4	6.5	DEC 21	58	33	36	55	9.9	NNE	53*	WNW	MAR 16		5.0	134	126	105	80	11	66	12	31	23	140	15
DENVER	65.9	35.6	50.8	99	JUL 25	-25	JAN 12+	5767	12.23	2.17	JUN 15-16	39.9	9.1	MAR 2-3	66	38	38	59	9.6	S	47	SW	APR 15	75	5.0	125	147	93	75	13	36	12	37	27	152	19
GRAND JUNCTION	65.8	40.3	53.1	100	JUL 25+	-23	JAN 13	5461	7.32	.73	JUL 9	29.4	6.6	JAN 18-19	55	38	32	46	5.8	SE	44	N	JUL 12	68	5.0	144	109	112	59	7	32	11	47	31	127	16
PUEBLO	70.0	38.1	54.1	103	JUL 22+	-26	JAN 12	5187	6.51	.86	AUG 9-10	18.8	3.5	DEC 21	65	36	32	55	9.4	SSE	64	SW	APR 15	79	4.3	168	115	82	60	7	41	2	71	21	136	20
CONNECTICUT																																				
BRIDGEPORT	58.4	42.0	50.2	97	JUL 2	- 5	FEB 8	5838	30.78	2.61	JUL 21	38.8	7.2	JAN 26-27	78	78	59	69	13.2	WSW	56*	WSW	MAY 30		5.7	112	105	148	97	11	18	32	10	41	110	1
HARTFORD	59.7	37.4	48.6	95	JUL 25+	-10	JAN 29	6475	36.92	2.46	SEP 29	52.1	10.5	FEB 19-20	80	80	54	64	7.8	S	41	NW	APR 4	65	6.3	87	117	161	116	16	22	29	18	48	143	12
NEW HAVEN	58.4	40.8	49.6	95	JUL 1	- 4	FEB 8	5997	38.20	4.68	NOV 6-7	42.4	5.7	DEC 23-24		78	57		8.1		47	NW	APR 4	66	5.7	110	113	142	106	12	28	21	5	37	117	2
DELAWARE																																				
WILMINGTON	62.6	42.4	52.5	97	JUL 27+	1	JAN 29	5311	32.10	2.96	NOV 6-7	18.1	6.4	DEC 23	76	77	52	64	8.4	WNW	48*	W	JUL 29		5.6	118	107	140	96	5	27	36	17	30	110	0
DIST OF COLUMBIA																																				
WASH NATL AP	65.5	45.9	55.7	96	JUL 27+	3	JAN 24	4508	39.34	6.23	AUG 19-20	11.6	5.6	DEC 23	68	70	48	55	8.5	S	52	NW	APR 23	62	5.3	133	102	130	92	4	21	11	28	17	89	0
FLORIDA																																				
APALACHICOLA U	74.7	60.5	67.6	92	SEP 5+	19	JAN 24	1619	53.41	5.38	JUL 23-24	.0	.0						7.2		35	N	FEB 3		5.3	123	122	120	97	0	12	34	19	0	11	0
DAYTONA BEACH	78.8	60.9	69.8	98	JUN 14	32	DEC 25	1068	53.03	4.62	NOV 25-26	.0	.0		85	85	61	74	9.2	SW	40*	WSW	JUL 9		6.1	92	120	153	122	0	16	26	54	0	3	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Average	Extremes: Highest	Date	Lowest	Date	Heating degree days: Base 65 °F	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 a.m. E.S.T.	7:00 a.m. E.S.T.	1:00 p.m. E.S.T.	7:00 p.m. E.S.T.	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	Max temp: 90 °F and above	32 °F and below	Min temp: 32 °F and below	0 °F and below
FLORIDA	°F	°F	°F	°F		°F			In	In		In	In		%	%	%	%	M.p.h.		M.p.h.			%	Tenths										
FORT MYERS	83.8	63.5	73.7	95	SEP 16+	39	DEC 25+	448	42.90	3.21	NOV 9-10	.0	.0		86	86	57	73	8.4		35*	SSW	SEP 29+		5.2	115	159	91	103	0	89	32	124	0	0	0
JACKSONVILLE	78.1	58.2	68.2	97	AUG 8+	24	JAN 24	1543	54.68	3.46	FEB 3-4	.0	.0		86	88	56	71	8.9	NE	62	N	DEC 31	69	6.0	89	125	151	116	0	63	30	82	0	20	0
KEY WEST	82.2	72.3	77.3	94	JUL 9	55	DEC 19	49	47.24	6.65	SEP 19-20	.0	.0		77	78	65	72	11.7	ESE	36	NE	OCT 6	73	5.3	109	160	96	103	0	65	1	69	0	0	0
LAKELAND U	80.5	62.3	71.4	95	AUG 25+	34	DEC 25+	836	46.26	3.97	NOV 9-10	.0	.0						7.6					61	5.6	92	154	119	124	0	96	23	94	0	0	0
MIAMI BEACH	81.4	70.9	76.2	97	JUL 8	44	DEC 25	110	40.08	3.97	MAY 3-4	.0	.0						13.6	N				63	5.2	100	171	94	94	0	0	0	28	0	0	0
MIAMI	82.1	67.4	74.8	95	JUL 7	43	DEC 25	210	46.08	4.14	SEP 19-20	.0	.0		84	87	62	73	9.7	ESE	35*	WNW	JUL 8		5.9	76	161	128	116	0	83	15	49	0	0	0
ORLANDO	82.1	61.7	71.9	98	AUG 10+	33	DEC 25	823	45.28	3.92	SEP 22-23	.0	.0		85	89	54	68	9.5	ENE	46*	WSW	FEB 19		5.7	93	148	124	115	0	75	21	124	0	0	0
PENSACOLA	75.0	58.6	66.8	96	AUG 26	10	JAN 24	1945	55.10	4.22	JUL 25-26	T	T	DEC 31+					8.5	N	43	NW	NOV 29	63				109	0	61	0	42	1	30	0
TALLAHASSEE	77.6	54.9	66.3	97	AUG 7	17	JAN 25+	2011	62.07	4.08	SEP 28-29	.0	.0		86	89	55	67	9.3	N	46*	SW	JAN 20		5.9	90	138	137	114	0	91	51	81	0	41	0
TAMPA	80.6	61.3	71.0	96	SEP 1+	31	DEC 19	886	43.42	4.22	OCT 9-10	.0	.0		86	88	57	72	11.8	E	58*	NW	JUL 10	69	5.7	100	140	125	111	0	87	24	74	0	1	0
WEST PALM BEACH	82.9	65.8	74.4	98	AUG 14+	39	DEC 25	310	53.31	6.64	OCT 1-2	.0	.0		83	86	59	72	9.5	ESE	44*	W	JUL 23		6.0	71	169	125	114	0	80	13	92	0	0	0
GEORGIA																																				
ATHENS	71.7	49.0	60.4	96	JUN 10	4	JAN 24	3220	63.08	5.41	JUN 26-27	2.0	2.0	DEC 31	78	85	53	63	7.7	WNW	31*	SW	MAR 5		5.2	146	94	125	100	1	56	21	45	1	80	0
ATLANTA	69.6	49.5	59.6	94	JUN 14	- 3	JAN 24	3374	55.31	3.15	APR 29-30	2.5	2.2	DEC 31	76	81	55	60	7.4	WNW	38*	E	DEC 31	70	5.2	142	94	129	99	1	41	31	17	3	73	1
AUGUSTA	74.7	49.9	62.3	100	JUN 10	14	JAN 25+	2794	42.06	2.71	SEP 28-29	T	T	DEC 31+	83	87	51	64	7.0	NW	37*	W	NOV 29		5.7	117	108	140	101	0	48	12	75	0	76	0
COLUMBUS	75.1	51.3	63.2	101	JUN 14	3	JAN 24	2674	39.14	2.42	JAN 19-20	T	T	DEC 31+		84	50	59	7.9		35*	NW	NOV 29+		5.5	134	89	142	88	0	45	23	73	2	73	0
MACON	75.7	52.2	64.0	102	JUN 14	6	JAN 24	2520	46.75	3.08	JAN 19-20	.5	.5	DEC 31	77	84	48	55	7.6	NW	38	NW	JUL 6	66	5.3	131	101	133	94	0	42	23	89	0	63	0
ROME	71.5	45.2	58.4	97	JUN 10	- 5	JAN 24	3730	61.88	6.35	SEP 28	7.4	8.2	DEC 31-1		84	49								5.1	141	104	120	111	1	57	34	44	3	102	1
SAVANNAH	75.6	53.9	64.8	98	AUG 7+	19	JAN 25	2212	50.83	4.06	JUN 26-27	.0	.0		83	86	53	69	9.7	NE	40	N	APR 12+	68	5.8	111	102	152	98	0	66	30	75	0	44	0
THOMASVILLE U	76.5	56.3	66.4	98	AUG 26	13	JAN 24	1900	51.11	3.63	SEP 29	.0	.0																108	0	65	15	82	0	27	0
HAWAII																																				
HILO	81.8	65.9	73.9	89	AUG 20+	57	JAN 15	0	124.75	8.94	APR 14-15	.0	.0		86	80	65	83	8.8	SW	46	ENE	FEB 1	38	7.0	48	135	182	261	0	8	0	0	0	0	0
HONOLULU	83.6	69.8	76.7	91	SEP 24+	56	JAN 14	0	37.91	6.72	JAN 6-7	.0	.0		75	73	63	70	10.1	ENE	54	E	JAN 7	64	5.6	105	143	117	100	0	14	0	11	0	0	0
HONOLULU U	80.3	70.7	75.5	86	AUG 20	61	JAN 8	0	45.51	7.18	JAN 6-7	.0	.0																133	0	0	0	0	0	0	0
KAHULUI	83.6	67.2	75.4	91	OCT 2+	54	JAN 1	0	20.09	2.61	JAN 7	.0	.0		81	78	63	77	17.0	ENE	52*	SSW	JAN 16	73	5.1	127	149	89	94	0	9	0	4	0	0	0
LIHUE	82.5	69.1	75.8	87	OCT 4+	55	FEB 12	0	41.20	4.39	JAN 6-7	.0	.0		80	78	65	77	11.6	NE	42	E	APR 15		6.3	61	157	147	184	0	17	0	0	0	0	0
IDAHO																																				
BOISE	63.8	41.2	52.5	104	AUG 13	- 7	JAN 12	5354	13.25	.87	JAN 30-31	18.7	4.8	JAN 30	68	53	42	58	7.7	SE	56	SE	AUG 9	63	6.0	111	84	170	103	6	19	25	51	28	110	3
IDAHO FALLS 42NW R	58.0	27.3	42.7	97	AUG 14+	-43	JAN 12	8236	15.60	1.78	MAY 23	.0							6.5										77	0	0	0	27	54	194	40
IDAHO FALLS 46W R	57.5	29.0	43.3	94	AUG 14	-35	JAN 12	8051	14.40	1.45	APR 26-27	38.8	5.2	DEC 8-9					6.5	SW	35A	SW	MAY 1+						82	15	11	17	13	52	188	33
LEWISTON	63.3	41.9	52.6	99	AUG 11+	-11	JAN 11	5192	10.23	.82	JUN 4-5	16.6	4.8	JAN 30-31	74	59	47								6.8	87	70	208	107	7	14	30	40	23	92	3
POCATELLO	60.3	35.0	47.7	96	AUG 14+	-22	JAN 12	6663	16.15	1.14	APR 26-27	43.4	5.0	DEC 20-21	74	55	45	63	8.6	WSW	57	SW	APR 14+	62	6.2	103	94	168	110	16	34	18	26	34	153	15
ILLINOIS																																				
CAIRO U	68.3	49.3	58.8	100	JUN 9	- 5	JAN 24	4124	29.81	2.22	AUG 12-13	11.9	6.0	DEC 22-23		78	54		8.1	S	41	SW	APR 29	70	5.3	129	112	124	84	4	40	10	50	29	79	2
CHICAGO MIDWAY	59.5	40.6	50.1	99	JUL 1	-18	JAN 23	6420	28.02	2.57	APR 29-30	45.6	8.8	JAN 19	71	76	55	59	10.4	SW	49	N	JUN 8	55	5.9	88	135	142	96	13	36	12	21	67	117	33
MOLINE	59.8	38.0	48.9	99	JUL 1	-26	JAN 28	6782	30.78	5.41	JUL 18-19	37.5	4.1	DEC 11	78	81	58	61	9.5	SSW	59	NW	JUL 19	60	5.9	108	111	146	97	12	35	17	28	68	127	42

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 a.m. EST	7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, [illegible]	Partly cloudy, [illegible]	[illegible]	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	Max temp: 90°F and above	32°F and below	Min temp: 32°F and below	0°F and below
ILLINOIS	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M.p.h		M.p.h			%	Tenths										
PEORIA	59.9	38.4	49.2	97	JUL 1	-20	JAN 28	6576	25.66	2.64	APR 29-30	19.7	3.1	FEB 23-24	75	81	58	60	9.3	S	41	NW	JUL 19	62	5.8	108	111	146	81	6	39	22	24	66	129	38
ROCKFORD	58.0	36.8	47.4	98	JUL 1	-22	JAN 23	7099	30.71	3.05	JUL 18-19	40.5	4.7	DEC 11-12+	77	81	57	61	9.4	SSW	46*	NNW	JUN 7		5.9	106	109	150	103	16	45	28	14	70	137	45
SPRINGFIELD	62.8	40.4	51.6	99	JUN 9+	-22	FEB 26	5891	28.89	2.68	JUL 5-6	22.5	7.7	FEB 23	73	77	57	60			49	NW	JUN 17+			121	114	130	90	5	41	21	26	57	120	30
INDIANA																																			
EVANSVILLE	67.2	41.4	54.3	99	AUG 3	-18	JAN 28	5028	27.88	2.29	MAR 16	12.2	7.0	DEC 22-23	78	79	53	58	6.7	NW	49	NW	AUG 28+	67	5.5	120	111	134	90	4	43	19	54	35	113	13
FORT WAYNE	59.7	37.8	48.8	96	JUL 2	-18	FEB 27+	6530	26.57	2.65	APR 17-18	31.5	5.8	FEB 23-24	77	80	58	62	9.2	WSW	47	NE	APR 17	59	6.0	96	123	146	114	10	40	22	11	65	136	32
INDIANAPOLIS	61.0	39.	50.0	94	AUG 3	-18	JAN 28	6107	32.78	3.80	JUN 7	30.0	5.5	MAR 1	78	83	59	63	8.2	WSW	40*	N	AUG 9+	65	5.9	95	136	134	99	13	37	31	14	56	129	31
SOUTH BEND	58.0	37.8	47.9	94	JUN 30	-17	JAN 23	6804	25.15	1.88	JUL 13-14	81.2	5.0	DEC 19-20+	76	79	58	63	9.9	SW	40*	NNW	JUL 19		6.3	78	122	165	131	28	42	31	8	76	130	29
IOWA																																			
BURLINGTON	61.2	40.1	50.7	99	AUG 2	-18	JAN 23	6257	25.85	2.19	JUL 12-13	33.9	4.4	JAN 19	75	81	58	60	1[illegible].2	SSW	48	NW	MAR 20	66	5.8	111	102	152	105	11	38	18	17	61	121	36
DES MOINES	58.6	39.4	49.0	97	AUG 2+	-22	JAN 23	6779	28.32	2.97	AUG 5-6	36.2	5.3	JAN 11-12	78	83	63	63	9.6	SSE	60	NE	JUN 28	56	6.0	111	100	154	101	15	46	17	15	68	131	41
DUBUQUE	56.3	36.1	46.2	98	JUL 1	-24	JAN 23	7438	35.44	3.83	JUL 18-19	35.3	5.9	JAN 11-12		79	57	61							6.2	97	96	172	98	14	43	25	9	75	141	48
SIOUX CITY	60.5	38.8	49.7	95	JUN 8	-18	JAN 27	6629	23.04	3.14	JUN 1-2	29.4	7.3	JAN 10-11	76	82	61	60	9.8	SSE	51	NW	DEC 8	59	6.1	102	101	162	105	12	46	10	27	62	142	39
WATERLOO	57.7	35.7	46.7	98	JUN 7	-28	JAN 15	7410	32.64	4.33	JUL 18-19	30.4	8.0	MAR 5	79	84	63	64	9.9	NW	54*	NE	JUL 19		6.1	98	104	163	104	8	46	28	20	71	145	49
KANSAS																																			
CONCORDIA	66.5	42.8	54.7	103	AUG 5+	-13	JAN 27	5326	23.25	2.15	AUG 17-18	14.0	3.8	JAN 18-19	73	81	55	54	12.4	SSE	63	SW	MAR 16	66	5.0	146	100	119	91	5	32	17	66	40	121	19
DODGE CITY	70.4	43.6	57.0	103	JUL 23	-12	JAN 12	4700	12.97	1.19	MAY 28-29	7.7	5.3	DEC 21	66	74	45	43	12.7	SSE	57	S	APR 2	74	4.7	157	94	114	67	1	64	13	85	28	122	14
GOODLAND	67.8	37.9	52.9	107	JUN 29	-19	JAN 12	5666	16.24	2.47	SEP 7-8	41.0	10.8	MAR 12	77	47	44	66	13.4	S	52*	NNW	DEC 7+		4.5	169	104	92	65	15	50	22	73	32	155	22
TOPEKA	67.3	43.8	55.6	104	AUG 27	- 9	JAN 23	5123	19.07	2.81	JUL 12-13	11.5	3.0	JAN 10-11	74	81	55	53	12.[illegible]	S	72	N	MAY 15	64	5.7	119	101	145	76	5	35	13	63	38	120	20
WICHITA	69.0	46.7	57.9	104	AUG 6+	- 7	JAN 12	4574	28.10	4.70	MAY 25-26	8.6	4.2	DEC 21-22	70	78	55	53	11.6	S	54	NW	DEC 8		5.2	133	103	129	73	3	68	12	75	33	111	10
KENTUCKY																																			
LEXINGTON	64.1	43.4	53.8	91	JUN 10	-21	JAN 24	4985	33.10	2.13	JUL 19-20	24.2	5.4	DEC 22-23	75	80	55	60	8.1	SSW	46*	NW	APR 22+		5.5	112	128	125	105	9	46	25	3	35	107	8
LOUISVILLE	65.8	43.3	54.6	95	AUG 3	-20	JAN 24	4814	38.44	2.72	MAR 16	16.8	4.6	JAN 23	76	81	56	59	7.1	S	43	N	JUN 10	59	5.8	104	119	142	106	4	46	16	13	32	109	9
LOUISIANA																																			
ALEXANDRIA	77.3	51.8	64.6	100	AUG 27	11	JAN 24	2556	33.05	3.10	MAY 19	.4	.4	DEC 22	88	91	54	63	5.8	SSW	33	N	AUG 30		5.5	119	120	126	91	0	69	31	106	5	73	0
BATON ROUGE	79.2	56.2	67.7	100	JUN 15+	12	JAN 24	1907	41.91	2.52	JUL 22-23	T	T	DEC 23+	82	87	54	60	7.5	S	29	WNW	Aug 5+		5.6	113	119	133	87	0	67	40	127	2	37	0
LAKE CHARLES	77.2	57.8	67.5	96	AUG 13	17	JAN 24	1885	39.55	3.94	SEP 16-17	T	T	DEC 23+	86	89	58	68	8.8	S	32*	N	FEB 3+		5.7	98	136	131	71	0	74	51	79	2	29	0
NEW ORLEANS AUDUBON	77.8	61.0	69.4	95	AUG 26+	17	JAN 24	1562	54.72	4.03	NOV 9	+4.5	+4.5	DEC 31	82	85	63	68	4.3	S	26*	NE	FEB 11		+5.5	+1.4	+1.5	+1.5	99	+1	+7	+1	79	2	19	0
SHREVEPORT	77.5	54.4	66.0	103	AUG 27+	9	DEC 23+	2518	30.03	4.01	NOV 21-22	4.2	3.0	DEC 22	74	85	53	54	9.7	S	37	WSW	AUG 13+		5.2	139	105	121	83	2	53	20	119	8	54	0
MAINE																																			
CARIBOU	48.0	27.7	37.9	93	JUL 26+	-25	FEB 4+	9944	39.35	1.69	NOV 7-8	130.6	12.2	NOV 12-13		83	63	74							6.9	56	117	187	152	28	18	37	6	101	194	58
PORTLAND	55.2	32.8	44.0	94	JUL 28+	-21	DEC 31	7790	38.59	2.75	NOV 7-8	82.4	10.5	FEB 19-20	82	79	57	71	8.9	S	49	W	APR 2	58	6.1	101	106	158	121	21	18	49	8	61	167	27
MARYLAND																																			
BALTIMORE	64.2	42.3	53.3	98	JUN 27	- 7	JAN 29	5163	39.55	3.35	JUN 29-30	17.3	8.0	DEC 23	74	76	51	61	8.9	W	56	NW	JUL 23	67	5.0	152	96	117	97	4	19	24	13	29	111	1
BALTIMORE II	65.3	48.2	56.6	98	JUL 27+	4	JAN 24	4425	34.10	2.79	NOV 6-7																	89	0	0	0	36	21	76	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 am EST	7:00 am EST	1:00 pm EST	7:00 pm EST	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10	Precipitation .01 inch or more	Snow, Sleet .1.0 inch or more	Thunderstorms	Heavy fog	Max temp: 90°F and above	32°F and below	Min temp: 32°F and below	0°F and below
MASSACHUSETTS	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M.p.h		M.p.h			%	Tenths											
BLUE HILL OBS P	57.3	38.8	48.1	97	JUL 26	-7	FEB 8	6578	41.61	3.37	NOV 29-30	59.3	8.2	MAR 20-21	80	79	56	68	14.3	SSW	67	S	NOV 30	59					126	17	0	0	12	50	132	5
BOSTON	59.2	42.8	51.0	98	JUL 2+	-3	FEB 8	5754	34.84	2.38	NOV 29-30	42.4	8.7	MAR 1-2	70	70	53	61	14.1	WNW	52	NW	APR 5	63	5.8	106	109	150	113	12	19	21	16	42	108	1
NANTUCKET	55.6	42.4	49.0	88	JUN 26	5	FEB 8	5951	49.24	2.82	SEP 15-16	35.7	15.1	DEC 18-19	83	79	67	79	13.4	WSW	65	SW	NOV 30+	58	6.4	100	83	182	133	9	23	93	0	26	104	0
PITTSFIELD	55.2	32.8	46.3	92	JUL 2	-18	FEB 8	7781	31.28	1.80	SEP 29	96.8	11.6	JAN 26-27															133	27	0	0	3	60	171	25
WORCESTER	55.4	37.0	46.2	91	JUL 27+	-10	FEB 8	7139	39.08	2.28	NOV 7-8	66.5	12.0	FEB 19-20	76	75	54	66	9.9	W	35*	NW	APR 4		5.7	111	105	149	121	18	24	73	7	67	144	13
MICHIGAN																																				
ALPENA	53.3	28.9	41.1	96	JUL 1	-28	JAN 15	8830	28.24	2.18	MAY 7-8	77.4	9.1	MAR 5-6		80	57	67	7.0	SW	43	W	APR 3	63	6.3	94	105	166	132	20	31	10	6	90	186	51
DETROIT	58.4	40.2	49.3	94	JUL 18+	-13	JAN 24	6414	20.49	2.03	JUN 9	28.6	4.4	DEC 11-12	72	75	54	59	9.8	SW	60	NW	MAY 4	55	6.1	95	109	161	113	10	26	12	22	65	117	7
DETROIT M WAYNE CO	57.8	35.8	46.8	94	JUL 1+	-13	JAN 24	7033	21.01	1.62	JUN 9	29.2	4.1	DEC 11-12	82	84	59	65	7.6	WSW					6.1	98	114	153	112	10	26	19	16	65	138	20
DETROIT WILLOW RUN	57.9	37.2	47.6	96	JUL 2	-13	JAN 24+	6846	19.15	1.70	MAY 9-10	30.2	4.3	DEC 11-12	81	84	57	62	10.4	SW	46*	SSW	JUN 10+		6.1	94	116	155	101	11	26	22	21	65	129	13
FLINT	56.5	34.7	45.6	97	JUL 1	-14	JAN 15	7404	18.08	1.58	MAY 9-10	37.5	3.8	DEC 11-12	81	83	57	65	9.2	SW	52*	WNW	JUN 10		6.2	89	114	162	104	15	26	19	11	72	141	34
GRAND RAPIDS	57.1	37.0	47.1	96	JUL 1+	-9	FEB 26	6996	30.23	1.94	JUN 8-9	82.6	10.8	JAN 13-14	80	83	58	63	9.7	W	45	SW	APR 3	55	6.3	91	102	172	128	20	34	20	11	71	138	19
LANSING	57.1	35.0	46.1	94	JUL 1	-15	JAN 15	7307	24.36	4.35	JUN 6	33.5	5.5	JAN 19-20	77	78	56	63	10.3	WNW	63	SE	JUN 9	57	6.1	97	109	159	113	13	27	22	9	69	153	31
MARQUETTE U	50.7	34.0	42.4	101	JUN 30	-21	JAN 23	8536	24.16	1.11	JUL 17	81.5	12.1	MAR 19-20		74	62	66	8.3	W*	46	SW	APR 3	58	6.8	75	91	199	140	24	22	13	8	94	151	36
MUSKEGON	55.8	37.5	46.7	93	JUL 1	-12	FEB 26	6994	30.93	2.31	APR 29-30	178.2	20.1	DEC 17-18	80	82	64	68	10.8	SSW	38*	NNW	OCT 2		6.4	92	85	188	138	48	38	26	2	72	130	12
SAULT STE MARIE	49.1	29.8	39.5	93	JUL 1	-24	JAN 23	9380	25.57	1.83	NOV 22-23	103.1	8.4	FEB 1-2	83	85	64	71	9.0	WNW	48*	WNW	NOV 23	55	6.8	78	96	191	144	32	17	66	2	100	172	47
MINNESOTA																																				
DULUTH	49.8	29.6	39.7	92	JUN 30	-31	JAN 23	9352	22.40	1.57	AUG 11-12	55.0	6.9	DEC 8	76	80	61	62	10.8	WNW	48	SW	APR 16	54	6.7	77	109	179	125	17	30	53	3	95	169	57
INTERNATIONAL FALLS	49.3	26.2	37.8	90	JUL 23+	-40	JAN 19	10088	24.85	1.78	JUL 11-12	39.2	5.5	DEC 7-8	79	83	59	61	8.5	S	35*	W	MAR 29		6.4	89	101	175	117	14	35	14	2	104	189	69
MINNEAPOLIS	55.0	33.7	44.4	99	JUN 30	-32	JAN 15	8116	19.57	1.62	MAY 27	33.3	7.0	MAR 18-19	77	81	60	60	9.8	SSE	45	SW	APR 3	59	6.3	99	96	170	110	10	43	12	16	81	158	50
ROCHESTER	53.7	33.8	43.8	95	JUN 30	-30	JAN 15	8195	23.91	1.81	NOV 21-22	41.0	5.5	MAR 3-4	81	84	65	67	12.6	S	38*	SE	JUN 8		6.2	95	97	173	119	16	54	35	4	85	156	49
ST CLOUD	53.9	32.2	43.1	98	JUN 30	-28	JAN 22	8461	26.79	2.56	AUG 11-12	36.9	6.5	DEC 7-8	80	83	60	61							5.8	93	99	173	117	8	33	18	9	85	163	55
MISSISSIPPI																																				
JACKSON	75.8	52.8	64.3	101	JUN 15+	5	JAN 24	2686	35.03	4.14	JUL 8	4.1	1.8	DEC 31	78	86	54	58	7.5	N	37	W	JUN 16		5.3	130	116	119	95	3	49	17	96	6	60	0
MERIDIAN	76.1	49.9	63.0	103	JUN 14	4	JAN 24	2854	37.74	3.37	AUG 20-21	19.6	15.0	DEC 1	86	90	53	60	6.4	S	35*	NNE	FEB 18		5.5	127	116	122	90	4	58	21	102	5	83	0
VICKSBURG U	74.2	55.0	64.6	97	JUN 14+	5	JAN 24	2561	38.90	4.80	AUG 13-14	5.5	2.0	DEC 20+					7.8		40	W	MAY 28	69	5.3	124	126	115	95	3	58	11	67	8	45	0
MISSOURI																																				
COLUMBIA	65.6	44.0	54.8	98	AUG 8+	-10	JAN 23	5177	27.18	1.62	AUG 18-19	11.9	3.9	DEC 11	73	79	54	56	10.6	SSE	46	NW	MAY 15	65	5.4	128	109	128	84	5	46	15	50	47	105	21
KANSAS CITY	67.5	47.3	57.4	101	AUG 5+	-9	JAN 23	4786	24.65	3.70	JUL 12-13	13.8	3.6	JAN 11	64	71	53	50	8.7	S	55	SW	APR 2+	70	5.5	122	108	135	85	3	44	7	67	36	97	11
ST JOSEPH	65.7	43.4	54.6	101	JUL 5	-13	DEC 23	5393	23.48	3.50	MAY 14-15	8.7	1.8	DEC 11					9.7	SSE	46*	WSW	MAR 16+		5.2	136	105	124	65	5	46	16	62	44	119	22
ST LOUIS	65.2	43.3	54.3	102	AUG 3	-11	JAN 23	5235	28.62	2.53	NOV 21-22	12.9	4.7	DEC 10-11	71	78	53	56	10.0	S	45	W	JUN 12	64	5.4	125	114	126	83	4	40	10	44	47	112	13
SPRINGFIELD	69.1	45.3	57.2	100	AUG 28+	-10	JAN 24+	4506	27.79	4.10	JUN 14-15	7.4	3.5	FEB 28	75	81	53	57	10.0	SSE	52	SE	SEP 10	70	5.3	126	115	124	87	2	41	14	51	30	106	6
MONTANA																																				
BILLINGS	59.4	36.3	47.9	98	JUL 22+	-26	JAN 19	6729	14.92	.99	SEP 1	70.7	6.7	DEC 16	69	53	45	59	11.8	WSW	72	W	FEB 1	67	6.0	96	113	156	101	23	36	13	25	41	139	27
GLASGOW	56.1	33.0	44.6	103	JUL 22	-28	JAN 12	7931	14.67	1.79	JUN 5-6	18.3	3.2	APR 8	78	57	51	70							6.4	92	97	176	80	7	33	6	18	63	160	41
GREAT FALLS	59.0	34.9	47.0	100	JUL 22	-26	JAN 11	6917	11.95	.78	JUN 21	48.6	5.6	APR 1	64	46	40	56	12.6	SW	51	SW	DEC 31	59	6.4	92	90	183	94	18	32	11	19	41	141	32

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA
ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Mean	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 a.m. E.S.T.	7:00 a.m. E.S.T.	1:00 p.m. E.S.T.	7:00 p.m. E.S.T.	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-0.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	Max temp: 90°F and above	32°F and below	Min temp: 32°F and below	0°F and below
MONTANA	°F	°F	°F	°F		°F		Base 65 °F	In.	In.		In.	In.		%	%	%	%	M.p.h.		M.p.h.			%	Tenths											
HAVRE	58.4	31.5	45.0	104	JUL 22	-33	JAN 11	7754	0.53	.83	JUL 3-4	27.9	2.7	FEB 1	74	51			9.2	SW	58	SW	FEB 5	63	6.1	116	78	171	81	14	27	5	31	54	165	40
HELENA	57.7	32.0	44.9	98	JUL 21+	-28	JAN 23	7569	1.58	.78	OCT 5-6	43.9	6.7	DEC 11-12	70	52	44	61	8.0	WNW	42	W	APR 15+	58	6.5	88	90	187	107	15	40	7	17	43	164	26
KALISPELL	55.9	30.7	43.3	95	AUG 7+	-26	JAN 30	7980	1.22	1.09	JUN 28-29	60.0	9.5	JAN 31-01		62			5.7						6.7	89	69	207	126	20	29	26	11	50	187	21
MILES CITY	60.1	35.5	47.8	103	AUG 7	-29	JAN 19	7024	1.95	1.60	SEP 10	31.3	3.1	APR 16	75	52	47	65	9.2	SE	46*	W	FEB 1						85	14	41	9	42	53	152	35
MISSOULA	56.2	31.3	43.8	97	AUG 9	-27	JAN 11	7864	1.89	.77	AUG 9-10	77.9	8.0	DEC 16-17	80	64	51	71	6.3	NNW	47	NW	FEB 4	54	6.8	75	82	208	121	23	33	35	21	58	174	19
NEBRASKA																																					
GRAND ISLAND	63.0	37.7	50.4	105	JUL 23+	-28	JAN 27	6346	1.10	2.23	MAY 14-15	15.7	3.5	JAN 10-11	77	85	56	57	11.1		46*	NW	DEC 8		5.6	126	93	146	79	5	59	16	43	53	146	28
LINCOLN U	63.9	43.0	53.5	103	AUG 2	-15	JAN 23	5629	2.52	5.38	JUN 23-24	23.9	7.4	MAR 4-5					10.7	S	56	NW	DEC 8+	63	5.8	101	129	135	90	8	46	7	49	49	121	25
NORFOLK	61.5	38.4	50.0	100	JUN 29	-23	JAN 27	6500	1.92	1.28	AUG 27	17.7	2.9	JAN 10-11		78	53	53							5.8	100	119	146	91	6	56	9	33	54	141	33
NORTH PLATTE	64.3	36.6	50.5	104	AUG 1+	-23	JAN 23	6255	1.34	2.53	SEP 15-16	24.6	7.7	MAR 3	75	84	52	50	11.1	SSE	52	NW	APR 27	69	5.4	128	108	129	92	7	63	20	48	43	161	24
OMAHA	62.8	41.3	52.1	101	JUL 1	-17	JAN 23	5980	2.06	2.08	AUG 27-28	37.3	11.0	MAR 4-5	73	79	56	55	10.4	SSE	49	NW	DEC 8	63	5.7	109	115	141	101	11	41	13	46	55	125	31
SCOTTSBLUFF	64.6	36.2	50.4	101	JUL 25	-32	JAN 19	6165	1.09	1.59	JUN 14-15	29.7	6.1	JAN 17-18	78	48	43	69	11.6	NW	62*	WNW	MAR 16		5.4	112	125	128	81	11	46	11	51	37	154	18
VALENTINE	63.0	35.4	49.2	105	JUN 28	-29	JAN 19	6677	1.85	1.55	AUG 26-27	23.3	8.0	MAR 18	84	53	51	79	10.8	N	65	S	JUN 21	67	5.6	116	117	132	85	6	57	5	43	47	161	27
NEVADA																																					
ELKO	61.8	29.5	45.7	95	AUG 13	-26	JAN 12	7147	1.03	1.16	OCT 11-12	48.9	7.5	JAN 29-30		52	39		6.4	SW	44*	S	MAY 28		5.6	124	88	153	104	15	25	5	30	12	184	17
ELY	61.2	28.8	45.0	91	AUG 14+	-25	JAN 12	7317	1.14	1.59	JUN 9-10	43.5	7.5	MAR 26-27	68	44	37	59	9.1	S	57	SW	MAR 28+	78	5.4	123	103	139	87	14	42	4	10	16	194	12
LAS VEGAS	79.2	52.8	66.0	110	JUL 23	8	JAN 13	2477	3.87	1.07	SEP 4	T	T	MAR 15	42	27	19	32	9.7	SW	46*	S	OCT 4	86	3.6	206	91	68	26	0	16	0	132	2	41	0
RENO	66.5	32.1	49.3	96	AUG 7	- 5	JAN 12	5796	10.93	1.89	JAN 1	15.1	3.1	NOV 20	76	61	35	61	5.7	WNW	49	S	MAR 29	77	5.0	145	96	124	61	6	17	9	35	2	172	2
WINNEMUCCA	65.1	32.1	48.6	98	AUG 6	-24	JAN 12	6185	10.86	1.09	JUN 13-14	18.2	3.8	JAN 29-30	69	46	33	57	7.3	S	66	W	MAR 14	61	5.6	128	80	157	79	6	27	5	45	9	167	13
NEW HAMPSHIRE																																					
CONCORD	58.0	32.9	45.5	99	JUL 26	-20	DEC 31	7449	28.53	2.40	JUL 8	61.4	7.5	FEB 19-20	83	77	49	61	6.9	NW	44	NW	APR 22	59	5.9	105	111	149	118	21	20	35	16	57	173	27
MT. WASHINGTON OBS.	32.5	18.6	25.6	70	JUL 2	-35	FEB 4	14274	85.92	4.48	NOV 7-8	240.2	11.5	DEC 3	88	85	83	86	33.0	W	124Y	W	MAR 7	37	7.3	61	96	209	184	62	19	319	0	168	244	72
NEW JERSEY																																					
ATLANTIC CITY	63.4	43.6	53.5	98	JUL 19	3	JAN 29	4958	36.90	2.87	NOV 6-7	12.3	6.0	DEC 23	77	77	51	66	10.5	WNW	41*	W	MAR 6	60	5.6	131	103	131	102	3	24	47	18	24	97	0
NEWARK	61.9	44.8	53.4	100	JUL 1	- 2	FEB 8	5160	29.52	2.09	NOV 6-7	24.3	7.4	DEC 23-24	68	71	50	58	10.9	SW	50*	NW	MAY 20		5.6	120	110	135	107	8	25	20	20	34	94	1
TRENTON U	61.9	43.8	52.9	98	JUN 27	- 2	FEB 8	5215	30.41	2.37	NOV 6-7	21.4	6.8	DEC 23-24					9.3	NW#	41	NE	NOV 7+	63	5.5	118	112	135	102	6	32	13	17	32	94	1
NEW MEXICO																																					
ALBUQUERQUE	71.0	43.5	57.3	103	JUL 25+	- 7	JAN 20	4239	7.47	1.00	AUG 10	5.8	2.5	MAR 4	58	37	28	46	8.7	N	49	NW	MAY 1	80	3.9	191	105	69	56	2	44	2	64	6	118	3
CLAYTON	69.4	39.6	54.5	99	JUL 23	-17	JAN 12	4767	12.86	4.41	AUG 9-10	7.7	4.7	FEB 9-10	66	35	34								4.1	187	87	91	51	1	53	7	46	18	132	10
RATON	66.9	33.6	50.3	96	JUL 23	-31	JAN 12	5795	10.65	1.80	SEP 20-21	12.1	3.6	JAN 10-11		33									4.6	151	122	92	72	6	77	6	22	18	156	17
ROSWELL	76.9	41.7	59.3	107	JUL 17	-22	JAN 13	3725	6.30	1.50	AUG 30-31	10.3	3.9	JAN 11-12	68	36			9.1		59	NW	JUN 18	81	4.2	182	96	87	54	5	38	5	110	7	123	5
SILVER CITY	72.9	42.1	57.5	99	JUN 30	2	JAN 20	3676	10.06	2.08	AUG 3	6.8	3.8	FEB 11-12		32	29								3.8	194	93	78	58	2	56	1	39	2	111	0
NEW YORK																																					
ALBANY	56.8	35.5	46.2	97	JUL 25+	-16	FEB 23	7226	26.24	1.17	SEP 17	79.4	10.7	JAN 26-27	77	77	53	63	7.7	SSE	45	W	APR 4	56	6.6	74	115	176	123	24	26	30	16	65	150	20
BINGHAMTON	51.2	36.1	44.6	84	JUL 24+	-14	FEB 8	7571	32.45	1.65	JUN 28	96.9	9.4	JAN 26-27	79	83	64	69	6.9	NNW	42	W	NOV 3+	55	7.0	56	107	203	159	23	36	51	0	73	146	17
BINGHAMTON U	58.3	38.7	48.5	93	JUL 25+	-13	JAN 29	6417	29.59	1.82	JUL 7	60.9	5.8	MAR 1															141	19	0	0	10	55	119	11

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Snow, Sleet: Date (s)	Total	Greatest in 24 hours	Date (s)	Relative humidity: 1000 m EST	700 m EST	1000 m EST	700 m EST	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear	Partly cloudy, 0.4–0.7	Cloudy, 0.8–1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	Max temp: 90 °F and above	32 °F and below	Min temp: 32 °F and below	0 °F and below
NEW YORK	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M p h		M p h			%	Tenths										
BUFFALO	55.1	37.0	46.1	94	JUN 30	-11	JAN 24	7150	33.20	3.88	AUG 7	82.2	7.8	JAN 14	76	77	61	69	11.1	SW	56	SW	MAR 6	55	6.9	72	97	196	157	26	25	11	6	68	138	8
NEW YORK CENT PK	61.8	45.3	53.6	98	JUL 27+	- 2	FEB 8	4985	34.28	3.81	NOV 6-7	23.1	6.2	DEC 23-24	66	70	49	57	8.9	W#	40	NE	NOV 7	61	4.9	149	109	107	115	9	23	0	16	30	78	1
NEW YORK LAGUARDIA	60.4	46.2	53.3	97	JUL 1	- 2	FEB 8	5106	31.77	3.68	NOV 6-7	23.9	7.2	DEC 23	66	68	52	58	11.9	NW	59	W	APR 4		5.7	104	135	126	109	8	30	17	12	34	80	1
ROCHESTER	56.5	36.3	46.4	95	JUL 2	-10	JAN 24	7088	24.09	1.77	AUG 13-14	94.4	9.1	JAN 27	80	81	58	67	11.0	WSW	49	W	SEP 12+	58	6.4	91	101	173	130	27	23	9	9	66	137	15
SYRACUSE	56.3	36.5	46.4	96	JUL 2	-13	FEB 8	7111	27.81	1.90	JUN 20	101.3	10.3	FEB 15	77	76	56	65	10.2	W	47	NW	APR 4	58	6.5	84	105	176	160	29	29	7	12	66	140	15
NORTH CAROLINA																																					
ASHEVILLE U	65.9	43.7	54.8	91	AUG 7+	- 7	JAN 24	4341	36.67	3.28	MAR 11-12	14.6	5.9	DEC 1		83	55	62	7.7	NW	39	NW	JAN 23	63	5.1	139	108	118	102	3	32	45	6	11	96	1
CAPE HATTERAS R	67.4	52.3	59.9	89	JUN 7	15	FEB 23	3046	58.17	5.60	APR 6-7	1.3	1.3	FEB 27	82	81	66	78	11.3	NNE				60	6.3	94	105	166	130	1	48	17	0	2	48	0
CHARLOTTE	70.8	48.3	59.6	100	AUG 7	7	FEB 27+	3506	34.71	3.34	SEP 28-29	3.6	2.5	FEB 26	73	82	50	57	7.1	NE	33	SW	MAR 6	68	5.4	136	97	132	93	2	24	18	52	2	87	0
GREENSBORO	67.3	44.8	56.1	95	JUN 10	3	FEB 27	4175	37.19	2.77	SEP 28-29	7.5	3.4	FEB 26	77	80	51	61	7.6	SW	38	NW	MAR 19	62	5.4	125	108	132	104	4	37	25	18	9	98	0
RALEIGH	69.2	45.8	57.5	97	JUL 28	7	JAN 24	3862	36.91	4.70	NOV 5-6	7.0	6.9	FEB 26	79	85	49	61	7.6	SW	40*	WNW	AUG 13+	61	5.5	124	109	132	105	1	31	30	36	6	90	0
WILMINGTON	72.1	51.2	61.7	96	MAY 10+	17	FEB 27+	2811	51.35	4.95	MAY 20-21	1.4	.8	FEB 26-27	84	84	55	72	8.2	SW	43	SW	MAR 6	63	6.0	90	134	141	114	0	50	22	43	1	62	0
WINSTON-SALEM	67.3	46.7	57.0	96	JUN 10	4	JAN 24	3966	40.70	2.65	SEP 28-29	11.2	3.7	FEB 26	69	74	50	57	8.2	NE	35*	WNW	MAR 6		5.4	134	92	139	106	5	37	23	19	9	87	0
NORTH DAKOTA																																					
BISMARCK	56.5	30.8	43.7	101	JUL 25	-31	JAN 27	8235	17.99	1.25	JUN 22-23	27.8	4.1	DEC 7	74	80	53	50	9.5	WNW	56	SW	APR 16	66	6.1	96	107	162	100	9	54	6	20	71	173	50
FARGO	54.3	31.4	42.9	99	JUL 25	-28	DEC 21	8685	14.94	2.10	AUG 11	21.3	6.0	APR 3	74	80	59	58	11.2	SSE	57	NW	APR 3	61	6.4	82	104	179	89	6	38	9	18	88	165	59
WILLISTON	56.3	30.7	43.5	100	JUL 22	-31	JAN 19	8272	17.46	5.03	JUL 9-10	27.3	5.7	APR 8-9		81	56	52	9.9	SW	63	NW	JUL 5	60	6.2	93	112	160	86	9	28	9	24	71	173	49
OHIO																																					
AKRON	58.0	37.4	47.7	94	JUN 27	-21	JAN 24	6698	23.79	1.39	SEP 11-12	65.8	6.2	FEB 23-24	75	79	56	63	8.7	WSW	37*	WSW	APR 19		6.3	92	105	168	126	20	33	28	8	64	132	19
CINCINNATI ORS	64.1	42.9	53.5	99	AUG 3	-14	JAN 24	5160	29.95	3.47	MAR 4-5	19.7	5.0	JAN 23					5.7	S#	34	NW	JUN 10	59					105	6	35	0	21	42	106	10
CLEVELAND	57.0	37.8	47.4	93	JUL 2+	-19	JAN 24	6810	18.63	1.72	SEP 11-12	50.8	5.4	JAN 22-23	76	80	60	65	10.1	S	57	S	AUG 3	59	6.3	91	105	169	135	19	31	12	8	62	129	18
COLUMBUS	61.5	38.6	50.1	97	AUG 3	-15	JAN 28+	6079	24.51	2.68	MAR 4-5	29.7	4.4	JAN 26-27	75	79	55	59	8.4	S	44	W	MAR 20	60	6.2	91	130	144	106	12	34	29	21	51	129	18
DAYTON	61.0	39.3	50.2	92	AUG 3+	-19	JAN 24	5991	24.21	2.62	MAR 4-5	33.4	9.1	MAR 1	76	81	56	61	9.6	SSW	53	W	JUN 10	58	6.0	92	118	155	103	9	34	34	7	53	119	23
MANSFIELD	57.7	37.4	47.6	91	JUL 2+	-20	JAN 24	6772	21.81	1.45	MAR 4	48.8	7.1	MAR 1		80	60								6.3	92	108	165	125	14	35	38	4	65	138	24
TOLEDO	58.2	35.8	47.0	96	JUL 2+	-17	JAN 24+	7016	22.05	2.12	JUN 6-7	35.8	3.5	JAN 22	80	82	58	63	8.8	WSW	42	SW	JUN 10	58	6.1	93	124	148	125	16	35	23	17	68	142	29
YOUNGSTOWN	56.6	36.2	46.4	91	JUN 27	-18	JAN 24	7034	23.79	1.37	NOV 29-30	83.3	5.9	NOV 29-30	77	79	58	65	9.8	SW	44*	WSW	APR 19		6.4	87	97	181	140	29	28	32	5	69	137	21
OKLAHOMA																																					
OKLAHOMA CITY	72.9	49.2	61.1	105	AUG 24	- 3	JAN 12	3745	25.77	2.12	JUL 27-28	4.6	1.4	DEC 21-22	70	78	51	48	12.7	SSE	54	W	JUN 16	71	5.1	145	94	126	70	2	46	20	96	20	88	4
TULSA	73.7	49.5	61.6	104	AUG 28+	- 3	DEC 23	3773	28.80	7.54	JUL 27	6.1	3.0	DEC 22	70	78	51	50	11.5	SSE	45	SE	APR 18	64	5.1	139	105	121	69	3	41	9	111	21	97	5
OREGON																																					
ASTORIA	58.8	44.2	51.5	84	SEP 3	15	JAN 11	4857	63.58	2.40	OCT 21-22	.3	.3	JAN 30	90	80	73	87	8.4	SE	46*	SSW	FEB 4		7.8	48	65	252	193	0	15	38	0	1	40	0
BURNS	60.1	33.4	46.8	95	AUG 8	-11	JAN 12	6756	13.89	.95	JAN 30-31	38.5	5.9	JAN 29-30	75	59	42	66							5.9	115	84	166	103	13	15	17	11	16	167	6
EUGENE	62.7	42.8	52.8	96	SEP 8	11	JAN 12	4599	41.60	2.51	NOV 7-8	3.9	2.8	JAN 29-30		75	61		6.6		48*	S	MAR 27		7.1	77	55	233	133	2	10	70	10	4	48	0
MEACHAM	53.1	35.8	44.5	89	SEP 28	-23	JAN 11	7584	28.26	2.81	NOV 7-8	110.6	19.3	NOV 7-8		59									6.7	87	69	209	156	31	2	15	0	33	157	6
MEDFORD	65.1	39.7	52.4	104	SEP 26	8	JAN 12	5054	18.87	1.52	NOV 7-8	1.8	1.2	JAN 28-29	88	68	52	77	4.9	WNW	32*	SE	MAY 20		6.4	100	75	190	114	1	8	76	41	5	106	0
PENDLETON	62.6	42.1	52.4	98	AUG 12+	-11	JAN 11	5137	11.24	.81	NOV 7-8	15.4	4.1	JAN 28-29	73	58	50	65	8.8	W	46*	W	APR 15		6.1	105	85	175	99	6	8	46	28	26	77	4

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Annual	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Heating degree days	Precipitation: Total	Precipitation: Greatest in 24 hours	Precipitation: Date (s)	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Relative humidity: 1:00 a.m. E.S.T.	Relative humidity: 7:00 a.m. E.S.T.	Relative humidity: 1:00 p.m. E.S.T.	Relative humidity: 7:00 p.m. E.S.T.	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile: Speed	Wind: Fastest mile: Direction	Wind: Fastest mile: Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-3	Number of days: Sunrise to sunset: Partly cloudy, 0.4-0.7	Number of days: Sunrise to sunset: Cloudy, 0.8-1.0	Number of days: Precipitation .01 inch or more	Number of days: Snow, Sleet .1.0 inch or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 90°F and above	Number of days: Max temp: 32°F and below	Number of days: Min temp.: 32°F and below	Number of days: Min temp.: 0°F and below
OREGON	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M.p.h		M.p.h			%	Tenths										
PORTLAND	60.5	43.7	52.1	93	AUG 8	11	JAN 11	4791	33.74	1.38	MAR 28-29	5.0	3.4	JAN 28	86	76	63	80	8.4	ESE	61	S	SEP 9	39	7.5	56	71	238	163	2	9	45	3	5	51	0
PORTLAND U	62.5	47.2	54.9	94	MAY 20	13	JAN 11	3979	43.64	2.20	MAR 28-29	6.7	4.0	JAN 28															155	2	0	0	7	6	21	0
ROSEBURG	64.8	42.4	53.6	99	SEP 8	7	JAN 12	4366	31.81	2.03	NOV 7-8	2.0	1.0	JAN 29		75	57		4.4	N	40	S	MAR 27	50	7.1	65	88	212	145	2	4	76	19	1	51	0
SALEM	61.9	41.4	51.7	96	SEP 8	12	JAN 12+	4936	37.64	2.07	MAR 28-29	6.6	3.7	JAN 28	90	76	63	84	7.1	S	39*	S	MAR 27		7.1	76	64	225	157	2	11	44	9	4	69	0
SEXTON SUMMIT R	55.4	39.7	47.6	87	SEP 26+	12	JAN 11	6434	50.58	3.28	JAN 1	62.7	9.2	APR 14-15		72	62		12.2	S					6.2	113	70	182	139	21	2	134	0	15	92	0
PACIFIC AREA																																					
CANTON ISLAND	89.3	78.3	83.8	93	NOV 17	73	SEP 16+	0	28.05	3.77	DEC 26-27	.0	.0		78	79	65	75	11.2	NE	35*	WNW	DEC 27		5.8	110	137	118	103	0	0	0	174	0	0	0
ENIWETOK	87.3	77.7	82.5	91	OCT 2+	72	DEC 23	0	73.66	2.76	OCT 26-27	.0	.0		81	81	72	75	12.5										212	0	15	0	46	0	0	0
TAGUAC GUAM R	84.8	72.9	78.9	88	DEC 28+	62	MAR 14	0	138.18	6.09	DEC 25	.0	.0						7.2	E#	64	SW	APR 30						284	0	36	2	0	0	0	0
KOROR R	87.3	75.7	81.5	91	NOV 15+	71	JAN 21	0	135.02	4.52	JAN 5-6	.0	.0		93	83	79	90	6.8	W	29	NW	SEP 3		9.9	0	7	358	239	0	46	0	39	0	0	0
KWAJALEIN	86.9	76.9	81.9	91	AUG 21+	69	DEC 19	0	116.63	6.68	DEC 21-22	.0	.0		84	83	76	80	12.3	ENE	39	SE	DEC 21		7.6	40	102	224	234	0	17	0	14	0	0	0
MAJURO	85.9	77.3	81.6	89	OCT 9+	70	MAR 12	0	131.52	3.92	JAN 2-3	.0	.0		82	83	76	79	9.8	E	35	E	DEC 19+	54	8.2	16	96	253	251	0	20	0	0	0	0	0
PONAPE R	87.0	73.9	80.5	91	SEP 25+	69	APR 6+	0	174.97	4.50	JAN 14-15	.0	.0		92	79	79	90	4.8	NE	25	E	FEB 2		9.1	1	47	317	297	0	35	0	34	0	0	0
TRUK MOEN ISLAND	86.3	75.4	80.9	90	SEP 6+	70	FEB 24	0	130.06	4.91	AUG 24-25	.0	.0		86	77	77	85	6.3	NNE	31	SW	AUG 29		9.1	1	47	317	245	0	28	0	3	0	0	0
WAKE	85.3	75.5	80.4	90	AUG 28+	68	JAN 12	0	30.10	2.53	NOV 6-7	.0	.0		78	78	69	72	11.9	ENE	33*	ENE	MAR 8		5.8	91	169	105	130	0	3	0	4	0	0	0
YAP R	86.6	75.5	81.1	91	SEP 17+	72	DEC 28+	0	140.95	5.38	AUG 30-31	.0	.0		91	82	80	89	7.8	NE	34	NE	JAN 29	55	9.7	0	15	350	250	0	29	0	17	0	0	0
PENNSYLVANIA																																					
ALLENTOWN	60.5	39.0	49.8	97	JUL 1	- 9	JAN 29	6083	35.04	3.08	SEP 12-13	40.5	7.4	JAN 26-27	77	79	53	62	9.6	WNW	60*	WNW	APR 4		5.6	118	109	138	104	10	27	26	15	44	124	6
ERIE	55.9	39.0	47.5	94	JUL 2	-15	JAN 24	6754	28.11	1.43	NOV 11-12	104.6	7.9	DEC 14-15	75	75	62	68	13.3	S	43*	SSE	FEB 2		6.4	99	86	180	151	32	30	13	3	62	125	12
HARRISBURG	62.3	41.1	51.7	99	JUN 27	- 4	JAN 29	5588	30.09	2.28	NOV 6-7	45.2	10.1	DEC 23	71	74	51	52	8.7	WNW	48	W	JUN 10	63	5.9	113	105	147	110	10	26	19	23	35	115	3
PHILADELPHIA	62.2	41.6	51.9	97	JUL 1+	- 5	JAN 29	5486	34.95	3.18	SEP 3-4	19.0	5.2	DEC 23	76	75	53	63	9.2	WSW	42	NW	MAR 6+	61	5.8	110	108	147	102	6	27	24	19	30	109	2
PITTSBURGH	59.0	37.4	48.2	93	JUN 27	-18	JAN 24	6496	26.79	1.91	MAR 4-5	61.9	6.0	JAN 26-27	76	80	55	61	8.5	WSW	46*	WNW	AUG 3	58	6.7	65	113	187	132	23	34	20	8	58	140	16
READING U	62.3	43.6	53.0	98	JUL 1	- 2	JAN 24	5206	24.09	2.46	NOV 6-7	26.0	6.8	DEC 23					10.1	NW	58	W	APR 4	57	5.5	125	115	125	102	8	28	10	18	33	96	1
SCRANTON	58.2	38.6	48.4	92	JUL 2+	- 9	FEB 8	6438	26.22	2.23	NOV 6-7	56.7	7.0	JAN 23	73	78	56	60	7.9	SW	42	W	APR 4	57	6.5	84	105	176	118	15	28	28	9	56	120	11
WILLIAMSPORT	60.0	37.7	48.9	95	JUL 26+	-12	JAN 29	6304	31.06	2.31	NOV 29-30	51.2	7.2	MAR 1-2	77	80	52	59	8.6	W	40*	W	APR 4		6.5	74	125	166	130	14	36	38	13	48	128	12
RHODE ISLAND																																					
BLOCK ISLAND	55.0	42.7	48.9	88	JUL 27	1	FEB 8	6063	36.22	3.10	AUG 13-14	21.7	3.7	DEC 18-19		72	63								6.0	92	123	150	103	7	18	90	0	35	99	0
PROVIDENCE	59.0	40.5	49.8	95	JUL 26	- 1	DEC 31	6011	39.50	3.04	NOV 29-30	39.7	5.5	DEC 2-3	76	76	53	65	11.1	WNW	47*	S	NOV 30	60	5.7	115	112	138	112	13	20	30	12	38	120	2
SOUTH CAROLINA																																					
CHARLESTON	75.3	53.2	64.3	98	AUG 4+	16	JAN 25	2337	54.97	5.31	JUN 22-23	.3	.3	FEB 16-17	84	84	52	70	8.5	NNE	62Y	SW	FEB 19	62	5.7	118	104	143	114	0	54	24	63	0	48	0
COLUMBIA	74.5	50.2	62.4	102	JUN 10	14	JAN 25+	2876	42.11	2.58	SEP 28-29	T	T	DEC 23+	78	83	47	58	7.1	SW	45*	SW	MAR 6	64	5.2	136	102	127	93	0	28	16	86	0	70	0
FLORENCE	73.3	50.4	61.9	101	JUN 11	16	FEB 27+	2896	33.42	2.54	SEP 28-29	1.0	1.0	FEB 26	78	82	49	61	8.1	NE	39*	SSW	MAR 6		5.4	131	97	137	102	1	42	27	68	0	63	0
GNVLE-SPARTANBURG	71.1	49.2	60.2	97	JUN 10	9	JAN 24	3298	47.39	4.45	MAR 5-6	4.8	2.1	FEB 26	73	77	49	58	7.5	NE	47	NE	DEC 31	65	5.2	137	101	127	99	2	35	29	45	1	75	0
SOUTH DAKOTA																																					
HURON	59.8	33.9	46.9	102	OCT 5	-33	JAN 15	7455	19.08	1.67	JUL 26-27	31.1	5.9	MAR 18-19	78	83	59	69	12.0	SSE	59	NW	DEC 8	62	6.2	97	103	165	104	10	60	22	28	62	162	49
RAPID CITY	61.9	36.1	49.0	101	JUL 25	-26	JAN 10	6598	19.77	4.01	JUN 14-15	50.8	14.7	MAR 16	72	50	47	66	11.8	NNW	52	W	APR 16	61	5.6	117	114	134	120	15	48	10	44	44	146	32

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 a.m. E.S.T.	7:00 a.m. E.S.T.	1:00 p.m. E.S.T.	7:00 p.m. E.S.T.	Wind: Average speed	Prevailing direction	Fastest mile: Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	Max temp: 90°F and above	32°F and below	Min temp: 32°F and below	0°F and below
SOUTH DAKOTA	°F	°F	°F	°F		°F		Base 65 °F	In	In		In	In		%	%	%	%	M p h		M p h			%	Tenths										
SIOUX FALLS	59.2	35.6	47.4	99	JUN 29	-22	JAN 23	7258	21.00	2.69	JUL 26-27	34.5	8.4	DEC 7-8	77	83	59	59	10.6	S	40*	WNW	JUN 26		6.1	101	109	155	87	14	49	20	28	63	150	42
TENNESSEE																																				
BRISTOL	65.9	43.1	54.5	90	SEP 21+	- 8	JAN 24	4554	38.58	3.10	MAR 11-12	32.0	7.5	DEC 22-23	77	82	54	59	4.7	WSW	40*	WNW	JAN 11		5.9	104	116	145	118	10	40	48	2	24	102	2
CHATTANOOGA	70.6	47.2	58.9	96	AUG 7	- 7	JAN 24	3723	57.21	5.40	MAR 11-12	12.5	8.9	DEC 31-1	82	87	52	58	7.1	S	41	NW	NOV 30	63	5.5	130	93	142	107	5	44	43	43	8	90	2
KNOXVILLE	67.4	46.0	56.7	92	AUG 6	- 6	JAN 24	4076	48.14	4.82	MAR 11-12	29.5	6.7	DEC 22-23	77	83	56	58	6.9	SW	56	N	JUN 14+	57	5.7	121	92	152	119	10	45	34	7	13	91	1
MEMPHIS	71.3	50.3	60.8	99	AUG 28	-13	DEC 24	0	38.68	2.59	MAY 25-26		14.3	DEC 22	77	83	57	59	8.2	S	38	N	JUL 17	75	5.2	138	99	128	83	2	49	12	56	18	80	3
NASHVILLE	69.3	46.2	57.8	96	AUG 6+	-15	JAN 24	4099	44.36	5.34	AUG 28-29	28.7	10.2	DEC 31-1	79	85	56	60	7.8	S	52	NW	JUL 7	64	5.5	124	107	134	97	9	57	24	37	24	93	4
OAK RIDGE AREA STA				94	JUN 10	- 8	JAN 24	4329	46.22	3.84	MAR 11-12	.0	.0						4.5	SW									112	0	0	0	5	14	98	3
OAK RIDGE	67.7	44.5	56.1	94	AUG 24+	- 8	JAN 24	4315	44.70	3.89	MAR 11-12	25.2	10.8	DEC 22-23					4.7		49Y		JUL 28+		5.4	140	88	137	114	6	41	23	18	14	97	2
TEXAS																																				
ABILENE	78.8	53.4	66.1	103	JUL 25+	6	JAN 12	2565	17.76	2.90	AUG 29-30	3.9	2.0	FEB 11	61	72	45	40	9.6	SSE	55	NW	JUN 19	70	5.0	146	99	120	59	1	36	3	129	7	65	0
AMARILLO	72.8	44.7	58.8	100	JUL 23	- 9	JAN 12	3930	17.30	1.75	AUG 13	8.9	2.5	FEB 10-11	59	70	41	36	14.6	S	63	W	MAR 18	78	4.3	172	112	81	66	3	44	20	86	16	107	9
AUSTIN	80.4	58.1	69.3	103	AUG 27+	12	JAN 24	1918	17.30	3.27	APR 4-5	1.0	1.0	FEB 11	69	80	50	46	9.1	S	45	N	FEB 2	58	5.7	113	111	141	64	1	39	18	137	3	32	0
BROWNSVILLE	82.2	64.5	73.4	96	SEP 18+	26	JAN 24	884	18.74	2.87	JUN 17-18	T	T	FEB 11-12	85	89	58	66	12.8	SE	40	NW	NOV 8	56	5.5	106	151	108	61	0	17	22	117	0	9	0
CORPUS CHRISTI	80.9	62.3	71.6	99	AUG 20	18	JAN 24	1282	14.66	2.65	AUG 11	T	T	JAN 13	80	86	58	63	12.4	SSE	48	SE	APR 16	61	6.0	85	132	148	60	0	18	27	116	0	17	0
DALLAS	77.8	56.1	67.0	103	SEP 7+	8	JAN 24	2546	17.52	2.39	APR 28	2.9	2.0	DEC 21-22	63	74	49	44	11.9	S	48	NW	NOV 1	67	5.1	138	99	128	52	1	32	4	127	7	47	0
EL PASO	77.8	50.9	64.4	106	JUL 15	10	JAN 14	2552	4.92	.71	MAY 23	6.1	5.0	FEB 11-12	52	35	27	41	7.7	WSW	57	NW	MAR 18	86	3.6	210	85	70	35	2	33	0	111	2	57	0
FORT WORTH	78.4	54.9	66.7	105	AUG 27+	9	JAN 24+	2579	40.46	2.57	APR 26-27	2.7	2.5	DEC 21-22	64	76	48	44	11.4	SSE	51*	NE	SEP 7		5.2	145	91	129	58	1	36	8	129	6	58	0
GALVESTON U	74.2	64.8	69.5	93	AUG 14	19	JAN 24	1500	30.25	3.39	JUN 20-21	T	T	FEB 22+					11.4		50	NE	SEP 17	68					61	0	0	0	7	1	14	0
HOUSTON U	79.2	62.7	71.0	100	AUG 13	18	JAN 24	1421	38.13	3.10	MAY 22	.0	.0																81	0	0	0	112	1	17	0
HOUSTON	79.9	59.2	69.6	100	JUN 16	17	JAN 24	1620	32.29	3.24	JUN 20-21	T	T	FEB 12+	85	88	57	64	9.9	SSE	54*	NNW	AUG 20	68	6.2	80	131	154	72	0	46	27	121	1	24	0
LAREDO	85.7	62.4	74.1	107	APR 9	21	JAN 24	1220	17.48	5.27	JUN 16-17	.0	.0		66	80	47	40	10.9	ESE	44*	S	JUN 24		5.2	136	115	114	51	0	24	8	200	0	18	0
LUBBOCK	74.7	46.3	60.5	100	JUL 23	-16	JAN 13	3456	16.21	2.26	MAY 31	11.8	4.4	FEB 21	63	75	47	40	13.4	SSE	52*	NNW	JUN 18		4.4	158	119	88	63	5	48	16	85	14	98	2
MIDLAND	78.4	51.7	64.8	103	JUL 23	5	JAN 12	2596	10.96	1.72	JUN 19	2.7	2.5	FEB 12	57	69	40	33	11.0	S	49*	NE	MAY 5		4.8	145	115	105	56	1	43	11	118	8	66	0
PORT ARTHUR	79.4	58.1	68.8	100	AUG 27+	16	JAN 24	1795	52.32	13.17	SEP 17-18	T	T	FEB 22+	87	90	59	70	9.1	S	66	SW	JUL 26	63	5.9	87	146	132	91	0	63	35	120	1	33	0
SAN ANGELO	80.1	53.7	66.9	104	JUL 24+	6	JAN 24	2387	13.95	1.94	MAY 19-20	4.0	2.0	FEB 11	60	72	45	39	8.5	SSE	60*	NNE	MAY 5		4.9	156	92	117	57	2	33	1	144	6	65	0
SAN ANTONIO	80.7	58.4	69.6	100	SEP 7+	15	JAN 24	1764	18.65	2.55	MAY 5-6	T	T	DEC 22+	72	81	52	46	9.1	SSE	40	NE	FEB 2+	66	5.4	123	119	123	63	0	24	17	133	1	28	0
VICTORIA	80.6	60.2	70.4	101	AUG 20	17	JAN 24	1521	22.05	1.99	NOV 27-28	T	T	FEB 12		88	53	60	10.3		99		JUL 24		6.0	75	149	141	63	0	36	17	134	0	21	0
WACO	79.3	56.7	68.0	103	AUG 27+	11	JAN 24	2301	19.57	2.94	MAY 5-6	2.0	1.0	DEC 13+	66	79	51	46	13.5	SSE	52*	NW	MAY 28		5.3	138	92	135	56	2	39	13	138	4	49	0
WICHITA FALLS	78.2	51.9	65.1	106	AUG 24+	5	JAN 24	2950	20.55	2.98	JUL 13-14	5.6	4.0	FEB 16	65	75	45	43	10.6	S	38*	N	MAY 19		4.9	155	87	123	65	1	48	15	142	9	72	0
UTAH																																				
MILFORD	66.3	33.7	50.0	99	AUG 14+	-19	JAN 13	6046	8.56	1.01	NOV 6-7	42.9	6.8	FEB 10-11		40	31								5.1	137	110	118	70	14	35	7	60	21	164	13
SALT LAKE CITY	63.4	38.3	50.9	102	JUL 24	-18	JAN 12	6059	14.09	.92	MAR 15	58.7	7.9	MAR 15	70	48	44	64	9.3	SSE	63	W	JUN 3	63	5.9	107	107	151	78	18	33	14	57	35	145	7
WENDOVER	62.0	41.9	52.0	100	JUL 24	-10	JAN 12	5789	6.81	.62	JUN 3-4	4.8	1.2	DEC 9-10+	53	42	36								4.9	155	78	132	61	1	32	6	43	39	123	3
VERMONT																																				
BURLINGTON	52.9	30.8	41.9	97	JUL 29+	-26	FEB 4	8655	26.23	1.15	JUL 29-30	70.6	5.8	JAN 27	78	76	57	66	8.6	S	49	S	MAR 6	56	6.8	68	109	188	139	22	31	14	11	86	180	35

See reference notes at end of table.

ANNUAL CLIMATOLOGICAL DATA

ENGLISH UNITS

Year 1953

State and Station	Temperature							Heating degree days	Precipitation						Relative humidity				Wind					Possible sunshine	Average sky cover sunrise to sunset	Number of days									
	Averages			Extremes								Snow, Sleet								Fastest mile						Sunrise to sunset						Max temp		Min temp	
	Daily maximum	Daily minimum	Mean	Highest	Date	Lowest	Date	Base 65 °F	Total	Greatest in 24 hours	Date (s)	Total	Greatest in 24 hours	Date (s)	1:00 a.m. E.S.T.	7:00 a.m. E.S.T.	1:00 p.m. E.S.T.	7:00 p.m. E.S.T.	Average speed	Prevailing direction	Speed	Direction	Date			Clear, 0-0.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation .01 inch or more	Snow, Sleet .10 inch or more	Thunderstorms	Heavy fog	90 °F and above	32 °F and below	32 °F and below	0 °F and below
VIRGINIA	°F	°F	°F	°F		°F		Base 65 °F	In.	In.		In.	In.		%	%	%	%	M.p.h.		M.p.h.			%	Tenths									
LYNCHBURG	66.5	44.5	55.5	97	AUG 3+	-1	JAN 24	4429	26.56	2.03	NOV 6	14.8	4.4	DEC 23		72	47	55	6.7		39	W	MAR 6	61	5.3	137	103	125	93	6	21	24	26	20	98	1
NORFOLK	66.5	48.8	57.7	97	JUL 20+	15	FEB 23	3845	43.27	6.85	JUN 2-3	9.4	6.3	FEB 26-27	77	78	57	66	11.2	SW	57	W	MAR 6	57	5.6	117	110	138	116	3	23	27	30	14	71	0
RICHMOND	67.9	44.3	56.1	96	AUG 3+	7	DEC 21	4245	37.46	4.61	JUN 2-3	8.3	5.3	FEB 26	78	80	50	63	8.1	SSW	37	W	MAR 6	61	5.3	126	118	121	90	3	25	21	42	10	99	0
ROANOKE	66.7	44.1	55.4	100	AUG 3	+4	JAN 24	4461	25.67	1.61	SEP 28-29	23.0	8.1	DEC 23	68	72	45	51	9.1	WSW	58*	NW	APR 20		5.3	123	123	119	87	5	23	25	21	16	97	1
WASHINGTON																																				
OLYMPIA	60.3	40.4	50.4	91	SEP 9	5	JAN 12	5304	47.84	2.46	FEB 2-3	2.1	2.0	JAN 30	90	79	65	86	6.6	SSW	44*	S	OCT 24		7.9	41	72	252	170	1	12	108	3	5	72	0
SEATTLE-TACOMA	59.2	44.4	51.8	93	MAY 21	12	JAN 11	4858	38.72	1.62	FEB 2-3	4.6	2.0	JAN 9	86	76	65	77	8.5	SSW	35*	S	OCT 21+		7.6	51	79	235	166	2	9	62	2	5	45	0
SEATTLE	59.9	47.7	53.8	92	MAY 21	17	JAN 11	4161	33.53	1.78	FEB 2-3	1.8	1.0	JAN 13							60	SW	OCT 21+	48				163	1	0	0	2	2	15	0
SPOKANE	58.0	38.0	48.0	95	AUG 6	-7	JAN 11	6537	15.26	1.11	FEB 2-3	33.1	9.1	JAN 1	76	63	50	66	8.4	SSW	49	SW	APR 14	59	6.5	93	73	199	98	9	12	53	18	43	122	9
STAMPEDE PASS R	46.2	33.8	40.0	84	AUG 8	-10	JAN 11	9067	65.61	3.66	FEB 2-3	312.5	15.2	DEC 6	86	82	77								7.7	63	45	257	204	76	5	245	0	67	182	3
TATOOSH ISLAND R	54.4	46.2	50.3	74	MAY 20	22	JAN 11	5269	79.15	3.86	DEC 22-23	T	T	MAR 30+	86	82	79	85	15.8	ENE	70	S	OCT 24	41	8.0	42	60	263	190	0	12	51	0	1	8	0
WALLA WALLA U	63.1	45.1	54.1	100	AUG 11		JAN 11	4736	13.60			8.6	2.8	JAN 30-31												33	35	113	100	5	17	28	29	25	67	1
YAKIMA	62.7	37.2	50.0	98	JUN 15	-3	JAN 11	5844	8.17	1.37	JAN 1	21.0	13.6	JAN 31	77	56	43	68	6.9	W	41*	SSW	MAR 28		6.2	104	80	181	69	3	8	21	27	27	130	4
WEST INDIES																																				
SAN JUAN P.R. U	84.7	73.6	79.2	96	OCT 12	65	APR 25	0	52.11	2.73	MAR 25-26	.0	.0																						
SAN JUAN P.R.	85.9	72.2	79.1	93	OCT 10	69	JAN 11	0	48.61	3.08	SEP 4-5	.0	.0		89	84	66	80	8.2	ENE	29	NE	MAR 26	63	6.2	43	207	115	208	0	42	0	34	0	0	0
WEST VIRGINIA																																				
CHARLESTON	64.0	41.1	52.6	92	MAY 9	-12	JAN 24	5130	30.25	1.50	MAR 11	46.1	6.2	DEC 23	88	89	57	69	6.9	NW	50	W	APR 30		6.9	61	105	199	158	21	43	102	1	40	167	15
ELKINS	60.1	34.7	47.4	90	JUL 17	-21	FEB 27	6524	38.65	2.94	MAR 19	60.0	6.1	FEB 12	80	85	55	59	5.8	SW	35*	SW	MAY 28		6.3	80	127	158	118	14	29	118	9	36	109	10
HUNTINGTON	64.4	41.8	53.1	92	JUN 10+	-15	JAN 24	5003	29.99	1.95	MAR 11	27.0	5.5	DEC 23	77	84	56	59	6.1	S	30*	N	MAR 4		6.4	80	123	162	113	10	38	63	8	39	107	12
PARKERSBURG U	63.4	41.2	52.3	93	JUN 26	-14	JAN 24	5309	29.64	3.46	MAR 4-5	25.2	5.0	DEC 23					6.5		38	NW	JUN 10	55				118	10	35	11	11	40	113	9
WISCONSIN																																				
GREEN BAY	54.0	32.5	43.3	93	JUL 1	-27	JAN 23	8265	19.97	1.40	JUN 27	35.5	7.2	MAR 5-6	83	85	63	67	8.3	SW	50	SW	APR 3	55	6.1	98	107	160	109	11	33	26	4	89	151	55
LA CROSSE	55.9	36.5	46.2	99	JUL 1	-31	JAN 15	7521	26.57	2.14	JUL 12-13	41.3	8.7	JAN 11-12	80	81	57	59	9.7	S	63*	NW	AUG 2+		6.1	99	112	154	102	10	41	27	13	79	133	45
MADISON	56.0	33.2	44.6	95	JUL 1	-30	JAN 15	7962	26.19	3.67	JUN 5	37.9	8.8	MAR 5-6	78	82	59	63	8.5	S	54	N	JUN 7	52	6.1	97	113	155	96	12	41	29	10	80	161	56
MILWAUKEE	53.9	35.4	44.7	98	JUL 1	-24	JAN 15	7779	19.10	1.64	APR 29-30	34.4	4.9	DEC 11	75	79	62	65	10.6	SSW	56	SW	APR 3	61	5.7	114	114	137	105	12	31	22	5	79	141	41
WYOMING																																				
CASPER	60.5	34.0	47.3	96	JUL 25	-27	JAN 11	6872	7.90	.68	JUL 26	39.0	3.5	APR 20-21	67	42	36	59	12.3	SW	48*	SW	FEB 1		5.8	112	103	150	87	16	36	1	19	35	163	22
CHEYENNE	60.7	34.3	47.5	95	JUL 21	-27	JAN 11	6732	14.89	1.78	SEP 8-9	33.1	5.3	MAR 2-3	67	41	44	64	13.3	WNW	62	W	MAR 28	74	5.4	117	130	118	90	12	51	16	19	38	160	23
LANDER	58.9	32.1	45.5	96	JUL 25	-37	JAN 12	7432	12.82	2.97	JUN 14-15	97.6	20.2	APR 20-21	66	47	43	58	6.3	W	56	SW	JAN 31	73	5.4	124	113	128	70	23	34	2	15	47	168	28
SHERIDAN	60.4	33.4	46.9	97	JUL 24+	-35	JAN 19	6996	18.08	3.24	APR 27-28	72.3	6.2	DEC 17	74	49	48	65	7.7	NW	66	SW	MAR 28	61	6.1	94	110	161	105	21	37	5	27	41	169	24

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites

* Values entered in column 'Fastest Mile' is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which Fastest Mile data can be evaluated.

+ And also on an earlier date or dates.

A Maximum hourly average.

B Number of days maximum 70° F. or above for Alaskan Stations.

Y Peak gust.

Wind direction to 8 compass points only.

F Computed as 1/8 of a.m. local time.

h Computed as of noon local time.

V Sun below horizon November 19 - January 23.

X Sun below horizon November 24 - January 17.

† From the Loyola Avenue site.

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1973

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Annual	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Heating degree days	Precipitation: Total	Precipitation: Greatest in 24 hours	Precipitation: Date (s)	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Relative humidity: 1:00 am EST	Relative humidity: 7:00 am EST	Relative humidity: 1:00 pm EST	Relative humidity: 7:00 pm EST	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-0.3	Number of days: Sunrise to sunset: Partly cloudy, 0.4-0.7	Number of days: Sunrise to sunset: Cloudy, 0.8-1.0	Number of days: Precipitation 25mm or more	Number of days: Snow, Sleet 25.4mm or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 32.2°C and above	Number of days: Max temp: 0°C and below	Number of days: Min temp: 0°C and below	Number of days: Min temp: -17.8°C and below
ALABAMA	°C	°C	°C	°C		°C		Base 18.3°C	Mm	Mm.		Mm.	Mm.		%	%	%	%	M.p.s		M.p.s.			%	Tenths										
BIRMINGHAM	22.8	10.2	16.5	36.7	JUL 14+	- 18.9	JAN 24	1714	1399	87	APR 29	216	213	DEC 31-1	79	83	54	61	3.5	E	21.0	NE	JUL 24	62	5.6	121	102	142	99	1	49	12	56	3	75	1
HUNTSVILLE	22.3	9.3	15.8	36.1	AUG 6+	- 20.0	JAN 24	1929	1359	148	MAR 11-12	610	434	DEC 31-1	75	81	51	56	3.9	SE	28.2*	N	JUL 20		5.4	141	91	133	99	4	44	12	64	10	83	2
MOBILE	25.3	13.7	19.5	37.8	JUN 14	- 13.3	JAN 24	1102	1342	116	JUN 19-20	76	76	DEC 31	80	83	53	64	3.6	SW	22.8*	NW	MAY 7		5.7				0	0	0	0	0	0	0	0
MONTGOMERY	24.3	11.5	17.9	37.8	JUN 15+	- 15.0	JAN 24	1437	1055	74	SEP 27-28	25	25	DEC 31	78	84	53	57	3.4	ENE	16.5	W	MAR 5	62	5.4	130	99	136	90	1	57	14	90	2	60	0
ALASKA																																					
ANCHORAGE	6.4	- 1.4	2.5	23.9	AUG 13	- 30.0	JAN 9	5709	460	29	JUL 16-17	2403	218	APR 9-10	80	75	66	76	2.6	N	19.7*	N	FEB 1	45	7.3	65	76	224	117	27	0	31	15	113	197	23
ANNETTE	11.7	5.8	8.8	31.1	MAY 21	- 12.2	21	3449	2938	86	OCT 30-31	615	117	NOV 22-23	83	78	71	81	4.5	SSE	22.8*	ESE	SEP 24		8.2	32	63	270	225	10	3	20	23	7	47	0
BARROW	- 8.9	-15.1	-12.0	17.2	JUL 25	- 42.2	FEB 6+	11039	248	18	MAR 24-25	1577	180	MAR 24-25	78	78	75	77	5.9	ENE	24.6*	W	OCT 3+			V39	V52	V208	116	18	0	85	0	259	320	169
BARTER ISLAND	7.7	-14.4	-11.1	18.9	AUG 15	- 42.2	JAN 8	10677	227	21	JAN 29	1331	112	APR 4	78	78	77	78	5.6	ENE	30.8*	WSW	MAR 26			X50	X61	X216	119	19	0	61	0	245	308	157
BETHEL	2.1	- 5.5	- 1.7	27.2	JUL 10	- 35.6	JAN 8	7242	519	33	AUG 28-29	1097	102	MAR 16-17	87	85	76	81	5.7	NNE	19.7*	S	MAR 25		7.5	60	64	241	142	18	0	61	15	153	220	68
COLD BAY	6.1	1.4	3.8	18.3	AUG 9	- 17.2	NOV 29	5249	749	47	JAN 22-23	490	46	APR 25-26	87	86	80	85	7.3	SSE	26.4*	SSE	DEC 7		9.0	8	42	315	186	3	0	29	0	47	143	0
CORDOVA	8.6	.1	4.3	25.6	AUG 31	- 23.3	JAN 9	5059	2367	92	OCT 6-7	2268	333	JAN 2-3	90	84	76	86	2.7	ESE	13.4*	ESE	DEC 2+		7.9	48	61	256	215	23	0	15	8	35	162	9
FAIRBANKS	2.5	- 8.5	- 3.0	28.9	JUL 11+	- 45.6	JAN 8	7739	355	30	AUG 9	2106	320	MAR 25	78	74	61	69	2.2	N	12.1*	SSW	JUN 4+		7.1	64	83	218	114	22	3	17	38	165	222	115
JUNEAU	8.9	1.7	5.3	27.2	AUG 12	- 18.3	JAN 9	4694	1458	49	JAN 3-4	3312	615	APR 2-3	85	80	73	82	4.1	ESE	24.6*	ESE	DEC 3	37	8.4	43	36	286	227	29	1	21	19	48	130	4
KING SALMON	5.7	- 3.4	1.2	26.1	JUL 29	- 34.4	JAN 7	6205	534	51	AUG 22-23	1016	160	MAR 13-14	85	81	68	78	5.2	N	24.6*	E	DEC 20		7.5	66	52	247	146	16	0	33	17	97	200	43
KOTZEBUE	- 2.2	- 9.4	- 5.8	20.6	AUG 14	- 35.6	MAR 2+	8766	358	35	JUL 3-4	1435	109	MAR 24-25	82	81	77	79	6.0	WNW	21.9*	SW	AUG 22		6.7	102	47	216	114	21	0	17	0	200	242	114
MC GRATH	1.4	- 8.8	- 3.7	28.3	JUL 10	- 48.9	JAN 8	8036	227	21	AUG 23-24	1994	218	MAR 9-10	76	72	59	69	2.5	N	14.3	SSW	MAR 25		7.3	68	60	237	116	29	6	21	23	170	235	114
NOME	.8	- 6.6	- 2.9	21.1	MAY 28	- 37.8	JAN 7	7690	304	31	JAN 15-16	986	81	MAR 7-8	79	77	73	76	5.7	N	20.6*	NE	DEC 17	33	6.7	100	58	207	111	13	0	26	1	167	239	76
ST. PAUL ISLAND	3.7	- .7	1.6	12.2	AUG 5+	- 16.7	FEB 28	6057	674	46	JUL 18-19	1191	163	APR 24-25	90	90	86	89	8.0	NW	25.0*	W	OCT 28		9.2	7	36	322	196	12	0	106	0	76	190	0
SHEMYA	5.7	2.5	4.1	12.8	AUG 16+	- 6.1	FEB 26	5131	711	57	AUG 19	757	81	DEC 29-30	87	88	86	86	8.3	S	30.4*	SSW	NOV 17		9.1	3	53	309	221	7	0	74	0	15	88	0
YAKUTAT	8.4	1.7	5.1	26.1	MAY 21	- 16.7	JAN 20+	4783	4558	177	OCT 7-8	3063	300	MAR 26	91	84	78	88	3.2	E	28.2*	SE	DEC 3		8.1	48	39	278	237	32	5	44	7	32	123	0
ARIZONA																																					
FLAGSTAFF	16.6	- .9	7.9	31.7	JUL 24	- 28.9	JAN 12	3827	369	45	AUG 31	1425	201	NOV 20-21	70	38	36	61	3.3	SSW	15.6*	SSW	JAN 18		4.4	173	89	103	66	14	49	8	0	10	206	11
PHOENIX	29.8	13.5	21.7	44.4	JUL 24	- 6.7	JAN 13	773	184	36	OCT 18-19	0	0		48	30	21	37	3.0	ESE	21.5*	SE	AUG 25	89	3.1	228	79	58	28	0	28	1	171	0	18	0
PRESCOTT	21.7	5.2	13.4	36.7	JUL 30	- 17.2	JAN 13	2269	250	28	AUG 25-26	102	102	MAR 17-18	62	34	29	51	4.0	SW	25.0	SE	MAR 2	82	3.7	194	102	69	52	2	42	2	45	3	126	0
TUCSON	27.9	12.7	20.3	41.7	JUL 25	- 6.1	JAN 13	891	253	29	SEP 3-4	0	0		50	29	23	41	4.2	SSE	23.2	W	NOV 7	85	3.6	194	101	70	41	0	52	0	152	0	16	0
WINSLOW	22.3	4.4	13.3	40.0	JUL 25	- 25.0	JAN 13	2507	249	35	AUG 21-22	338	102	JAN 19	64	38	30	52	3.9	SW	23.7*	SSW	MAR 15		4.1	180	100	85	50	7	34	6	73	10	131	6
YUMA	31.7	15.7	23.7	45.6	SEP 8+	- 2.2	JAN 14+	430	114	61	SEP 17	0	0		48	29	19	38	3.2	SSE	15.6	SE	OCT 18+	91	2.8	241	79	45	14	0	7	2	187	0	4	0
ARKANSAS																																					
FORT SMITH	23.6	9.3	16.4	41.1	AUG 28	- 17.2	DEC 23+	1975	688	71	JUN 19	102	102	DEC 22	75	83	52	52	3.2	ENE	17.9	NW	MAY 16	65	5.3	133	102	130	74	1	35	12	102	10	88	0
LITTLE ROCK	23.4	9.6	16.6	41.7	AUG 28	- 18.3	DEC 24	1892	718	64	NOV 21-22	277	249	DEC 22	78	84	52	56	3.4	WSW	22.4	SE	MAY 28	67	5.2	137	100	128	87	1	53	12	97	11	84	1
TEXARKANA	24.2	11.9	18.1	38.9	AUG 26	- 14.4	JAN 24	1518	963	83	JUN 19-20	152	127	DEC 22	77	84	57	58	3.8	NE									74	1	38	14	95	11	57	0
CALIFORNIA																																					
BAKERSFIELD	23.7	11.2	17.4	41.7	SEP 26	- 6.7	JAN 13	1321	175	27	FEB 13	0	0		72	57	41	60	2.8	NW	14.3*	SE	MAR 16		4.3	183	79	103	41	0	2	38	81	0	28	0
BISHOP	23.5	3.1	13.3	39.4	AUG 15	- 16.7	JAN 13	2281	173	49	JAN 30-31	41	28	MAR 14		28	19								3.7	200	82	83	42	1	16	0	88	0	138	0
BLUE CANYON	14.1	5.6	9.9	29.4	SEP 26	- 9.4	JAN 12+	3160	1906	231	JAN 1	4948	617	MAR 27-28		51									5.1	158	54	153	95	33	13	69	0	14	82	0
BURBANK	23.4	11.2	17.3	41.1	SEP 28	- 1.1	JAN 14	884	334	90	FEB 9-10	3	3	MAR 17	74	53	44	67	2.7	S	13.0*	SSE	FEB 9		4.1	189	82	94	43	0	6	11	22	0	1	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Annual	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Heating degree days	Precipitation: Total	Precipitation: Greatest in 24 hours	Precipitation: Date (s)	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Relative humidity: 1:00 am EST	Relative humidity: 7:00am EST	Relative humidity: 1:00pm EST	Relative humidity: 7:00pm EST	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-3	Number of days: Sunrise to sunset: Partly cloudy, 0.4-0.7	Number of days: Sunrise to sunset: Cloudy, 0.8-1.0	Number of days: Precipitation 25mm or more	Number of days: Snow, Sleet 25.4mm or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp. 32.2°C and above	Number of days: Max temp. 0°C and below	Number of days: Min. temp. 0°C and below	Number of days: Min. temp. -17.8°C and below
CALIFORNIA	°C	°C	°C	°C		°C		Base @ 3°C	Mm	Mm		Mm	Mm		%	%	%	%	M.p.s		M.p.s.			%	Tenths										
EUREKA U	14.9	8.9	11.9	25.0	DEC 30	- 1.1	JAN 12	2287	1063	65	APR 11-12	0	0						3.1	SE#	20.1	S	DEC 24	52	7.2	55	97	213	128	0	3	37	0	0	2	0
FRESNO	23.3	9.6	16.4	41.7	SEP 26	- 7.2	JAN 13	1551	362	30	JAN 30-31	0	0		80	62	43	67	2.9	NW	15.2	NW	MAR 31	76	4.5	180	66	119	50	0	8	63	89	0	28	0
LONG BEACH	23.3	11.9	17.6	43.3	SEP 26	- 3.9	JAN 13	772	346	91	FEB 9-10	0	0		80	60	54	76	2.7	WNW	19.7*	WNW	APR 1		4.6	165	109	91	34	0	8	35	14	0	1	0
LOS ANGELES	21.8	13.1	17.4	43.3	SEP 26	- 1.1	JAN 13	725	343	93	FEB 9-10	0	0		75	59	63	74	3.5	W	14.3*	W	APR 1		4.5	158	107	100	35	0	4	28	7	0	1	0
LOS ANGELES U	23.2	13.6	18.4	42.8	SEP 26	- 1.1	JAN 13	589	313	63	FEB 9-10	0	0		71	51	50	68	2.7	WW	15.2	NW	NOV 21	74	4.1	182	107	76	41	0	9	4	15	0	0	0
MT SHASTA R	16.4	3.1	9.8	33.9	AUG 7+	- 15.0	JAN 12	3186	956	69	APR 13-14	2113	363	MAR 15-16		63	52								5.1	147	83	135	98	19	14	2	10	3	130	0
OAKLAND	17.9	10.0	14.0	34.4	JUL 26	- 1.1	JAN 14	1615	485	39	MAR 27-28	0	0		83	71	62	79	4.0	WNW	17.9*	SW	NOV 5		5.1	137	118	110	61	0	3	16	1	0	8	0
POINT ARGUELLO R	18.0	8.2	13.1	28.3	NOV 10	- 3.9	JAN 14	1872	384	58	FEB 9-10	0	0						3.2		14.3*	SE	JAN 30		5.8	112	100	153	74	0	2	116	0	0	14	0
RED BLUFF	22.6	9.8	16.2	40.6	SEP 4+	- 4.4	JAN 14	1648	570	52	JAN 29-30	T	T	MAR 16+	71	55	41	62	4.0	SSE	25.0	SE	JAN 31	73	5.0	154	73	138	75	0	9	33	78	0	27	0
SACRAMENTO	21.8	8.7	15.3	40.0	SEP 26+	- 5.0	JAN 13	1700	550	63	JAN 30-31	0	0		80	71	55	81	2.5	SW	17.0	W	MAR 22	72	5.1	155	74	136	63	0	7	60	66	0	26	0
SACRAMENTO U	21.6	9.6	15.6	39.4	SEP 26	- 2.8	JAN 13	1544	482	49	JAN 30-31	0	0																64	0	0	0	59	0	18	0
SANDBERG R	17.1	7.6	12.3	34.4	AUG 14	- 11.7	JAN 12	2533	326	46	FEB 9-10	505	201	MAR 16		46			5.8	S	27.7	NNW	NOV 21		3.0	211	69	85	43	5	6	80	4	3	51	0
SAN DIEGO	21.9	13.2	17.6	43.9	SEP 26	- .6	JAN 13	671	196	38	NOV 20-21	0	0		78	59	61	76	3.1	WNW	14.3	SE	MAR 16	70	4.6	152	120	93	41	0	1	18	5	0	1	0
SAN FRANCISCO	18.0	9.1	13.6	34.4	JUL 26	- 1.7	JAN 13	1763	505	54	JAN 30-31	0	0		86	73	64	83	4.5	W	26.8	SSE	JAN 30		4.9	148	105	112	62	0	3	12	2	0	7	0
SAN FRANCISCO U	17.0	10.8	13.9	31.1	SEP 26+	2.8	DEC 16	1608	477	50	JAN 29-30	0	0			F79	K68		3.5	W				68					64	0	2	0	0	0	0	0
SANTA CATALINA	20.1	12.6	16.4	38.3	SEP 26	2.2	JAN 13	1137	287	49	FEB 8-9	0	0													152	72	82	44	0	3	147	12	0	0	0
SANTA MARIA	20.1	7.7	13.9	33.3	SEP 27	- 5.0	JAN 13	1616	362	46	FEB 9-10	0	0		88	61	62	86	3.3	WNW	14.3*	WNW	MAR 31		4.3	180	93	92	54	0	2	58	1	0	25	0
COLORADO																																				
ALAMOSA	15.9	- 4.5	5.7	31.7	JUL 25+	- 40.6	JAN 13	4594	166	29	FEB 9-10	734	292	FEB 9-10	75	42	38								4.3	163	130	72	67	8	47	20	0	28	213	63
COLORADO SPRINGS	18.5	3.1	10.8	37.2	JUL 22	- 29.4	JAN 12	3102	336	40	AUG 12-13	823	165	DEC 21	58	33	36	55	4.4	NNE	23.7*	WNW	MAR 16		5.0	134	126	105	80	11	66	12	31	23	140	15
DENVER	18.8	2.0	10.4	37.2	JUL 25	- 31.7	JAN 12+	3204	311	55	JUN 15-16	1013	231	MAR 2-3	66	38	38	59	4.3	S	21.0	SW	APR 15	75	5.0	125	147	93	75	13	36	12	37	27	152	19
GRAND JUNCTION	18.8	4.6	11.7	37.8	JUL 25+	- 30.6	JAN 13	3034	186	19	JUL 9	747	168	JAN 18-19	55	38	32	46	2.6	SE	19.7	N	JUL 12	68	5.0	144	109	112	59	7	32	11	47	31	127	16
PUEBLO	21.1	3.4	12.3	39.4	JUL 22+	- 32.2	JAN 12	2882	165	22	AUG 9-10	478	89	DEC 21	65	36	32	55	4.2	SSE	28.6	SW	APR 15	79	4.3	168	115	82	60	7	41	2	71	21	136	20
CONNECTICUT																																				
BRIDGEPORT	14.7	5.6	10.1	36.1	JUL 2	- 20.6	FEB 8	3243	782	66	JUL 21	986	183	JAN 26-27	78	78	59	69	5.9	WSW	25.0*	WSW	MAY 30		5.7	112	105	148	97	11	18	32	10	41	110	1
HARTFORD	15.4	3.0	9.2	35.0	JUL 25+	- 23.3	JAN 29	3597	938	62	SEP 29	1323	267	FEB 19-20	80	80	54	64	3.5	S	18.3	NW	APR 4	65	6.3	87	117	161	116	16	22	29	18	48	143	12
NEW HAVEN	14.7	4.9	9.8	35.0	JUL 1	- 20.0	FEB 8	3332	970	119	NOV 6-7	1077	145	DEC 23-24		78	57		3.6		21.0	NW	APR 4	66	5.7	110	113	142	106	12	28	21	5	37	117	2
DELAWARE																																				
WILMINGTON	17.0	5.8	11.4	36.1	JUL 27+	- 17.2	JAN 29	2951	815	75	NOV 6-7	460	163	DEC 23	76	77	52	64	3.8	WNW	21.5*	W	JUL 29		5.6	118	107	140	96	5	27	36	17	30	110	0
DIST OF COLUMBIA																																				
WASH NATL AP	18.6	7.7	13.2	35.6	JUL 27+	- 16.1	JAN 24	2504	999	158	AUG 19-20	295	142	DEC 23	68	70	48	55	3.8	S	23.2	NW	APR 23	62	5.3	133	102	130	92	4	21	11	28	17	89	0
FLORIDA																																				
APALACHICOLA U	23.7	15.8	19.8	33.3	SEP 5+	- 7.2	JAN 24	899	1357	137	JUL 23-24	0	0						3.2		15.6	N	FEB 3		5.3	123	122	120	97	0	12	34	19	0	11	0
DAYTONA BEACH	26.0	16.0	21.0	36.7	JUN 14	- 1.1	DEC 25	593	1347	117	NOV 25-26	0	0		85	85	61	74	4.1	SW	17.9*	WSW	JUL 9		6.1	92	120	153	122	0	16	26	54	0	3	0
FORT MYERS	28.8	17.5	23.2	35.0	SEP 16+	3.9	DEC 25+	249	1090	82	NOV 9-10	0	0		86	86	57	73	3.8		15.6*	SSW	SEP 29+		5.2	115	159	91	103	0	89	32	124	0	0	0
JACKSONVILLE	25.6	14.6	20.1	36.1	AUG 8+	- 4.4	JAN 24	857	1389	88	FEB 3-4	0	0		86	88	56	71	4.0	NE	27.7	N	DEC 31	69	6.0	89	125	151	116	0	63	30	82	0	20	0
KEY WEST	27.9	22.4	25.2	34.4	JUL 9	12.8	DEC 19	27	1200	169	SEP 19-20	-	0		77	78	65	72	5.2	ESE	16.1	NE	OCT 6	73	5.3	109	160	96	103	0	65	1	69	0	0	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Annual	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Heating degree days	Precipitation: Total	Precipitation: Greatest in 24 hours	Precipitation: Date (s)	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Relative humidity: 1:00 am EST	Relative humidity: 7:00 am EST	Relative humidity: 1:00 pm EST	Relative humidity: 7:00 pm EST	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1 6 kilometers): Speed	Wind: Fastest mile (1 6 kilometers): Direction	Wind: Fastest mile (1 6 kilometers): Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0 - 3	Number of days: Sunrise to sunset: Partly cloudy, 0 4-0 7	Number of days: Sunrise to sunset: Cloudy, 0 8-10	Number of days: Precipitation 25mm or more	Number of days: Snow, Sleet 25 4mm or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 32 2°C and above	Number of days: Max temp: 0°C and below	Number of days: Min temp: 0°C and below	Number of days: Min temp: -17 8°C and below
	°C	°C	°C	°C		°C		Base 18 3°C	Mm	Mm		Mm	Mm		%	%	%	%	M p s		M p s			%	Tenths										
FLORIDA																																		
LAKELAND U	26.9	16.8	21.9	35.0	AUG 25+	1.1	DEC 25+	464	1175	101	NOV 9-10	0	0						3.4					61	5.6	92	154	119	124	0	96	23	94	0	0	0
MIAMI BEACH	27.4	21.6	24.6	36.1	JUL 8	6.7	DEC 25	61	1018	101	MAY 3-4	0	0						6.1	N				63	5.2	100	171	94	94	0	0	0	28	0	0	0
MIAMI	27.8	19.7	23.8	35.0	JUL 7	6.1	DEC 25	117	1170	105	SEP 19-20	0	0		84	87	62	73	4.3	ESE	15.6*	WNW	JUL 8		5.9	76	161	128	116	0	83	15	49	0	0	0
ORLANDO	27.8	16.5	22.2	36.7	AUG 10+	.6	DEC 25	457	1150	100	SEP 22-23+	0	0		85	89	54	68	4.2	ENE	20.6*	WSW	FEB 19		5.7	93	148	124	115	0	75	21	124	0	0	0
PENSACOLA	23.9	14.8	19.3	35.6	AUG 26	- 12.2	JAN 24	1081	1400	107	JUL 25-26	T	T	DEC 31+					3.8	N	19.2	NW	NOV 29	63					109	0	61	0	42	1	30	0
TALLAHASSEE	25.3	12.7	19.1	36.1	AUG 7	- 8.3	JAN 25+	1117	1377	104	SEP 28-29	0	0		86	89	55	67	4.2	N	20.6*	SW	JAN 20		5.9	90	138	137	114	0	91	51	81	0	41	0
TAMPA	27.0	16.3	21.7	35.6	SEP 1+	- .6	DEC 19	492	1103	107	OCT 9-10	0	0		86	88	57	72	5.3	E	25.9*	NW	JUL 10	69	5.7	100	140	125	111	0	87	24	74	0	1	0
WEST PALM BEACH	28.3	18.8	23.6	36.7	AUG 14+	3.9	DEC 25	172	1354	169	OCT 1-2	0	0		83	86	59	72	4.2	ESE	19.7*	W	JUL 23		6.0	71	169	125	114	0	80	13	92	0	0	0
GEORGIA																																		
ATHENS	22.1	9.4	15.8	35.6	JUN 10	- 15.6	JAN 24	1789	1602	137	JUN 26-27	51	51	DEC 31	78	85	53	63	3.4	WNW	13.9*	SW	MAR 5		5.2	146	94	125	100	1	56	21	45	1	80	0
ATLANTA	20.9	9.7	15.3	34.4	JUN 14	- 19.4	JAN 24	1874	1405	80	APR 29-30	64	56	DEC 31	76	81	55	60	3.3	WNW	17.0*	E	DEC 31	70	5.2	142	94	129	99	1	41	31	17	3	73	1
AUGUSTA	23.7	9.9	16.8	37.8	JUN 10	- 10.0	JAN 25+	1552	1068	69	SEP 28-29	T	T	DEC 31+	83	87	51	64	3.1	NW	16.5*	W	NOV 29		5.7	117	108	140	101	0	48	12	75	0	76	0
COLUMBUS	23.9	10.7	17.3	38.3	JUN 14	- 16.1	JAN 24	1486	994	61	JAN 19-20	T	T	DEC 31+		84	50	59	3.5		15.6*	NW	NOV 29+		5.5	134	89	142	88	0	45	23	73	2	73	0
MACON	24.3	11.2	17.8	38.9	JUN 14	- 14.4	JAN 24	1400	1187	78	JAN 19-20	13	13	DEC 31	77	84	48	55	3.4	NW	17.0	NW	JUL 6	66	5.3	131	101	133	94	0	42	23	89	0	63	0
ROME	21.9	7.3	14.7	36.1	JUN 10	- 20.6	JAN 24	2072	1572	161	SEP 28	188	208	DEC 31-1		84	49								5.1	141	104	120	111	1	57	34	44	3	102	1
SAVANNAH	24.2	12.2	18.2	36.7	AUG 7+	- 7.2	JAN 25	1229	1291	103	JUN 26-27	0	0		83	86	53	69	4.3	NE	17.9	N	APR 12+	68	5.8	111	102	152	98	0	00	30	75	0	44	0
THOMASVILLE U	24.7	13.5	19.1	36.7	AUG 26	- 10.6	JAN 24	1056	1298	92	SEP 29	0	0																108	0	65	15	82	0	27	0
HAWAII																																		
HILO	27.7	18.8	23.3	31.7	AUG 20+	13.9	JAN 15	0	3169	227	APR 14-15	0	0		86	80	65	83	3.9	SW	20.6	ENE	FEB 1	38	7.0	48	135	182	261	0	8	0	0	0	0	0
HONOLULU	28.7	21.0	24.8	32.8	SEP 24+	13.3	JAN 14	0	963	171	JAN 6-7	0	0		75	73	63	70	4.5	ENE	24.1	E	JAN 7	64	5.6	105	143	117	100	0	14	0	11	0	0	0
HONOLULU U	26.8	21.5	24.2	30.0	AUG 20	16.1	JAN 8	0	1156	182	JAN 6-7	0	0																133	0	0	0	0	0	0	0
KAHULUI	28.7	19.6	24.1	32.8	OCT 2+	12.2	JAN 1	0	510	66	JAN 7	0	0		81	78	63	77	7.6	ENE	23.2*	SSW	JAN 16	73	5.1	127	149	89	94	0	9	0	4	0	0	0
LIHUE	28.1	20.6	24.3	30.6	OCT 4+	12.8	FEB 12	0	1046	112	JAN 6-7	0	0		80	78	65	77	5.2	NE	18.8	E	APR 15		6.3	61	157	147	184	0	17	0	0	0	0	0
IDAHO																																		
BOISE	17.7	5.1	11.4	40.0	AUG 13	- 21.7	JAN 12	2974	337	22	JAN 30-31	475	122	JAN 30	68	53	42	58	3.4	SE	25.0	SE	AUG 9	63	6.0	111	84	170	103	6	19	25	51	28	110	3
IDAHO FALLS 42NW R	14.4	- 2.6	5.9	36.1	AUG 14+	- 41.7	JAN 12	4576	396	45	MAY 23	0	0						2.9										77	0	0	0	27	54	194	40
IDAHO FALLS 46W R	14.2	- 1.7	6.3	34.4	AUG 14	- 37.2	JAN 12	4473	366	37	APR 26-27	986	132	DEC 8-9					2.9	SW	15.6A	SW	MAY 1+						82	15	11	17	13	52	188	33
LEWISTON	17.4	5.5	11.4	37.2	AUG 11+	- 23.9	JAN 11	2884	260	21	JUN 4-5	422	122	JAN 30-31	74	59	47								6.8	87	70	208	107	7	14	30	40	23	92	3
POCATELLO	15.7	1.7	8.7	35.6	AUG 14+	- 30.0	JAN 12	3702	410	29	APR 26-27	1102	127	DEC 20-21	74	55	45	63	3.8	WSW	25.5	SW	APR 14+	62	6.2	103	94	168	110	16	34	18	26	34	153	15
ILLINOIS																																		
CAIRO U	20.2	9.6	14.9	37.8	JUN 9	- 20.6	JAN 24	2291	757	56	AUG 12-13	302	152	DEC 22-23		78	54		3.6	S	18.3	SW	APR 29	70	5.3	129	112	124	84	4	40	10	50	29	79	2
CHICAGO MIDWAY	15.3	4.8	10.1	37.2	JUL 1	- 27.8	JAN 23	3567	712	65	APR 29-30	1158	224	JAN 19	71	76	55	59	4.6	SW	21.9	N	JUN 8	55	5.9	88	135	142	96	13	36	12	21	67	117	33
MOLINE	15.4	3.3	9.4	37.2	JUL 1	- 32.2	JAN 28	3768	782	137	JUL 18-19	953	104	DEC 11	78	81	58	61	4.2	SSW	26.4	NW	JUL 19	60	5.9	108	111	146	97	12	35	17	28	68	127	42
PEORIA	15.5	3.6	9.6	36.1	JUL 1	- 28.9	JAN 28	3653	652	67	APR 29-30	500	79	FEB 23-24	75	81	58	60	4.2	S	18.3	NW	JUL 19	62	5.8	108	111	146	81	6	39	22	24	66	129	38
ROCKFORD	14.4	2.7	8.6	36.7	JUL 1	- 30.0	JAN 23	3944	780	77	JUL 18-19	1029	119	DEC 11-12+	77	81	57	61	4.2	SSW	20.6*	NNW	JUN 7		5.9	106	109	150	103	16	45	28	14	70	137	45
SPRINGFIELD	17.1	4.7	10.9	37.2	JUN 9+	- 30.0	FEB 26	3273	734	68	JUL 5-6	572	196	FEB 23	73	77	57	60			21.9	NW	JUN 10+			121	114	130	90	5	41	21	26	57	120	30

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1963

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 am EST	7:00 am EST	1:00 pm EST	7:00 pm EST	Wind: Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0–0.3	Partly cloudy, 0.4–0.7	Cloudy, 0.8–1.0	Precipitation 25mm or more	Snow, Sleet 25.4mm or more	Thunderstorms	Heavy fog	Max. temp.: 32.2°C and above	0°C and below	Min. temp.: 0°C and below	–17.8°C and below
INDIANA	°C	°C	°C	°C		°C		Base 18.3°C	Mm	Mm		Mm	Mm		%	%	%	%	M.p.s.		M.p.s.			%	Tenths											
EVANSVILLE	19.6	5.2	12.4	37.2	AUG 3	– 27.8	JAN 28	2793	708	58	MAR 16	310	178	DEC 22–23	78	79	53	58	3.0	NW	21.9	NW	AUG 28+	67	5.5	120	111	134	90	4	43	19	54	35	113	13
FORT WAYNE	15.4	3.2	9.3	35.6	JUL 2	– 27.8	FEB 27+	3628	675	67	APR 17–18	803	147	FEB 23–24	77	80	58	62	4.1	WSW	21.0	NE	APR 17	59	6.0	96	123	146	114	10	40	22	11	65	136	32
INDIANAPOLIS	16.1	3.9	10.0	34.4	AUG 3	– 27.8	JAN 28	3393	833	97	JUN 7	762	140	MAR 1	78	83	59	63	3.7	WSW	17.9*	N	AUG 9+	65	5.9	95	136	134	99	13	37	31	14	56	129	31
SOUTH BEND	14.4	3.2	8.8	34.4	JUN 30	– 27.2	JAN 23	3780	639	48	JUL 13–14	2062	127	DEC 19–20+	76	79	58	63	4.4	SW	17.9*	NNW	JUL 19		6.3	78	122	165	131	28	42	31	8	70	130	29
IOWA																																				
BURLINGTON	16.2	4.5	10.4	37.2	AUG 2	– 27.8	JAN 23	3476	657	56	JUL 12–13	861	112	JAN 19	75	81	58	60	4.6	SSW	21.5	NW	MAR 20	66	5.8	111	102	152	105	11	38	18	27	61	121	36
DES MOINES	14.8	4.1	9.4	36.1	AUG 2+	– 30.0	JAN 23	3766	719	75	AUG 5–6	919	135	JAN 11–12	78	83	63	63	4.3	SSE	26.8	NE	JUN 28	56	6.0	111	100	154	101	15	46	17	15	68	131	41
DUBUQUE	13.5	2.3	7.9	36.7	JUL 1	– 31.1	JAN 23	4132	900	97	JUL 18–19	897	150	JAN 11–12		79	57	61							6.2	97	96	172	98	14	43	25	9	75	141	48
SIOUX CITY	15.8	3.8	9.8	35.6	JUN 8	– 27.8	JAN 27	3683	585	80	JUN 1–2	747	185	JAN 10–11	76	82	61	60	4.4	SSE	22.8	NW	DEC 8	59	6.1	102	101	162	105	12	46	10	27	62	142	39
WATERLOO	14.3	2.1	8.2	36.7	JUN 7	– 33.3	JAN 15	4117	829	110	JUL 18–19	772	203	MAR 5	79	84	63	64	4.4	NW	24.1*	NE	JUL 19		6.1	98	104	163	104	8	46	28	20	71	145	49
KANSAS																																				
CONCORDIA	19.2	6.0	12.6	39.4	AUG 5+	– 25.0	JAN 27	2959	591	55	AUG 17–18	356	97	JAN 18–19	73	81	55	54	5.5	SSE	28.2	SW	MAR 16	66	5.0	146	100	119	91	5	72	17	66	40	121	19
DODGE CITY	21.3	6.4	13.9	39.4	JUL 23	– 24.4	JAN 12	2611	329	30	MAY 28–29	196	135	DEC 21	66	74	45	43	5.7	SSE	25.5	S	APR 2	74	4.7	157	94	114	67	1	64	12	85	28	122	14
GOODLAND	19.9	3.3	11.6	41.7	JUN 29	– 28.3	JAN 12	3148	412	63	SEP 7–8	1041	274	MAR 12	77	47	44	66	6.0	S	23.2*	NNW	DEC 7+		4.5	169	104	92	65	15	50	22	73	32	155	22
TOPEKA	19.6	6.6	13.1	40.0	AUG 27	– 22.8	JAN 23	2846	484	71	JUL 12–13	292	76	JAN 10–11	74	81	55	53	5.4	S	32.2	N	MAY 15	64	5.7	119	101	145	76	5	55	13	63	38	120	20
WICHITA	20.6	8.2	14.4	40.0	AUG 6+	– 21.7	JAN 12	2541	714	119	MAY 25–26	218	107	DEC 21–22	70	78	55	53	5.2	S	24.1	NW	DEC 8		5.2	133	103	129	73	3	68	12	75	33	111	10
KENTUCKY																																				
LEXINGTON	17.8	6.3	12.1	32.8	JUN 10	– 29.4	JAN 24	2769	841	54	JUL 19–20	615	137	DEC 22–23	75	80	55	60	3.6	SSW	20.6*	NW	APR 22+		5.5	112	128	125	105	9	46	25	3	35	107	8
LOUISVILLE	18.8	6.3	12.6	35.0	AUG 3	– 28.9	JAN 24	2674	976	69	MAR 16	427	117	JAN 23	76	81	56	59	3.2	S	19.2	N	JUN 10	59	5.8	104	119	142	106	4	46	16	13	32	103	9
LOUISIANA																																				
ALEXANDRIA	25.2	11.0	18.1	37.8	AUG 27	– 11.7	JAN 24	1420	839	79	MAY 19	10	10	DEC 22	88	91	54	63	2.6	SSW	14.8	N	AUG 30		5.5	119	120	126	91	0	69	31	106	5	73	0
BATON ROUGE	26.2	13.4	19.8	37.8	JUN 15+	– 11.1	JAN 24	1059	1065	64	JUL 22–23	T	T	DEC 23+	82	87	54	60	3.4	S	13.0	WNW	AUG 5+		5.6	113	119	133	87	0	67	40	127	2	37	0
LAKE CHARLES	25.1	14.3	19.7	35.6	AUG 13	– 8.3	JAN 24	1047	1005	100	SEP 16–17	T	T	DEC 23+	86	89	58	68	3.9	S	14.3*	N	FEB 3+		5.7	98	136	131	71	0	74	51	79	2	29	0
NEW ORLEANS AUDUBON	25.4	16.1	20.8	35.0	AUG 26+	– 8.3	JAN 24	868	1390	102	NOV 9	+114	+114	DEC 31	82	85	63	68	1.9	S	11.6*	NE	FEB 11		+5.6	+104	+136	+125	99	+1	+75	+18	79	2	19	0
SHREVEPORT	25.3	12.4	18.9	39.4	AUG 27+	– 12.8	DEC 23+	1399	763	102	NOV 21–22	132	76	DEC 22	74	85	53	54	4.3	S	16.5	WSW	AUG 13+		5.2	139	105	121	83	2	53	20	119	8	54	0
MAINE																																				
CARIBOU	8.9	– 2.4	3.3	33.9	JUL 26+	– 31.7	FEB 4+	5524	999	43	NOV 7–8	3317	310	NOV 12–13		83	63	74							6.9	66	112	187	152	26	18	37	6	201	194	58
PORTLAND	12.9	.4	6.7	34.4	JUL 28+	– 29.4	DEC 31	4328	980	70	NOV 7–8	2093	267	FEB 19–20	82	79	57	71	4.0	S	21.9	W	APR 20	58	6.1	101	106	158	121	21	18	49	8	61	167	27
MARYLAND																																				
BALTIMORE	17.9	5.7	11.8	36.7	JUN 27	– 21.7	JAN 29	2868	1005	85	JUN 29–30	439	203	DEC 23	74	76	51	61	4.0	W	25.0	NW	APR 23	67	5.0	152	96	117	97	4	19	29	33	29	111	1
BALTIMORE U	18.3	9.0	13.7	36.7	JUL 27+	– 15.6	JAN 24	2458	866	71	NOV 6–7	0	0																89	0	0	0	36	23	76	0
MASSACHUSETTS																																				
BLUE HILL OBS R	14.1	3.8	8.9	36.1	JUL 26	– 21.7	FEB 8	3654	1057	86	NOV 29–30	1506	208	MAR 20–21	80	79	56	68	6.4	SSW	30.0	S	NOV 30	59					126	17	0	0	12	56	132	5
BOSTON	15.1	6.0	10.6	36.7	JUL 2+	– 19.4	FEB 8	3197	885	65	NOV 29–30	1077	221	MAR 1–2	70	70	53	61	6.3	WNW	23.2	NW	APR 5	63	5.8	106	109	150	113	12	19	21	16	42	108	1
NANTUCKET	13.1	5.8	9.4	31.1	JUN 26	– 15.0	FEB 8	3306	1251	72	SEP 15–16	907	384	DEC 18–19	83	79	67	79	6.0	WSW	29.1	SW	NOV 30+	58	6.4	100	83	182	133	9	23	93	0	26	104	0
PITTSFIELD	12.9	.4	7.9	33.3	JUL 2	– 27.8	FEB 8	4323	795	46	SEP 29	2459	295	JAN 26–27															133	27	0	0	3	60	171	25
WORCESTER	13.3	2.8	7.9	32.8	JUL 27+	– 23.3	FEB 8	3966	993	58	NOV 7–8	1689	305	FEB 19–20	76	75	54	66	4.4	W	15.6*	NW	APR 4		5.7	111	105	149	121	18	24	73	7	62	144	13

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
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State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Snow, Sleet: Date (s)	Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 am EST	7:00 am EST	1:00 pm EST	7:00 pm EST	Wind: Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-0.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation 25mm or more	Snow, Sleet 25.4mm or more	Thunderstorms	Heavy fog	Max temp: 32.2 °C and above	0 °C and below	Min. temp: 0 °C and below	-17.8 °C and below
MICHIGAN	°C.	°C.	°C.	°C		°C		Base 18.3 °C	Mm.	Mm.		Mm	Mm.		%	%	%	%	M.p.s.		M.p.s.			%	Tenths											
ALPENA	11.8	- 1.7	5.1	35.6	JUL 1	- 33.3	JAN 15	4906	717	55	MAY 7-8	1966	231	MAR 5-6		80	57	67	3.1	SW	19.2	W	APR 3	63	6.3	94	105	166	132	20	31	10	6	90	186	51
DETROIT	14.7	4.6	9.6	34.4	JUL 18+	- 25.0	JAN 24	3563	520	52	JUN 9	726	112	DEC 11-12	72	75	54	59	4.4	SW	26.8	NW	MAY 4	55	6.1	95	109	161	113	10	26	12	22	65	117	7
DETROIT M WAYNE CO	14.3	2.1	8.2	34.4	JUL 1+	- 25.0	JAN 24	3907	534	41	JUN 9	742	104	DEC 11-12	82	84	59	65	3.4	WSW					6.1	98	114	153	112	10	26	19	16	65	138	20
DETROIT WILLOW RUN	14.4	2.9	8.7	35.6	JUL 2	- 25.0	JAN 24+	3803	486	43	MAY 9-10	767	109	DEC 11-12	81	84	57	62	4.6	SW	20.6*	SSW	JUN 10+		6.1	94	116	155	101	11	26	22	21	65	129	13
FLINT	13.6	1.5	7.6	36.1	JUL 1	- 25.6	JAN 15	4113	459	40	MAY 9-10	953	97	DEC 11-12	81	83	57	65	4.1	SW	23.2*	WNW	JUN 10		6.2	89	114	162	104	15	26	19	11	72	141	34
GRAND RAPIDS	13.9	2.8	8.4	35.6	JUL 1+	- 22.8	FEB 26	3887	768	49	JUN 8-9	2098	274	JAN 13-14	80	83	58	63	4.3	W	20.1	SW	APR 3	55	6.3	91	102	172	128	20	34	20	11	71	138	19
LANSING	13.9	1.7	7.8	34.4	JUL 1	- 26.1	JAN 15	4059	619	110	JUN 6	851	140	JAN 19-20	77	78	56	63	4.6	WNW	28.2	SE	JUN 9	57	6.1	97	109	159	113	13	27	22	9	69	153	31
MARQUETTE U	10.4	1.1	5.8	38.3	JUN 30	- 29.4	JAN 23	4742	614	28	JUL 17	2070	307	MAR 19-20		74	62	66	3.7	W#	20.6	SW	APR 3	58	6.8	75	91	199	140	24	22	13	8	94	151	36
MUSKEGON	13.2	3.1	8.2	33.9	JUL 1	- 24.4	FEB 26	3886	786	59	APR 29-30	4526	511	DEC 17-18	80	82	64	68	4.8	SSW	17.0*	NNW	OCT 2		6.4	92	85	188	138	48	38	26	2	72	130	12
SAULT STE MARIE	9.5	- 1.2	4.2	33.9	JUL 1	- 31.1	JAN 23	5211	649	46	NOV 22-23	2619	213	FEB 1-2	83	85	64	71	4.0	WNW	21.5*	WNW	NOV 23	55	6.8	78	96	191	144	32	17	66	2	100	172	47
MINNESOTA																																				
DULUTH	9.9	- 1.3	4.3	33.3	JUN 30	- 35.0	JAN 23	5196	569	40	AUG 11-12	1397	175	DEC 8	76	80	61	62	4.8	WNW	21.5	SW	APR 16	54	6.7	77	109	179	125	17	30	53	3	95	169	57
INTERNATIONAL FALLS	9.6	- 3.2	3.2	32.2	JUL 23+	- 40.0	JAN 19	5196	631	45	JUL 11-12	996	140	DEC 7-8	79	83	59	61	3.8	S	15.6*	W	MAR 29		6.4	89	101	175	117	14	35	14	2	104	189	69
MINNEAPOLIS	12.8	.9	6.9	37.2	JUN 30	- 35.6	JAN 15	4509	497	41	MAY 27	846	178	MAR 18-19	77	81	60	60	4.4	SSE	20.1	SW	APR 3	59	6.3	99	96	170	110	10	43	12	16	81	158	50
ROCHESTER	12.1	1.0	6.6	35.0	JUN 30	- 34.4	JAN 15	4553	607	46	NOV 21-22	1041	140	MAR 3-4	81	84	65	67	5.6	S	17.0*	SE	JUN 8		6.2	95	97	173	119	16	54	35	4	85	156	49
ST CLOUD	12.2	.1	6.2	36.7	JUN 30	- 33.3	JAN 22	4701	680	65	AUG 11-12	937	165	DEC 7-8	80	83	60	61							5.8	93	99	173	117	8	33	18	9	85	163	55
MISSISSIPPI																																				
JACKSON	24.3	11.6	17.9	38.3	JUN 15+	- 15.0	JAN 24	1492	890	105	JUL 8	104	46	DEC 31	78	86	54	58	3.4	N	16.5	W	JUN 16		5.3	130	116	119	95	3	49	17	96	6	60	0
MERIDIAN	24.5	9.9	17.2	39.4	JUN 14	- 15.6	JAN 24	1586	959	86	AUG 20-21	498	381	DEC 1	86	90	53	60	2.9	S	15.6*	NNE	FEB 18		5.5	127	116	122	90	4	58	21	102	5	83	0
VICKSBURG U	23.4	12.8	18.1	36.1	JUN 14+	- 15.0	JAN 24	1423	988	122	AUG 13-14	140	51	DEC 20+					3.5		17.9	W	MAY 28	69	5.3	124	126	115	95	3	58	11	67	8	45	0
MISSOURI																																				
COLUMBIA	18.7	6.7	12.7	36.7	AUG 8+	- 23.3	JAN 23	2876	690	41	AUG 18-19	302	99	DEC 11	73	79	54	56	4.7	SSE	20.6	NW	MAY 15	65	5.4	128	109	128	84	5	46	15	50	47	105	21
KANSAS CITY	19.7	8.5	14.1	38.3	AUG 5+	- 22.8	JAN 23	2659	626	94	JUL 12-13	351	91	JAN 11	64	71	53	50	3.9	S	24.6	SW	APR 2+	70	5.5	122	108	135	85	3	44	7	67	36	97	11
ST JOSEPH	18.7	6.3	12.6	38.3	JUL 5	- 25.0	DEC 23	2996	596	89	MAY 14-15	221	46	DEC 11					4.3	SSE	20.6*	WSW	MAR 16+		5.2	136	105	124	65	5	46	16	62	44	119	22
ST LOUIS	18.4	6.3	12.4	38.9	AUG 3	- 23.9	JAN 23	2908	727	64	NOV 21-22	328	119	DEC 10-11	71	78	53	56	4.5	S	20.1	W	JUN 12	64	5.4	125	114	126	83	4	40	10	44	47	112	13
SPRINGFIELD	20.6	7.4	14.0	37.8	AUG 28+	- 23.3	JAN 24+	2503	706	104	JUN 14-15	188	89	FEB 28	75	81	53	57	4.5	SSE	23.2	SE	SEP 10	70	5.3	126	115	124	87	2	41	14	51	30	106	6
MONTANA																																				
BILLINGS	15.2	2.4	8.8	36.7	JUL 22+	- 32.2	JAN 19	3738	379	25	SEP 1	1796	170	DEC 16	69	53	45	59	5.3	WSW	32.2	W	FEB 1	67	6.0	96	113	156	101	23	36	13	25	41	139	27
GLASGOW	13.4	.6	7.0	39.4	JUL 22	- 33.3	JAN 12	4406	373	45	JUN 5-6	465	81	APR 8	78	57	51	70							6.4	92	97	176	80	7	33	6	18	63	160	41
GREAT FALLS	15.0	1.6	8.3	37.8	JUL 22	- 32.2	JAN 11	3843	304	20	JUN 21	1234	142	APR 1	64	46	40	56	5.6	SW	22.8	SW	DEC 31	59	6.4	92	90	183	94	18	32	11	19	41	141	32
HAVRE	14.7	- .3	7.2	40.0	JUL 22	- 36.1	JAN 11	4308	242	21	JUL 3-4	709	69	FEB 1	74	51			4.1	SW	25.9	SW	FEB 5	63	6.1	116	78	171	81	14	27	5	31	54	165	40
HELENA	14.3	.0	7.2	36.7	JUL 21+	- 33.3	JAN 23	4205	294	20	OCT 5-6	1115	170	DEC 11-12	70	52	44	61	3.6	WNW	18.8	W	APR 15+	58	6.5	88	90	187	107	15	40	7	17	43	164	26
KALISPELL	13.3	- .7	6.3	35.0	AUG 7+	- 32.2	JAN 30	4433	387	28	JUN 28-29	1524	241	JAN 31-01		62			2.5						6.7	89	69	207	126	20	29	26	11	50	187	21
MILES CITY	15.6	1.9	8.8	39.4	AUG 7	- 33.9	JAN 19	3902	405	41	SEP 10	795	79	APR 16	75	52	47	65	4.1	SE	20.6*	W	FEB 1						85	14	41	9	42	53	152	35
MISSOULA	13.4	- .4	6.6	36.1	AUG 9	- 32.8	JAN 11	4369	378	20	AUG 9-10	1979	203	DEC 16-17	80	64	51	71	2.8	NNW	21.0	NW	FEB 4	54	6.8	75	82	208	121	23	33	35	21	58	174	19
NEBRASKA																																				
GRAND ISLAND	17.2	3.2	10.2	40.6	JUL 23+	- 33.3	JAN 27	3526	485	57	MAY 14-15	399	89	JAN 10-11	77	85	56	57	5.0		20.6*	NW	DEC 8		5.6	126	93	146	79	5	59	16	43	53	146	28

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 a.m. EST	7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind: Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-1.3	Partly cloudy, 0.4-0.7	Cloudy, 0.8-1.0	Precipitation 25mm or more	Snow, Sleet 25.4mm or more	Thunderstorms	Heavy fog	Max. temp: 32.2 °C and above	0 °C and below	Min temp: 0 °C and below	-17.8 °C and below
NEBRASKA	°C	°C	°C	°C		°C		Base 18.3 °C	Mm	Mm.		Mm	Mm		%	%	%	%	M.p.s		M.p.s.			%	Tenths											
LINCOLN U	17.7	6.1	11.9	39.4	AUG 2	- 26.1	JAN 23	3127	597	137	JUN 23-24	607	188	MAR 4-5					4.8	S	25.0	NW	DEC 8+	63	5.8	101	129	135	90	8	46	7	49	49	121	25
NORFOLK	16.4	3.6	10.0	37.8	JUN 29	- 30.6	JAN 27	3611	481	33	AUG 27	450	74	JAN 10-11		78	53	53							5.8	100	119	146	91	6	56	9	33	54	141	33
NORTH PLATTE	17.9	2.6	10.3	40.6	AUG 1+	- 30.6	JAN 23	3475	491	64	SEP 15-16	625	196	MAR 3	75	84	52	50	4.9	SSE	23.2	NW	APR 27	69	5.4	128	108	129	92	7	63	20	48	43	101	24
OMAHA	17.1	5.2	11.2	38.3	JUL 1	- 27.2	JAN 23	3322	637	53	AUG 27-28	947	279	MAR 4-5	73	79	56	55	4.6	SSE	21.9	NW	DEC 8	63	5.7	109	115	141	101	11	41	13	46	55	125	31
SCOTTSBLUFF	18.1	2.3	10.2	38.3	JUL 25	- 35.6	JAN 19	3425	383	40	JUN 14-15	754	155	JAN 17-18	78	48	43	69	5.2	NW	27.7*	WNW	MAR 16		5.4	112	125	128	81	11	46	11	51	37	154	18
VALENTINE	17.2	1.9	9.6	40.6	JUN 28	- 33.4	JAN 19	3709	453	39	AUG 26-27	592	203	MAR 18	84	53	51	79	4.8	N	29.1	S	JUN 21	67	5.6	116	117	132	85	6	57	5	43	47	161	27
NEVADA																																						
ELKO	16.6	- 1.4	7.6	35.0	AUG 13	- 32.2	JAN 12	3971	382	29	OCT 11-12	1242	191	JAN 29-30		52	39		2.9	SW	19.7*	S	MAY 28		5.6	124	88	153	104	15	25	5	30	12	184	17
ELY	16.2	- 1.8	7.2	32.8	AUG 14+	- 31.7	JAN 12	4065	283	38	JUN 9-10	1105	191	MAR 26-27	68	44	37	59	4.1	S	25.5	SW	MAR 28+	78	5.4	123	103	139	87	14	42	4	10	16	194	12
LAS VEGAS	26.2	11.6	18.9	43.3	JUL 23	- 13.3	JAN 13	1376	98	27	SEP 4	T	T	MAR 15	42	27	19	32	4.3	SW	20.6*	S	OCT 4	86	3.6	206	91	68	26	0	16	0	132	2	41	0
RENO	19.2	.1	9.6	35.6	AUG 7	- 20.6	JAN 12	3220	278	48	JAN 1	384	79	NOV 20	76	51	35	61	2.5	WNW	21.9	S	MAR 29	77	5.0	145	96	124	61	6	17	9	35	2	172	6
WINNEMUCCA	18.4	.1	9.2	36.7	AUG 6	- 31.1	JAN 12	3436	276	28	JUN 13-14	462	97	JAN 29-30	69	46	33	57	3.3	S	29.5	W	MAR 14	61	5.6	128	80	157	79	6	27	5	45	9	167	13
NEW HAMPSHIRE																																						
CONCORD	14.4	.5	7.5	37.2	JUL 26	- 28.9	DEC 31	4138	725	61	JUL 8	1560	191	FEB 19-20	83	77	49	61	3.1	NW	19.7	NW	APR 22	59	5.9	105	111	149	118	21	20	35	16	57	173	27
MT WASHINGTON OBS	.3	- 7.4	- 3.6	21.1	JUL 2	- 37.2	FEB 4	7930	2182	114	NOV 7-8	6101	292	DEC 3	88	85	83	86	14.8	W	55.4Y	W	MAR 7	37	7.3	61	96	208	184	62	17	319	0	168	244	72
NEW JERSEY																																						
ATLANTIC CITY	17.4	6.4	11.9	36.7	JUL 19	- 16.1	JAN 29	2754	937	73	NOV 6-7	312	192	DEC 23	77	77	51	66	4.7	WNW	18.3*	W	MAR 6	60	5.5	131	103	131	102	3	24	47	18	24	97	0
NEWARK	16.6	7.1	11.9	37.8	JUL 1	- 18.9	FEB 8	2867	750	53	NOV 6-7	617	188	DEC 23-24	68	71	50	58	4.9	SW	22.4*	NW	MAY 20		5.6	120	110	135	107	8	25	20	20	34	94	1
TRENTON U	16.6	6.6	11.6	36.7	JUN 27	- 18.9	FEB 8	2897	772	60	NOV 6-7	544	173	DEC 23-24					4.6	NNW	18.3	NE	NOV 7+	63	5.5	118	112	135	102	6	32	13	17	32	94	1
NEW MEXICO																																						
ALBUQUERQUE	21.7	6.4	14.1	39.4	JUL 25+	- 21.7	JAN 20	2355	190	25	AUG 16	147	64	MAR 4	58	37	28	46	3.9	N	21.9	NW	MAY 1	80	3.9	191	105	69	56	2	44	2	64	6	118	3
CLAYTON	20.8	4.2	12.5	37.2	JUL 23	- 27.2	JAN 12	2648	327	112	AUG 9-10	196	119	FEB 9-10	66	35	34								4.1	187	87	91	51	1	53	7	46	18	132	10
RATON	19.4	.9	10.2	35.6	JUL 23	- 35.0	JAN 14	3219	271	46	SEP 20-21	307	91	JAN 10-11		33									4.6	151	122	92	72	6	77	6	22	18	156	17
ROSWELL	24.9	5.4	15.2	41.7	JUL 17	- 30.0	JAN 13	2069	160	38	AUG 30-31	262	99	JAN 11-12	68	36			4.0		26.4	NW	JUN 18	81	4.2	182	96	87	52	5	38	5	110	7	123	5
SILVER CITY	22.7	5.6	14.2	37.2	JUN 30	- 16.7	JAN 20	2042	256	53	AUG 3	173	97	FEB 11-12		32	29								3.8	194	93	78	58	2	55	1	39	2	111	0
NEW YORK																																						
ALBANY	13.8	1.9	7.9	36.1	JUL 25+	- 26.7	FEB 23	4014	666	30	SEP 17	2017	272	JAN 26-27	77	77	53	63	3.4	SSE	20.1	W	APR 4	56	6.6	74	115	176	123	24	26	30	16	65	150	20
BINGHAMTON	11.8	2.2	7.1	31.1	JUL 24	- 25.6	FEB 8	4206	824	42	JUN 28	2461	239	JAN 26-27	79	83	64	68	4.4	NNW	18.8	W	NOV 30+	55	7.0	56	107	202	158	33	35	51	0	73	146	17
BINGHAMTON U	14.6	3.7	9.2	33.9	JUL 26+	- 25.0	JAN 29	3565	752	46	JUL 7	1547	147	MAR 1															141	19	0	0	10	55	119	11
BUFFALO	12.8	2.8	7.8	34.4	JUN 30	- 23.9	JAN 24	3972	843	99	AUG 7	2088	198	JAN 14	76	77	61	69	5.0	SW	25.3	SW	MAR 6	55	6.9	72	97	196	157	26	25	11	6	68	138	8
NEW YORK CENT PK	16.6	7.4	12.1	36.7	JUL 27+	- 18.9	FEB 8	2769	871	97	NOV 6-7	587	157	DEC 23-24	66	70	49	57	4.0	WW	17.9	NE	NOV 7	61	4.9	149	109	107	115	9	23	6	16	36	78	1
NEW YORK LAGUARDIA	15.8	7.9	11.8	36.1	JUL 1	- 18.9	FEB 8	2837	807	93	NOV 6-7	607	183	DEC 23	66	68	52	58	5.3	NW	26.4	W	APR 4		5.7	134	135	126	109	8	30	17	12	34	80	1
ROCHESTER	13.6	2.4	8.0	35.0	JUL 2	- 25.3	JAN 24	3938	612	45	AUG 13-14	2198	231	JAN 27	80	81	58	67	4.9	WSW	21.9	W	SEP 12+	58	6.4	91	102	173	138	27	23	9	9	66	137	15
SYRACUSE	13.5	2.5	8.0	35.6	JUL 25	- 25.0	FEB 8	4951	706	48	JUN 20	2577	262	FEB 15	77	76	56	65	4.6	W	21.1	NW	APR 4	58	6.5	84	109	176	160	24	29	7	12	68	140	15
NORTH CAROLINA																																						
ASHEVILLE	18.8	8.5	12.7	32.6	AUG 7+	- 21.7	JAN 24	2412	931	83	MAR 11-12	371	150	DEC 1		83	58	62	3.4	NW	17.4	NW	JAN 23	63	5.1	139	108	118	102	3	32	45	6	11	96	1
CAPE HATTERAS S	17.7	11.3	15.5	32.7	JUN 7	- 7.4	FEB 24	1642	1478	142	APR 6-7	33	33	FEB 27	82	81	66	78	5.1	NNE				63	6.3	84	105	166	131	1	48	17	2	2	48	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1953

State and Station	Temperature: Averages: Daily maximum	Temperature: Averages: Daily minimum	Temperature: Averages: Annual	Temperature: Extremes: Highest	Temperature: Extremes: Date	Temperature: Extremes: Lowest	Temperature: Extremes: Date	Heating degree days	Precipitation: Total	Precipitation: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Precipitation: Snow, Sleet: Total	Precipitation: Snow, Sleet: Greatest in 24 hours	Precipitation: Snow, Sleet: Date (s)	Relative humidity: 1:00 am EST	Relative humidity: 7:00am EST	Relative humidity: 1:00pm EST	Relative humidity: 7:00pm EST	Wind: Average speed	Wind: Prevailing direction	Wind: Fastest mile (1.6 kilometers): Speed	Wind: Fastest mile (1.6 kilometers): Direction	Wind: Fastest mile (1.6 kilometers): Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0.0-0.3	Number of days: Sunrise to sunset: Partly cloudy, 0.4-0.7	Number of days: Sunrise to sunset: Cloudy, 0.8-1.0	Number of days: Precipitation 25mm or more	Number of days: Snow, Sleet 25.4mm or more	Number of days: Thunderstorms	Number of days: Heavy fog	Number of days: Max temp: 32.2°C and above	Number of days: Max temp: 0°C and below	Number of days: Min temp: 0°C and below	Number of days: Min temp: -17.8°C and below
NORTH CAROLINA	°C	°C	°C	°C		°C		Base 18.3°C	Mm	Mm		Mm	Mm		%	%	%	%	M.p.s.		M.p.s.			%	Tenths										
CHARLOTTE	21.6	9.1	15.3	37.8	AUG 7	- 13.9	FEB 27+	1948	882	85	SEP 28-29	91	64	FEB 26	73	82	50	57	3.2	NE	14.8	SW	MAR 6	68	5.4	136	97	132	93	2	24	18	52	2	87	0
GREENSBORO	19.6	7.1	13.4	35.0	JUN 10	- 16.1	FEB 27	2319	945	70	SEP 28-29	191	86	FEB 26	77	80	51	61	3.4	SW	17.0	NW	MAR 19	62	5.4	125	108	132	104	4	37	25	18	9	98	0
RALEIGH	20.7	7.7	14.2	36.1	JUL 28	- 13.9	JAN 24	2146	938	119	NOV 5-6	178	175	FEB 26	79	85	49	61	3.4	SW	17.9*	WNW	AUG 13+	61	5.5	124	109	132	105	1	31	30	36	6	90	0
WILMINGTON	22.3	10.7	16.5	35.6	MAY 10+	- 8.3	FEB 27+	1562	1304	126	MAY 20-21	36	20	FEB 26-27	84	84	55	72	3.7	SW	19.2	SW	MAR 6	63	6.0	90	134	141	114	0	50	22	43	1	62	0
WINSTON-SALEM	19.6	8.2	13.9	35.6	JUN 10	- 15.6	JAN 24	2203	1034	67	SEP 28-29	284	94	FEB 26	69	74	50	57	3.7	NE	15.6*	WNW	MAR 6		5.4	134	92	139	106	5	37	23	19	9	87	0
NORTH DAKOTA																																					
BISMARCK	13.6	- .7	6.5	38.3	JUL 25	- 35.0	JAN 27	4575	457	32	JUN 22-23	706	104	DEC 7	74	80	53	50	4.2	WNW	25.0	SW	APR 16	66	6.1	96	107	162	100	9	54	6	20	71	173	50
FARGO	12.4	- .3	6.1	37.2	JUL 25	- 33.3	DEC 21	4825	379	53	AUG 11	541	152	APR 3	74	80	59	58	5.0	SSE	25.5	NW	APR 3	61	6.4	82	104	179	89	6	38	9	18	88	165	59
WILLISTON	13.5	- .7	6.4	37.8	JUL 22	- 35.0	JAN 19	4596	443	128	JUL 9-10	693	145	APR 8-9		81	56	52	4.4	SW	28.2	NW	JUL 5	60	6.2	93	112	160	86	9	28	9	24	71	173	49
OHIO																																					
AKRON	14.4	3.0	8.7	34.4	JUN 27	- 29.4	JAN 24	3721	604	35	SEP 11-12	1671	157	FEB 23-24	75	79	56	63	3.9	WSW	16.5*	WSW	APR 19		6.3	92	105	168	126	20	33	28	8	64	132	19
CINCINNATI OBS	17.8	6.1	11.9	37.2	AUG 3	- 25.6	JAN 24	2867	761	88	MAR 4-5	500	127	JAN 23					2.5	S#	15.2	NW	JUN 10	59				105	6	35	0	21	42	106	10
CLEVELAND	13.9	3.2	8.6	33.9	JUL 2+	- 28.3	JAN 24	3783	473	44	SEP 11-12	1290	137	JAN 22-23	76	80	60	65	4.5	S	25.5	S	AUG 3	59	6.3	91	105	169	135	19	31	12	8	62	129	18
COLUMBUS	16.4	3.7	10.1	36.1	AUG 3	- 26.1	JAN 28+	3377	623	68	MAR 4-5	754	112	JAN 26-27	75	79	55	59	3.8	S	19.7	W	MAR 20	60	6.2	91	130	144	106	12	34	29	21	51	129	18
DAYTON	16.1	4.1	10.1	33.3	AUG 3+	- 28.3	JAN 24	3328	615	67	MAR 4-5	848	231	MAR 1	76	81	56	61	4.3	SSW	23.7	W	JUN 10	58	6.0	92	118	155	103	9	34	34	7	53	119	23
MANSFIELD	14.3	3.0	8.7	32.8	JUL 2+	- 28.9	JAN 24	3762	554	37	MAR 4	1240	180	MAR 1		80	60								6.3	92	108	165	125	14	35	38	4	65	138	24
TOLEDO	14.6	2.1	8.3	35.6	JUL 2+	- 27.2	JAN 24+	3898	560	54	JUN 6-7	909	89	JAN 22	80	82	58	63	3.9	WSW	18.8	SW	JUN 10	58	6.1	93	124	148	125	16	35	23	17	68	142	29
YOUNGSTOWN	13.7	2.3	8.0	32.8	JUN 27	- 27.8	JAN 24	3908	604	35	NOV 29-30	2116	150	NOV 29-30	77	79	58	65	4.4	SW	19.7*	WSW	APR 19		6.4	87	97	181	140	29	28	32	5	69	137	21
OKLAHOMA																																					
OKLAHOMA CITY	22.7	9.6	16.2	40.6	AUG 24	- 19.4	JAN 12	2081	655	54	JUL 27-28	117	36	DEC 21-22	70	78	51	48	5.7	SSE	24.1	W	JUN 16	71	5.1	145	94	126	70	2	46	20	96	20	88	4
TULSA	23.2	9.7	16.4	40.0	AUG 28+	- 19.4	DEC 23	2096	732	192	JUL 27	155	76	DEC 22	70	78	51	50	5.1	SSE	20.1	SE	APR 18	64	5.1	139	105	121	69	3	41	9	111	21	97	5
OREGON																																					
ASTORIA	14.9	6.8	10.8	28.9	SEP 3	- 9.4	JAN 11	2698	1615	61	OCT 21-22	8	8	JAN 30	90	80	73	87	3.8	SE	20.6*	SSW	FEB 4		7.8	48	65	252	193	0	15	38	0	1	40	0
BURNS U	15.6	.8	8.2	35.0	AUG 8	- 23.9	JAN 12	3753	353	24	JAN 30-31	978	150	JAN 29-30	75	59	42	66							5.9	115	84	166	103	13	15	17	11	16	167	6
EUGENE	17.1	6.0	11.6	35.6	SEP 8	- 11.7	JAN 12	2555	1057	64	NOV 7-8	99	71	JAN 29-30		75	61		3.0		21.5*	S	MAR 27		7.1	77	55	233	133	2	10	70	10	4	48	0
MEACHAM	11.7	2.1	6.9	31.7	SEP 28	- 30.6	JAN 11	4213	718	71	NOV 7-8	2809	490	NOV 7-8		59									6.7	87	69	209	156	31	2	15	0	33	157	6
MEDFORD	18.4	4.3	11.3	40.0	SEP 26	- 13.3	JAN 12	2808	479	39	NOV 7-8	46	30	JAN 28-29	88	68	52	77	2.2	WNW	14.3*	SE	MAY 20		6.4	100	75	190	114	1	8	76	41	5	106	0
PENDLETON	17.0	5.6	11.3	36.7	AUG 12+	- 23.9	JAN 11	2854	285	21	NOV 7-8	391	104	JAN 28-29	73	58	50	65	3.9	W	20.6*	W	APR 15		6.1	105	85	175	99	6	8	46	28	26	77	4
PORTLAND	15.8	6.5	11.2	33.9	AUG 8	- 11.7	JAN 11	2662	857	35	MAR 28-29	127	86	JAN 28	86	76	63	80	3.8	ESE	27.3	S	SEP 9	39	7.5	56	71	238	163	2	9	45	3	5	51	0
PORTLAND U	16.9	8.4	12.7	34.4	MAY 20	- 10.6	JAN 11	2211	1108	56	MAR 28-29	170	102	JAN 28															155	2	0	0	7	6	21	0
ROSEBURG	18.2	5.8	12.0	37.2	SEP 8	- 13.9	JAN 12	2426	808	52	NOV 7-8	51	25	JAN 29		75	57		2.0	N	17.9	S	MAR 27	50	7.1	65	88	212	145	2	4	76	19	1	51	0
SALEM	16.6	5.2	10.9	35.6	SEP 8	- 11.1	JAN 12+	2742	956	53	MAR 28-29	168	94	JAN 28	90	76	63	84	3.2	S	17.4*	S	MAR 27		7.1	76	64	225	157	2	11	44	9	4	69	0
SEXTON SUMMIT R	13.0	4.3	8.7	30.6	SEP 26+	- 11.1	JAN 11	3574	1285	83	JAN 1	1593	234	APR 14-15		72	62		5.5	S					6.2	113	70	182	139	21	2	134	0	15	92	0
PACIFIC AREA																																					
CANTON ISLAND	31.8	25.7	28.8	33.9	NOV 17	22.8	SEP 16+	0	712	96	DEC 26-27	0	0		78	79	65	75	5.0	NE	15.6*	WNW	DEC 27		5.8	110	137	118	103	0	0	0	174	0	0	0
ENIWETOK	30.7	25.4	28.1	32.8	OCT 2+	22.2	DEC 23	0	1871	70	OCT 26-27	0	0		81	81	72	75	5.6										212	0	15	0	46	0	0	0
TAGUAC GUAM R	29.3	22.7	26.1	31.1	DEC 28+	16.7	MAR 14	0	3510	155	DEC 25	0	0						3.2	E#	28.6	SW	APR 30						284	0	36	2	0	0	0	0

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1963

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 am EST	7:00 am EST	1:00 pm EST	7:00 pm EST	Wind: Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0–0.3	Partly cloudy, 0.4–0.7	Cloudy, 0.8–1.0	Precipitation 25mm or more	Snow, Sleet 25.4mm or more	Thunderstorms	Heavy fog	Max temp: 32.2°C and above	0°C and below	Min temp: 0°C and below	–17.8°C and below
PACIFIC AREA	°C	°C	°C	°C		°C		Base 18.3°C	Mm	Mm		Mm	Mm		%	%	%	%	Mps		Mps			%	Tenths										
KOROR R	30.7	24.3	27.5	32.8	NOV 15+	21.7	JAN 21	0	3430	115	JAN 5–6	0	0		93	83	79	90	3.8	W	13.0	NW	SEP 30		9.9	0	7	358	239	0	46	0	39	0	0	0
KWAJALEIN	30.5	24.9	27.7	32.8	AUG 21+	20.6	DEC 19	0	2962	170	DEC 21–22	0	0		84	83	76	80	5.5	ENE	17.4	SE	DEC 21		7.6	40	102	224	234	0	17	0	14	0	0	0
MAJURO	29.9	25.2	27.6	31.7	OCT 9+	21.1	MAR 12	0	3341	100	JAN 2–3	0	0		82	83	76	79	4.4	E	15.6	E	DEC 19+	54	8.2	16	96	253	251	0	20	0	0	0	0	0
PONAPE R	30.6	23.3	26.9	32.8	SEP 25+	20.6	APR 6+	0	4444	114	JAN 14–15	0	0		92	79	79	90	2.1	NE	11.2	E	FEB 2		9.1	1	47	317	297	0	35	0	34	0	0	0
TRUK MOEN ISLAND	30.2	24.1	27.2	32.2	SEP 6+	21.1	FEB 24	0	3304	125	AUG 24–25	0	0		86	77	77	85	2.8	NNE	13.9	SW	AUG 29		9.1	1	47	317	245	0	28	0	3	0	0	0
WAKE ISLAND	29.6	24.2	26.9	32.2	AUG 28+	20.0	JAN 12	0	765	64	NOV 6–7	0	0		78	78	69	72	5.3	ENE	14.8*	ENE	MAR 8		5.8	91	169	105	130	0	3	0	4	0	0	0
YAP R	30.3	24.2	27.3	32.8	SEP 17+	22.2	DEC 28+	0	3580	137	AUG 30–31	0	0		91	82	80	89	3.5	NE	15.2	NE	JAN 29	55	9.7	0	15	350	256	0	29	0	17	0	0	0
PENNSYLVANIA																																			
ALLENTOWN	15.8	3.9	9.9	36.1	JUL 1	– 22.8	JAN 29	3379	890	78	SEP 12–13	1029	188	JAN 26–27	77	79	53	62	4.3	WNW	26.8*	WNW	APR 4		5.6	118	109	138	104	10	27	26	15	44	124	6
ERIE	13.3	3.9	8.6	34.4	JUL 2	– 26.1	JAN 24	3752	714	36	NOV 11–12	2657	201	DEC 14–15	75	75	62	68	5.9	S	19.2*	SSE	FEB 2		6.4	99	86	180	151	32	30	15	3	62	125	12
HARRISBURG	16.8	5.1	10.9	37.2	JUN 27	– 20.0	JAN 29	3104	764	58	NOV 6–7	1148	257	DEC 23	71	74	51	52	3.9	WNW	21.5	W	JUN 10	63	5.9	113	105	147	110	10	26	19	23	35	115	3
PHILADELPHIA	16.8	5.3	11.1	36.1	JUL 1+	– 20.6	JAN 29	3048	888	81	SEP 3–4	483	132	DEC 23	76	75	53	63	4.1	WSW	18.8	NW	MAR 6+	61	5.8	110	108	147	102	6	27	24	19	30	109	2
PITTSBURGH	15.0	1.0	9.0	33.9	JUN 27	– 27.8	JAN 24	3609	680	49	MAR 4–5	1572	152	JAN 26–27	76	80	55	61	3.8	WSW	20.6*	WNW	AUG 3	58	6.7	65	113	187	132	23	34	20	8	58	146	16
READING U	16.8	6.4	11.7	36.7	JUL 1	– 10.9	JAN 24	2892	617	62	NOV 6–7	660	173	DEC 23					4.5	NW	25.9	W	APR 4	57	5.5	125	115	125	102	8	28	10	18	33	96	1
SCRANTON	14.6	3.7	9.1	33.3	JUL 2+	– 22.8	FEB 8	3577	666	57	NOV 6–7	1440	178	JAN 23	73	78	56	60	3.5	SW	18.8	W	APR 4	57	6.5	84	105	176	118	15	28	28	9	56	120	11
WILLIAMSPORT	15.6	3.2	9.4	35.0	JUL 26+	– 24.4	JAN 29	3502	789	59	NOV 29–30	1300	183	MAR 1–2	77	80	52	59	3.8	W	17.9*	W	APR 4		6.5	74	125	166	130	14	36	38	13	48	128	12
RHODE ISLAND																																			
BLOCK ISLAND	12.8	5.9	9.4	31.1	JUL 27	– 17.2	FEB 8	3368	920	79	AUG 13–14	551	94	DEC 18–19		72	69								6.6	92	123	150	103	7	18	90	0	35	99	0
PROVIDENCE	15.0	4.7	9.9	35.0	JUL 26	– 18.3	DEC 31	3339	1003	77	NOV 29–30	1006	140	DEC 2–3	76	76	53	65	5.0	WNW	21.0*	S	NOV 30	60	5.7	115	112	138	112	13	26	30	12	38	120	2
SOUTH CAROLINA																																			
CHARLESTON	24.1	11.8	17.9	36.7	AUG 4+	– 8.9	JAN 25	1298	1396	135	JUN 22–23	8	8	FEB 16–17	84	84	52	70	3.8	NNE	27.7Y	SW	FEB 19	62	5.7	118	104	143	114	6	54	24	63	3	48	0
COLUMBIA	23.6	10.1	16.9	38.9	JUN 13	– 10.-	JAN 25+	1598	1070	66	SEP 28–29	T	T	DEC 23+	78	83	47	58	3.2	SW	15.6*	SW	MAR 6	64	5.2	136	102	127	93	0	28	16	86	6	70	0
FLORENCE	22.9	10.7	16.6	38.3	JUN 11	– 8.9	FEB 27+	1609	849	65	SEP 28–29	25	25	FEB 26	78	82	49	61	3.7	NE	13.0*	SSW	MAR 6		5.4	131	97	137	102	1	42	27	68	0	63	0
GNVLE SPARTANBURG	21.7	9.6	15.7	36.1	JUN 10	– 12.8	JAN 24	1832	1196	113	MAR 5–6	122	53	FEB 26	73	77	49	58	3.4	NE	21.0	NE	DEC 31	65	5.2	137	101	127	99	2	35	29	45	1	75	0
SOUTH DAKOTA																																			
HURON	15.4	1.1	8.3	38.9	OCT 5	– 36.1	JAN 15	4142	485	42	JUL 26–27	790	150	MAR 18–19	78	83	59	59	5.4	SSE	26.4	NW	DEC 8	60	6.2	97	103	165	104	10	30	22	28	62	162	49
RAPID CITY	16.6	2.3	9.4	38.3	JUL 25	– 32.2	JAN 19	3666	502	102	JUN 14–15	1290	373	MAR 16	72	50	47	66	4.8	NNW	23.2	W	APR 16	61	5.6	117	114	134	120	15	46	10	44	44	146	32
SIOUX FALLS	15.1	2.0	8.6	37.2	JUN 29	– 36.0	JAN 23	4032	533	68	JUL 26–27	876	213	DEC 7–8	77	83	59	59	4.7	S	17.9*	WNW	JUN 26		6.1	101	109	155	87	14	49	20	28	63	150	42
TENNESSEE																																			
BRISTOL	18.8	6.2	12.5	32.2	SEP 21+	– 22.2	JAN 24	2530	980	79	MAR 11–12	813	191	DEC 22–23	77	82	54	59	2.1	WSW	17.9*	WNW	JAN 11		5.9	104	116	145	118	10	40	48	2	24	102	2
CHATTANOOGA	21.4	8.4	14.9	35.6	AUG 7	– 21.7	JAN 24	2068	1453	137	MAR 11–12	318	226	DEC 31–1	82	87	52	58	3.2	S	18.3	NW	NOV 30	63	5.5	130	93	142	107	5	44	43	43	8	90	2
KNOXVILLE	19.7	7.8	13.7	33.3	AUG 8	– 21.1	JAN 24	2264	1223	122	MAR 11–12	749	170	DEC 22–23	77	83	56	58	3.1	SW	25.0	N	JUN 14+	57	5.7	121	92	152	114	10	45	34	7	23	91	1
MEMPHIS	21.8	10.2	16.0	37.2	AUG 28	– 25.6	DEC 24	0	982	66	MAY 25–26	0	363	DEC 22	77	83	57	59	3.7	S	17.0	N	JUL 17	75	5.2	136	99	128	83	2	49	42	56	18	80	3
NASHVILLE	21.7	7.8	14.3	35.6	AUG 8+	– 26.1	JAN 24	2277	1127	136	AUG 28–29	729	259	DEC 31–1	79	85	56	60	3.5	S	23.2	NW	JUL 7	64	5.5	124	107	134	97	9	37	24	37	24	93	4
OAK RIDGE AREA STA				34.4	JUN 10	– 22.2	JAN 24	2405	1174	98	MAR 11–12	0	0						2.0	SW									112		0	0	5	14	98	3
OAK RIDGE	19.8	6.4	13.4	34.4	AUG 24+	– 22.2	JAN 24	2397	1135	99	MAR 11–12	640	274	DEC 22–23					2.1		21.9Y		JUL 28+		5.4	140	88	137	114	6	41	23	18	14	97	2

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1953

State and Station	Temperature							Heating degree days	Precipitation						Relative humidity				Wind					Possible sunshine	Average sky cover sunrise to sunset	Number of days									
	Averages			Extremes								Snow, Sleet							Fastest mile (1 6 kilometers)							Sunrise to sunset					Max temp		Min temp	
	Daily maximum	Daily minimum	Annual	Highest	Date	Lowest	Date		Total	Greatest in 24 hours	Date (s)	Total	Greatest in 24 hours	Date (s)	1 00 a m E S T	7 00 a m E S T	1 00 p m E S T	7 00 p m E S T	Average speed	Prevailing direction	Speed	Direction	Date			Clear, 0–0 3	Partly cloudy, 0 4–0 7	Cloudy, 0 8–1 0	Precipitation 25mm or more	Snow, Sleet 25 4mm or more	Thunderstorms	Heavy fog	32 2°C and above	0°C and below	0°C and below	–17 8 °C and below
TEXAS	°C	°C	°C	°C		°C		Base 18 3 °C	Mm	Mm		Mm	Mm		%	%	%	%	M p s		M p s			%	Tenths									
ABILENE	26.0	11.9	18.9	39.4	JUL 25+	– 14.4	JAN 12	1425	451	74	AUG 29–30	99	51	FEB 11	61	72	45	40	4.3	SSE	24.6	NW	JUN 19	70	5.0	146	99	120	59	1	36	3	129	7	65	0
AMARILLO	22.7	7.1	14.9	37.8	JUL 23	– 22.8	JAN 12	2183	439	44	AUG 13	226	64	FEB 10–11	59	70	41	36	6.5	S	28.2	W	MAR 18	78	4.3	172	112	81	66	3	44	20	86	16	107	9
AUSTIN	26.9	14.5	20.7	39.4	AUG 27+	– 11.1	JAN 24	1066	439	83	APR 4–5	25	25	FEB 11	69	80	50	46	4.1	S	20.1	N	FEB 2	58	5.7	113	111	141	64	1	39	18	137	3	32	0
BROWNSVILLE	27.9	18.1	23.0	35.6	SEP 18+	– 3.3	JAN 24	491	476	73	JUN 17–18	T	T	FEB 11–12	85	89	58	66	5.7	SE	17.9	NW	NOV 8	56	5.5	106	151	108	61	0	17	22	117	0	9	0
CORPUS CHRISTI	27.2	16.8	22.0	37.2	AUG 20	– 7.8	JAN 24	712	372	67	AUG 11	T	T	JAN 13	80	86	58	63	5.5	SSE	21.5	SE	APR 16	61	6.0	85	132	148	60	0	18	27	116	0	17	0
DALLAS	25.4	13.4	19.4	39.4	SEP 7+	– 13.3	JAN 24	1414	445	61	APR 28	74	51	DEC 21–22	63	74	49	44	5.3	S	21.5	NW	NOV 1	67	5.1	138	99	128	52	1	32	4	127	7	47	0
EL PASO	25.4	10.5	18.0	41.1	JUL 15	– 12.2	JAN 14	1418	125	18	MAY 23	155	127	FEB 11–12	52	35	27	41	3.4	WSW	25.5	NW	MAR 18	86	3.6	210	85	70	35	2	33	0	111	2	57	0
FORT WORTH	25.8	12.7	19.3	40.6	AUG 27+	– 12.8	JAN 24+	1433	1028	65	APR 26–27	69	64	DEC 21–22	64	76	48	44	5.1	SSE	22.8*	NE	SEP 7		5.2	145	91	129	58	1	36	8	129	6	58	0
GALVESTON U	23.4	18.2	20.8	33.9	AUG 14	– 7.2	JAN 24	833	768	86	JUN 20–21	T	T	FEB 22+					5.1		22.4	NE	SEP 17	68					61	0	0	0	7	1	14	0
HOUSTON U	26.2	17.1	21.7	37.8	AUG 13	– 7.8	JAN 24	789	969	79	MAY 22	0	0																81	0	0	0	112	1	17	0
HOUSTON	26.6	15.1	20.9	37.8	JUN 16	– 8.3	JAN 24	900	820	82	JUN 20–21	T	T	FEB 12+	85	88	57	64	4.4	SSE	24.1*	NNW	AUG 20	68	6.2	80	131	154	72	0	46	27	121	1	24	0
LAREDO	29.8	16.9	23.4	41.7	APR 9	– 6.1	JAN 24	678	444	134	JUN 16–17	0	0		66	80	47	40	4.9	ESE	19.7*	S	JUN 24		5.2	136	115	114	51	0	24	8	200	0	18	0
LUBBOCK	23.7	7.9	15.8	37.8	JUL 23	– 26.7	JAN 13	1920	412	57	MAY 31	300	112	FEB 21	63	75	47	40	6.0	SSE	23.2*	NNW	JUN 18		4.4	158	119	88	63	5	48	16	85	14	98	2
MIDLAND	25.8	10.7	18.2	39.4	JUL 23	– 15.0	JAN 12	1442	278	44	JUN 19	69	64	FEB 12	57	69	40	33	4.9	S	21.9*	NE	MAY 5		4.8	145	115	105	56	1	43	11	118	8	66	0
PORT ARTHUR	26.3	14.5	20.4	37.8	AUG 27+	– 8.9	JAN 24	997	1329	335	SEP 17–18	T	T	FEB 22+	87	90	59	70	4.1	S	29.5	SW	JUL 26	63	5.9	87	146	132	91	0	63	35	120	1	33	0
SAN ANGELO	26.7	12.1	19.4	40.0	JUL 24+	– 14.4	JAN 24	1326	354	49	MAY 19–20	102	51	FEB 11	60	72	45	39	3.8	SSE	26.8*	NNE	MAY 5		4.9	156	92	117	57	2	33	1	144	6	65	0
SAN ANTONIO	27.1	14.7	20.9	37.8	SEP 7+	– 9.4	JAN 24	980	474	65	MAY 5–6	T	T	DEC 22+	72	81	52	46	4.1	SSE	17.9	NE	FEB 2+	66	5.4	123	119	123	63	0	24	17	133	1	28	0
VICTORIA	27.0	15.7	21.3	38.3	AUG 20	– 8.3	JAN 24	845	560	51	NOV 27–28	T	T	FEB 12		88	53	60	4.6				JUL 24		6.0	75	149	141	63	0	36	17	134	0	21	0
WACO	26.3	13.7	20.0	39.4	AUG 27+	– 11.7	JAN 24	1278	497	75	MAY 5–6	51	25	DEC 13+	66	79	51	46	6.0	SSE	23.2*	NW	MAY 28		5.3	138	92	135	56	2	39	13	138	4	49	0
WICHITA FALLS	25.7	11.1	18.4	41.1	AUG 24+	– 15.0	JAN 24	1639	522	76	JUL 13–14	142	102	FEB 16	65	75	45	43	4.7	S	17.0*	N	MAY 19		4.9	155	87	123	65	1	48	15	142	9	72	0
UTAH																																				
MILFORD	19.1	.9	10.0	37.2	AUG 14+	– 28.3	JAN 13	3359	217	26	NOV 6–7	1090	173	FEB 10–11		40	31								5.1	137	110	118	70	14	35	7	60	21	164	13
SALT LAKE CITY	17.4	3.5	10.5	38.9	JUL 24	– 27.8	JAN 12	3366	358	23	MAR 15	1491	201	MAR 15	70	48	44	64	4.2	SSE	28.2	W	JUN 3	63	5.9	107	107	151	78	18	33	14	57	35	145	7
WENDOVER	16.7	5.5	11.1	37.8	JUL 24	– 23.3	JAN 12	3216	173	16	JUN 3–4	122	30	DEC 9–10+	53	42	36								4.9	155	78	132	61	1	32	6	43	39	123	3
VERMONT																																				
BURLINGTON	11.6	– .7	5.5	36.1	JUL 29+	– 32.2	FEB 4	4808	666	29	JUL 29–30	1793	147	JAN 27	78	76	57	66	3.8	S	21.9	S	MAR 6	56	6.8	68	109	188	139	22	31	14	11	86	180	35
VIRGINIA																																				
LYNCHBURG	19.2	6.9	13.1	36.1	AUG 3+	– 18.3	JAN 24	2461	675	52	NOV 6	376	112	DEC 23		72	47	55	3.0		17.4	W	MAR 6	61	5.3	137	103	125	93	6	21	24	26	20	98	1
NORFOLK	19.2	9.3	14.3	36.1	JUL 20+	– 9.4	FEB 23	2136	1099	174	JUN 2–3	239	160	FEB 26–27	77	78	57	66	5.0	SW	25.5	W	MAR 6	57	5.6	117	110	138	116	3	23	27	30	14	71	0
RICHMOND	19.9	6.8	13.4	35.6	AUG 3+	– 13.9	DEC 21	2358	951	117	JUN 2–3	211	135	FEB 26	78	80	50	63	3.6	SSW	16.5	W	MAR 6	61	5.3	126	118	121	90	3	25	21	42	10	99	0
ROANOKE	19.3	6.7	13.0	37.8	AUG 3	– 20.0	JAN 24	2478	652	41	SEP 28–29	584	206	DEC 23	68	72	45	51	4.1	WSW	25.9*	NW	APR 20		5.3	123	123	119	87	5	23	25	21	16	97	1
WASHINGTON																																				
OLYMPIA	15.7	4.7	10.2	32.8	SEP 9	– 15.0	JAN 12	2947	1215	62	FEB 2–3	53	51	JAN 30	90	79	65	86	3.0	SSW	19.7*	S	OCT 24		7.9	41	72	252	170	1	12	108	3	5	72	0
SEATTLE–TACOMA	15.1	6.9	11.0	33.9	MAY 21	– 11.1	JAN 11	2699	983	41	FEB 2–3	117	51	JAN 9	86	76	65	77	3.8	SSW	15.6*	S	OCT 21+		7.6	51	79	235	166	2	9	62	2	5	45	0
SEATTLE	15.5	8.7	12.1	33.3	MAY 21	– 8.3	JAN 11	2312	852	45	FEB 2–3	46	25	JAN 13							26.8	SW	OCT 21+	48					163	1	0	0	2	2	15	0
SPOKANE	14.4	3.3	8.9	35.0	AUG 6	– 21.7	JAN 11	3632	388	28	FEB 2–3	841	231	JAN 1	76	63	50	66	3.8	SSW	21.9	SW	APR 14	59	6.5	93	73	199	98	9	12	53	18	43	122	9
STAMPEDE PASS R	7.9	1.0	4.4	28.9	AUG 8	– 23.3	JAN 11	5037	1666	93	FEB 2–3	7938	386	DEC 6	86	82	77								7.7	63	45	257	204	76	5	245	0	67	182	3

See reference notes at end of table

ANNUAL CLIMATOLOGICAL DATA
METRIC UNITS

YEAR 1963

State and Station	Temperature: Averages: Daily maximum	Daily minimum	Annual	Extremes: Highest	Date	Lowest	Date	Heating degree days	Precipitation: Total	Greatest in 24 hours	Date (s)	Snow, Sleet: Total	Greatest in 24 hours	Date (s)	Relative humidity: 1:00 am EST	7:00 am EST	1:00 pm EST	7:00 pm EST	Wind: Average speed	Prevailing direction	Fastest mile (1.6 kilometers): Speed	Direction	Date	Possible sunshine	Average sky cover sunrise to sunset	Number of days: Sunrise to sunset: Clear, 0-3	Partly cloudy, 4-7	Cloudy, 8-10	Precipitation 25mm or more	Snow, Sleet 25.4mm or more	Thunderstorms	Heavy fog	Max temp: 32.2°C and above	0°C and below	Min. temp.: 0°C and below	-17.8°C and below
	°C	°C	°C	°C		°C		Base 18.3°C	Mm	Mm		Mm.	Mm		%	%	%	%	M p s		M.p.s.			%	Tenths											
WASHINGTON																																				
TATOOSH ISLAND R	12.4	7.9	10.2	23.3	MAY 20	- 5.6	JAN 11	2927	2010	98	DEC 22-23	1	T	MAR 30+	86	82	79	85	7.1	ENE	31.3	S	OCT 24	41	8.0	42	60	263	190	0	12	51	0	1	8	0
WALLA WALLA U	17.3	7.3	12.3	37.8	AUG 11	- 17.8	JAN 11	2631	345			218	71	JAN 30-31												33	35	113	100	5	17	28	49	25	67	1
YAKIMA	17.1	2.9	10.0	36.7	JUN 15	- 19.4	JAN 11	3247	208	35	JAN 1	533	345	JAN 31	77	56	43	68	3.1	W	18.3*	SSW	MAR 28		6.2	104	80	181	65	3	8	21	27	27	130	4
WEST INDIES																																				
SAN JUAN P.R. U	29.3	23.1	26.2	35.6	OCT 10	18.3	APR 25	0	1324	69	MAR 25-26	0	0																188	0	38	0	24	0	0	0
SAN JUAN P.R.	29.9	22.3	26.2	33.9	OCT 10	17.2	JAN 11	0	1235	78	SEP 4-5	0	0		89	84	66	80	3.7	ENE	13.0	NE	MAR 26	63	6.2	43	207	115	208	0	42	0	34	0	0	0
WEST VIRGINIA																																				
CHARLESTON	17.8	5.1	11.4	33.3	MAY 9	- 24.4	JAN 24	2850	768	38	MAR 11	1171	157	DEC 23	80	85	55	59	2.6	SW	15.6*	SW	MAY 28		6.3	80	127	158	118	14	29	118	9	36	109	10
ELKINS	15.6	1.5	8.6	32.2	JUL 17	- 29.4	FEB 27	3624	982	75	MAR 19	1524	155	FEB 12	88	89	57	69	3.1	NW	22.4	W	APR 30		6.9	61	105	199	158	21	43	102	1	40	167	15
HUNTINGTON	18.0	5.4	11.7	33.3	JUN 10+	- 26.1	JAN 24	2779	762	50	MAR 11	686	140	DEC 23	77	84	56	59	2.7	S	13.4*	N	MAR 4		6.4	80	123	162	113	10	38	63	6	39	107	12
PARKERSBURG U	17.4	5.1	11.3	33.9	JUN 26	- 25.6	JAN 24	2949	753	88	MAR 4-5	640	127	DEC 23					2.9		17.0	NW	JUN 10	55					118	10	35	11	11	40	113	9
WISCONSIN																																				
GREEN BAY	12.2	.3	6.3	33.9	JUL 1	- 32.8	JAN 23	4592	507	36	JUN 27	902	183	MAR 5-6	83	85	63	67	3.7	SW	22.4	SW	APR 3	55	6.1	98	107	160	109	11	33	26	4	89	151	55
LA CROSSE	13.3	2.5	7.9	37.2	JUL 1	- 35.0	JAN 15	4178	675	54	JUL 12-13	1049	221	JAN 11-12	80	81	57	59	4.3	S	28.2*	NW	AUG 2+		6.1	99	112	154	102	10	41	27	13	79	133	45
MADISON	13.3	.7	7.0	35.0	JUL 1	- 34.4	JAN 15	4423	665	93	JUN 5	963	224	MAR 5-6	78	82	59	63	3.8	S	24.1	N	JUN 7	52	6.1	97	113	155	96	12	41	29	10	80	161	52
MILWAUKEE	12.2	1.9	7.1	36.7	JUL 1	- 31.1	JAN 15	4322	485	42	APR 29-30	874	124	DEC 11	75	79	62	65	4.7	SSW	25.0	SW	APR 3	61	5.7	114	114	137	105	12	31	22	5	79	141	41
WYOMING																																				
CASPER	15.8	1.1	8.5	35.6	JUL 25	- 32.8	JAN 11	3818	201	17	JUL 26	991	89	APR 20-21	67	42	36	59	5.5	SW	21.5*	SW	FEB 1		5.8	112	103	150	87	16	36	1	19	35	163	22
CHEYENNE	15.9	1.3	8.6	35.0	JUL 21	- 32.8	JAN 11	3740	378	45	SEP 8-9	841	135	MAR 2-3	67	41	44	64	5.9	WNW	27.7	W	MAR 28	74	5.4	117	130	118	90	12	31	16	19	38	160	23
LANDER	14.9	.1	7.5	35.6	JUL 25	- 38.3	JAN 12	4129	326	75	JUN 14-15	2479	513	APR 20-21	66	47	43	58	2.8	W	25.0	SW	JAN 31	73	5.4	124	113	128	70	23	34	2	15	47	168	28
SHERIDAN	15.8	.8	8.3	36.1	JUL 24+	- 37.2	JAN 19	3887	459	82	APR 27-28	1836	157	DEC 17	74	49	48	65	3.4	NW	29.5	SW	MAR 28	61	6.1	94	110	161	105	21	37	5	27	41	169	29

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites

* Value entered in column 'Fastest Mile' is the highest observed 1-minute wind speed. This station is not equipped with a recording anemometer from which Fastest Mile data can be evaluated.

\+ And also on an earlier date or dates.

A Maximum hourly average.

B Number of days maximum 21.1 C. or above for Alaskan Stations.

Data in this table are obtained by conversion from data in the English Units table.

Y Peak gust.

\# Wind direction to 8 compass points only.

F Computed as of 8:00 a.m. local time.

K Computed as of noon local time.

V Sun below horizon November 19 - January 23.

X Sun below horizon November 24 - January 17.

† From the Loyola Avenue site

NORMALS, MEANS AND EXTREMES

State and Station	Elevation of ground (feet)	Temperature (°F) NORMAL (1931-1960) January: Daily maximum	January: Daily minimum	July: Daily maximum	July: Daily minimum	Extreme: Annual	Extreme: Length of record (yrs)	Extreme: Highest	Extreme: Lowest	Normal degree days (1931-1960): January	Seasonal	Precipitation (inches) NORMAL (1931-1960): Wettest month	Driest month	Annual	Extremes: Wettest month	Driest month	Maximum in 24 hours	Snowfall: Mean total: January	Seasonal	Extreme: Maximum in 24 hours	Relative humidity (percent): January: 7:00 a.m. EST	1:00 p.m. EST	July: 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind Speed (m.p.h.): Mean hourly: January	July	Fastest mile	Sunshine (percent of possible): January	July	Annual mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet or ice pellets	Thunderstorms	Heavy fog visibility 1/4 mile or less	Temperature: Max 32° and below	Min 32° and below	Min 0° and below
ALABAMA							80	112	-8																																	
Birmingham	610	55.6	35.3	90 5	69.7	62.7	19	106	1	503	2779	6.00	2.95	53.05	17.67	T	6.57	0.5	1.7	8.4	84	62	69	86	56	65	9.1	6.2	65	39	60	100	117	148	107	1	55	6	68	52	0
Huntsville	605	52.4	33.4	92.4	69.8	62.0	3	101	-4	522	3070	5.57	2.72	48.67	12.17	T	5.84	1.6	8.9	17.1	81	64	69	87	54	58	8.2	5.8	---	---	---	108	103	154	115	2	53	11	76	73	1
Mobile	211	62.3	42.7	89.8	72.1	67.2	2	100	8	464	1659	9.67	3.03	68.13	19.29	.05	13.36	.2	.5	3.5	76	61	66	89	61	73	11.4	7.4	---	---	---	104	121	140	124	*	84	33	93	34	0
Montgomery	194	58.5	37.7	91.9	71.7	65.0	4	100	5	543	2291	6.16	2.28	50.69	21.32	.02	8.81	.2	.3	2.5	78	60	65	89	59	66	7.9	6.0	60	49	65	108	109	148	109	*	63	21	90	43	0
ALASKA							80	100	-76									.00																							
Anchorage	90	20.5	4.3	64.6	49.5	35.2	10	81	-30	1631	10864	2.57	.42	14.71	5.43	.01	2.06	10.5	77.9	17.7	74	77	75	85	75	66	5.6	6.8	---	36	44	65	65	235	110	22	1	30	# 14	202	40
Annette	110	38.4	30.3	62.2	51.4	45.4	3	90	10	949	7159	16.88	5.67	118.36	34.87	.71	7.59	11.3	46.8	14.2	81	82	76	86	76	66	13.0	8.3	---	---	---	42	57	266	222	15	2	18	# 29	63	0
Barrow	22	-9.4	-23.0	44.9	33.3	9.6	43	78	-56	2517	20174	.90	.11	4.35	2.81	.00	1.00	2.4	28.3	15.0	63	64	63	95	91	88	11.2	11.7	---	x 60	x 54	x185	72	7	*	66	*	323	169
Barter Island	39	-9.9	-23.6	47.5	35.0	10.4	14	72	-59	2536	19862	1.05	.17	6.28	4.91	T	2.25	7.6	48.1	17.0	68	68	68	93	90	87	14.2	10.3	---	---	---	z 47	z 69	z194	99	13	*	73	*	308	166
Bethel	125	10.8	-3.7	61.8	47.5	28.7	5	86	-34	1903	13196	4.20	.58	18.42	5.81	.02	1.31	4.5	49.3	6.5	72	73	71	93	87	67	15.5	12.8	---	---	---	66	66	234	144	17	1	66	# 13	221	81
Cold Bay	94	33.3	22.9	54.3	43.0	37.9	19	78	-9	1144	9883	4.59	1.46	34.30	9.97	.02	2.75	6.8	43.7	9.7	85	86	83	93	91	83	18.6	15.9	---	---	---	12	48	305	204	13	0	27	*	162	1
Cordova	41	31.9	14.5	60.3	46.1	38.2	20	84	-33	1299	9764	12.51	3.48	80.98	27.72	.08	7.92	25.0	124.7	22.9	83	82	81	92	86	80	4.6	4.1	---	---	---	51	92	262	215	35	2	12	# 8	189	18
Fairbanks	436	-.8	-21.4	71.7	47.6	25.8	12	93	-62	2359	14279	2.20	.25	11.29	4.35	T	1.63	12.1	58.9	12.6	67	67	67	87	71	53	3.0	6.1	---	---	---	71	79	215	99	20	5	20	# 49	231	122
Juneau	17	30.1	20.0	62.7	47.8	40.1	20	84	-21	1237	9075	8.33	2.87	54.62	13.29	.27	4.66	18.4	94.9	31.0	80	80	78	88	79	68	8.3	7.7	---	29	30	44	36	285	222	26	*	21	# 20	146	8
King Salmon	43	20.8	5.9	63.0	46.8	33.8	21	88	-40	1600	11343	3.43	.64	19.18	7.30	.00	2.00	6.2	43.6	9.5	77	78	76	92	85	65	11.3	10.0	---	---	---	58	61	246	149	15	1	32	# 13	204	53
Kotzebue	10	1.3	-12.7	58.6	46.8	20.7	21	85	-48	2192	16105	2.16	.28	8.18	5.18	T	1.78	5.3	42.8	8.6	72	72	71	88	86	78	14.6	12.8	---	---	---	89	69	207	113	13	*	21	# 4	252	118
McGrath	334	.8	-18.7	68.6	48.7	25.8	21	88	-67	2294	14283	3.79	.47	18.58	6.26	T	2.39	16.0	85.6	15.2	70	69	71	87	75	57	2.8	5.9	---	---	---	67	64	234	138	26	6	13	# 28	231	113
Nome	13	11.5	-2.7	54.6	44.4	26.1	17	81	-42	1879	14171	3.80	.69	17.88	7.82	T	2.38	11.1	58.3	8.4	78	78	77	90	87	83	12.0	10.0	---	39	30	80	68	217	130	19	*	24	# 2	239	87
Northway (1956)	1713	-8.5	-25.7	69.8	48.5	22.4	14	88	-72	2545	13506	2.89	.22	11.35	6.42	T	3.91	7.7	40.1	11.5	68	67	65	87	67	50	3.0	5.9	---	---	---	45	84	236	102	11	12	17	# 37	247	138
St. Paul Island	22	29.7	21.1	49.4	41.6	34.3	46	64	-26	1228	11199	3.29	.96	23.60	9.32	.08	1.93	12.4	53.6	13.0	87	87	86	96	96	91	19.9	13.5	---	---	---	24	63	278	200	18	*	46	*	190	5
Shemya	122	33.9	28.6	49.2	43.6	38.4	18	63	17	1045	9671	2.76	1.32	27.27	8.59	.14	5.26	12.0	59.6	15.3	85	85	84	97	97	92	20.5	13.1	m139	---	---	5	58	302	210	20	0	87	# 0	122	0
Yakutat	28	34.4	20.2	60.5	47.7	40.0	17	86	-22	1169	9092	19.59	5.06	131.81	43.88	.52	7.13	35.4	206.2	32.4	82	83	81	96	85	79	8.6	7.2	---	---	---	41	46	278	225	48	1	32	# 5	168	9
ARIZONA							69	127	-37									.00	13.09																						
Flagstaff	6993	41.4	15.1	81.4	50.6	46.0	14	94	-20	1138	7029	2.84	.51	18.31	6.60	T	3.11	18.3	70.0	22.0	78	54	53	69	31	28	8.8	6.5	---	---	---	175	91	99	70	18	47	5	1	210	9
Phoenix (U)(1952)	1083	64.3	38.2	103.5	77.5	70.5	---	---	---	425	1492	.96	.06	7.12	-----	-----	-----	-----	-----	-----	--	--	--	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---
Phoenix	1117	64.0	37.3	104.6	78.0	70.5	3	114	20	443	1598	1.12	.09	7.20	5.56	.00	3.07	T	T	.6	59	40	28	43	26	19	4.5	6.3	75	77	84	211	84	70	34	0	22	2	165	10	0
Prescott	5014	51.0	23.1	90.8	61.1	55.7	21	103	-5	865	4362	2.66	.24	12.23	9.61	.00	3.08	6.1	16.2	12.4	72	49	45	59	30	31	7.1	8.3	72	72	74	184	99	82	60	6	46	4	48	130	*
Tucson	2584	62.6	36.0	99.0	73.1	67.5	23	111	16	487	1882	2.88	.13	11.00	7.93	.00	3.93	.4	1.0	6.4	63	40	34	56	32	46	7.5	7.9	59	80	76	193	92	80	49	*	40	1	146	20	0
Winslow	4880	46.2	16.8	96.7	64.6	56.2	4	105	-13	1039	4662	1.43	.26	7.23	4.80	.00	2.12	2.7	9.3	7.8	84	68	59	50	23	22	7.6	9.2	---	---	---	182	93	90	53	4	35	6	79	131	5
Yuma	199	69.3	43.5	108.2	81.3	75.0	13	120	28	276	878	.50	.01	3.03	2.68	.00	2.24	.0	.0	.0	53	35	25	47	29	20	7.3	9.6	54	85	92	253	67	45	14	0	7	1	187	2	0
ARKANSAS							73	120	-29									.00	12.00																						
Fort Smith	449	50.2	29.4	94.7	71.2	61.8	4	106	-3	781	3292	5.26	2.66	42.22	14.01	.06	7.13	1.9	5.2	5.6	80	61	63	92	58	56	8.4	6.6	58	45	69	130	93	142	93	3	59	13	84	72	1
Little Rock	257	50.6	30.5	92.7	71.1	61.7	4	107	-4	756	3219	5.28	2.82	48.66	12.53	T	7.71	2.4	5.2	11.3	82	60	62	87	60	62	9.0	7.2	65	43	68	120	100	145	103	2	57	16	83	67	1
Texarkana	361	54.9	35.2	93.3	71.9	64.3	22	106	-3	626	2533	5.30	2.73	49.19	15.33	T	6.55	1.4	2.2	7.5	84	67	70	90	58	59	7.6	6.6	---	---	---	---	---	---	99	1	63	18	83	40	*
CALIFORNIA							79	134	-45									.00	26.12																						
Bakersfield	494	57.4	37.4	100.3	68.2	65.1	26	115	20	546	2122	1.17	T	6.36	4.61	.00	1.68	T	T	T	86	72	58	48	30	19	4.9	7.1	---	---	---	199	83	83	37	0	3	21	108	16	0
Bishop	4108	52.7	20.8	97.0	55.2	56.0	16	109	-6	874	4275	1.18	.09	5.84	5.03	.00	3.32	3.5	6.2	9.0	--	46	35	--	18	14	---	---	---	---	---	205	85	75	29	2	14	*	99	145	*
Blue Canyon	5280	42.6	29.5	78.0	59.0	50.5	20	93	5	896	5596	11.70	.06	60.37	45.12	.00	9.31	49.3	240.4	38.5	--	60	--	--	31	--	---	---	---	---	---	173	65	127	88	40	12	68	1	100	0
Burbank	724	64.9	42.3	86.2	61.4	63.6	31	111	21	366	1646	3.22	.05	14.53	13.84	.00	7.76	.2	.2	4.7	70	53	46	82	51	41	4.3	5.7	---	---	---	190	99	76	38	*	4	30	46	3	0
Eureka (U)	43	53.6	41.1	60.5	52.0	52.3	53	85	22	546	4643	6.71	.10	38.43	13.97	.00	5.83	.2	.2	3.0	--	--	--	--	--	--	6.9	6.8	56	41	52	81	101	183	118	*	4	49	0	4	0
Fresno	328	55.2	35.8	98.6	62.6	62.4	13	111	21	605	2611	2.19	T	11.14	6.73	.00	1.91	.1	.1	1.5	94	83	68	62	38	20	5.4	7.0	43	53	98	201	70	94	42	*	5	41	99	26	0
Long Beach	34	65.1	39.7	83.2	60.6	62.5	4	111	25	397	1803	2.31	.03	9.84	9.05	.00	6.86	T	T	T	66	49	45	87	68	59	5.7	7.0	---	---	---	155	126	84	27	0	3	67	14	1	0
Los Angeles (U)	312	65.0	46.6	83.3	62.6	64.4	23	110	28	310	1349	3.33	.04	14.68	12.42	.00	6.11	T	T	.3	63	a45	50	84	49	53	6.8	5.4	49	72	82	185	107	73	35	0	6	17	17	*	0
Los Angeles	97	62.8	44.0	74.3	61.3	60.8	5	110	30	372	2061	2.88	.01	12.63	11.07	.00	6.19	T	T	T	63	49	54	86	68	70	6.2	6.8	62	---	---	143	113	109	36	0	3	51	4	*	0
Mount Shasta (R)	3544	41.4	25.1	85.3	50.7	49.9	21	103	-2	983	5722	6.36	.18	36.72	17.60	.00	5.90	32.2	105.3	37.4	--	74	70	--	40	30	---	---	---	---	---	162	86	117	88	19	14	7	20	134	*
Oakland	10	55.4	40.6	72.7	55.9	57.5	34	107	23	527	2870	3.83	.03	17.93	11.29	.00	5.45	T	T	1.0	85	74	67	87	69	61	6.2	9.0	---	---	---	144	118	103	63	*	2	19	5	7	0
Point Arguello	364	59.0	40.3	65.5	51.5	55.2	4	97	24	474	3595	2.35	.02	11.27	8.36	T	2.28	T	T	T	--	--	--	--	--	--	7.3	6.9	---	---	---	116	89	160	68	0	2	140	1	9	0
Red Bluff	341	53.4	37.5	99.6	67.9	63.5	19	114	21	605	2515	4.29	.04	22.05	11.38	.00	4.00	1.1	1.7	9.9	80	71	58	48	29	17	9.0	8.2	68	54	96	176	68	121	71	1	11	18	97	23	0
Sacramento (U)	23	53.4	40.3	92.0	60.0	61.8	30	112	22	561	2419	3.58	.04	18.02	12.20	.00	5.07	-----	-----	-----	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Sacramento	17	53.2	39.2	95.4	59.4	61.9	3	115	23	583	2502	3.24	T	16.29	12.64	.00	5.59	T	T	T	91	89	72	77	46	26	8.8	9.7	70	44	97	196	65	104	56	0	5	36	80	24	0
Sandberg (R)	4517	46.0	33.8	85.6	63.2	55.5	31	102	3	778	4209	2.58	.02	12.10	11.12	.00	4.87	9.3	25.8	38.5	--	56	--	--	25	--	17.4	12.9	---	---	---	212	79	74	40	6	4	79	21	54	0
San Diego	13	64.6	46.4	75.8	63.4	62.9	3	111	31	298	1458	2.15	.01	10.40	7.60	.00	3.07	T	T	T	64	47	50	83	69	66	5.5	6.7	51	69	67	152	120	93	42	0	3	30	3	*	0
San Francisco (U)	52	55.8	45.5	64.3	53.3	56.8	27	101	30	443	3001	4.55	.01	20.78	11.47	.00	3.65	T	T	T	c82	c68	--	c86	75	--	6.7	11.2	47	55	65	---	---	---	67	0	2	--	1	*	0
San Francisco	8	55.4	41.7	71.9	53.5	56.9	35	106	20	508	3012	4.09	.01	18.69	12.30	.00	3.74	T	T	1.5	87	78	69	90	69	66	6.9	13.7	62	---	---	163	104	98	62	*	2	21	3	6	0
Santa Maria	238	62.3	38.1	71.6	52.8	57.0	20	104	21	459	2967	2.84	.03	13.37	9.69	.00	3.07	T	T	T	81	60	61	93	66	64	6.7	6.5	---	---	---	176	111	78	45	0	2	87	4	15	0
COLORADO							76	118	-60									.00	8.05																						
Alamosa	7536	35.6	-.8	82.5	47.2	41.9	18	91	-50	1476	8529	1.07	.17	6.56	2.45	T	1.82	4.5	30.0	14.0	75	58	58	83	38	36	---	---	---	---	---	149	137	79	64	12	44	14	1	226	46
Colorado Springs	6173	42.9	14.2	85.2	54.7	48.2	3	99	-21	1128	6514	2.37	.24	13.19	5.90	T	3.09	4.7	38.6	18.0	56	38	48	72	36	41	10.2	9.8	---	---	---	136	123	106	86	11	60	22	20	159	12
Denver	5283	43.1	16.8	87.4	59.4	50.4	4	100	-25	1085	5982	2.70	.47	14.81	7.31	T	3.43	8.9	59.1	19.4	59	47	52	70	31	31	9.8	9.1	56	72	72	114	137	114	86	18	42	10	37	160	15
Grand Junction	4825	34.8	17.1	92.5	63.8	52.5	17	102	-23	1209	5641	1.07	.42	8.29	3.48	.00	1.24	8.5	27.5	9.1	75	63	61	45	26	19	5.6	9.5	66	58	78	140	109	116	70	9	38	8	56	137	4
Pueblo	4639	45.3	14.7	92.1	60.8	52.7	23	105	-31	1085	5462	1.85	.30	11.84	6.17	T	3.77	6.4	33.0	16.8	69	46	49	73	35	34	7.5	8.1	80	74	77	142	120	103	71	10	45	8	56	156	9
CONNECTICUT							76	105	-32									.00	12.12																						
Bridgeport	7	37.4	22.9	82.6	64.8	51.5	2	97	-5	1079	5617	4.45	2.96	44.89	13.29	.07	4.67	6.3	25.5	15.0	73	62	67	81	59	69	11.3	8.8	---	---	---	104	106	155	117	7	23	28	5	111	2
Hartford(Bradley Fld.)	169	35.6	17.6	83.4	60.9	49.3	4	96	-26	1190	6235	4.01	2.94	42.92	21.87	.35	12.12	11.1	52.8	14.3	75	59	65	82	53	64	10.4	7.8	51	54	60	87	110	168	127	14	23	34	13	144	10
New Haven	6	37.1	22.0	80.5	63.2	50.2	20	100	-8	1097	5897	4.62	3.19	46.02	10.95	.12	5.55	9.0	36.8	17.2	76	64	--	81	67	--	8.2	6.3	57	53	67	102	104	159	130	11	27	28	3	112	1

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) NORMAL (1931-1960) January Daily maximum	January Daily minimum	July Daily maximum	July Daily minimum	Annual	Extremes Length yrs	Extremes Record highest	Extremes Record lowest	Normal degree days (1931-1960) January	Normal degree days (1931-1960) Seasonal	Precipitation (inches) NORMAL (1931-1960) Wettest month	Driest month	Annual	Extremes Wettest month	Extremes Driest month	Extremes Maximum in 24 hours	Snow, sleet Mean total January	Snow, sleet Mean total Seasonal	Snow, sleet Extreme Maximum in 24 hours	Relative humidity (percent) January 7:00 a.m. EST	January 1:00 p.m. EST	January 7:00 p.m. EST	July 7:00 a.m. EST	July 1:00 p.m. EST	July 7:00 p.m. EST	Wind Speed (m.p.h.) Mean hourly January	Mean hourly July	Fastest mile	Sunshine (percent of possible) January	Sunshine (percent of possible) July	Annual mean number of days Sunrise to sunset Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature Max 90 and above	Min 32 and below	Min Zero and below
DELAWARE							71	110	-17							0.00	7.83																								
Wilmington	78	41.3	25.5	86.2	65.8	54.1	16	102	-4	980	4930	5.59	2.91	44.56	12.09	.16	6.24	5.6	21.2	15.6	76	62	71	80	53	67	96	74	---	---	---	96	107	162	120	6	31	43	20	103	*
DIST. OF COLUMBIA																																									
Washington (U) (1958)	72	44.0	28.9	87.1	68.4	56.8	87	100	-15	884	4258	4.49	2.64	41.44	17.45	.14	7.31	5.9	19.4	25.0	73	56	64	78	52	67	7.7	5.7	62	46	64	125	116	124	124	6	33	12	28	81	*
Washington Nat'l. AP	14	44.3	29.5	87.0	69.3	57.0	3	99	3	871	4224	4.90	2.47	40.78	14.31	T	6.39	4.5	16.4	14.4	67	53	58	77	52	60	10.4	8.4	78	48	65	105	105	155	114	7	30	14	28	80	0
FLORIDA							74	109	-2							.00	38.70																								
Apalachicola (U)	13	62.3	47.9	87.6	75.4	68.8	34	102	13	347	1308	8.53	2.44	56.23	22.55	.01	11.71	T	T	1.2	87	69	80	85	72	76	8.4	6.6	67	60	64	130	110	120	106	*	73	25	17	4	0
Daytona Beach	31	69.6	48.7	88.2	72.0	70.3	20	102	21	248	879	7.00	1.95	49.90	19.89	.06	9.29	.0	T	T	90	60	80	90	67	81	9.4	7.8	---	---	---	98	133	134	117	0	85	34	59	6	0
Fort Myers	13	74.8	52.2	91.0	73.3	73.7	4	98	26	146	442	9.08	1.20	53.34	16.32	.00	10.85	.0	.0	.0	87	58	73	83	58	71	8.4	6.9	---	---	---	106	156	103	117	0	99	22	136	1	0
Jacksonville (U) (1956)	18	65.9	48.7	89.6	73.7	69.8	86	104	10	303	1113	7.89	1.57	52.40	23.32	T	9.86	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	122	*	--		61	5	0
Jacksonville	24	66.8	45.0	92.0	73.2	69.5	22	105	12	332	1239	7.68	1.69	53.36	19.36	.04	10.17	T	.1	1.5	88	56	74	86	57	75	8.5	7.9	72	57	59	99	129	137	115	*	61	34	89	12	0
Key West (U) (1957)	9	75.8	65.8	89.1	78.3	77.6	90	97	41	28	77	6.78	1.54	39.57	23.36	T	19.88	.0	.0	.0	84	69	79	77	68	74	10.3	8.2	91	68	69	140	157	68	112	0	59	*	33	0	0
Key West (Int'l. AP)	5	73.7	65.4	87.4	79.1	76.8	11	95	46	40	108	6.73	1.53	39.99	18.45	.00	8.89	.0	.0	.0	84	69	78	76	65	72	12.3	10.3	122	71	69	107	167	91	112	0	59	1	61	0	0
Lakeland (U)	214	71.2	52.2	90.5	72.6	72.3	23	101	20	195	661	8.30	1.59	51.37	15.67	T	10.12	T	T	T	--	--	--	--	--	--	7.2	5.6	---	62	60	98	157	110	122	0	0	19	87	1	0
Miami (U) (1961)	8	74.4	62.6	86.8	76.4	75.3	49	95	27	57	173	7.88	1.73	47.26	25.34	T	15.10	.0	.0	.0	--	--	--	--	--	--	---	---	---	122	70	61	155	114	96	---	---	---	---	--	--	--
Miami Beach	9	74.2	63.9	87.0	77.6	76.2	23	98	35	56	141	7.36	1.65	46.26	18.02	.01	8.35	.0	.0	.0	--	--	--	--	--	--	10.6	9.4	122	68	62	150	120	95	123	0	---		14	0	0
Miami (Int'l. AP)	7	75.8	67.9	88.8	74.7	75.1	21	98	32	74	214	9.47	1.67	59.76	24.40	.01	9.95	.0	.0	.0	86	56	73	84	64	76	9.2	7.8	---	--	---	84	173	108	126	0	79	8	64	*	0
Orlando	106	70.7	50.6	89.9	73.0	71.5	4	100	20	220	782	8.00	1.57	51.37	19.57	T	9.67	T	T	T	89	57	68	91	53	72	---	---	---	---	--	98	148	119	116	0	81	29	123	2	0
Pensacola (U) (1961)	13	61.1	46.9	86.9	75.0	68.0	22	103	13	383	1435	7.59	3.84	61.60	18.80	T	9.16	T	.2	2.1	86	64	79	85	64	74	8.1	6.7	91	56	66	---	---	---	112	*	65	-	39	9	0
Pensacola	112	61.9	46.3	88.4	75.2	68.3	23	103	10	381	1451	7.59	3.40	63.39	18.80	T	9.16	T	.2	2.1	86	64	79	85	64	74	8.1	6.7	91	23	66	---	---	--	112	*	65	---	39	9	0
Tallahassee	38	65.1	42.7	90.3	72.0	68.0	3	99	10	375	1485	8.05	2.43	56.86	10.66	T	7.16	.0	T	T	88	62	74	93	59	72	10.0	7.6	---	--	---	99	136	130	117	0	91	55	98	34	0
Tampa	19	71.3	51.9	89.7	73.4	72.2	16	98	18	202	683	8.62	1.46	51.57	20.59	T	12.11	T	T	T	88	57	74	87	62	77	9.0	7.7	--	68	60	99	145	121	112	0	92	26	85	2	0
West Palm Beach	15	75.5	58.3	90.8	74.3	75.3	11	98	30	87	253	9.66	2.35	61.70	24.86	.12	15.23	.0	.0	.0	86	58	73	84	62	75	9.8	7.5	---	---	---	74	157	134	132	0	79	8	88	*	0
GEORGIA							72	112	17							.00	18.00																								
Athens	803	54.6	34.5	90.2	69.2	61.9	20	105	2	642	2929	5.10	2.86	48.53	14.98	T	5.54	.5	1.5	5.0	81	58	66	90	58	68	9.7	6.9	---	---	---	109	110	146	110	1	50	30	57	51	0
Atlanta	1010	54.0	35.5	88.4	69.2	61.6	3	94	-3	636	2961	5.37	2.44	47.14	15.72	T	5.67	.8	1.7	8.3	76	57	60	91	64	70	11.2	7.6	70	47	63	111	110	144	115	*	50	27	20	58	*
Augusta	143	59.4	35.7	91.3	70.0	64.0	13	106	6	549	2397	4.50	2.01	39.18	8.48	T	3.96	.1	.4	1.3	85	55	70	88	54	68	6.7	5.8	---	---	---	111	103	151	102	*	57	24	84	5	0
Columbus	385	59.0	36.0	91.9	70.6	64.4	18	104	3	552	2383	6.01	1.77	48.67	12.53	.00	5.32	T	T	T	85	60	73	87	58	70	8.6	6.2	---	--	---	115	100	150	110	0	59	19	80	4	0
Macon	356	60.2	38.2	92.8	71.0	65.6	15	106	5	505	2136	5.64	2.01	44.08	11.77	.00	4.60	.3	.3	3.7	83	53	63	87	53	65	8.9	7.4	70	57	65	118	104	143	110	*	58	23	96	36	0
Rome	637	52.8	31.3	90.6	67.4	60.4	18	106	-5	710	3326	5.87	2.93	52.26	17.37	T	7.53	.4	1.9	8.2	81	58	73	88	54	67	---	---	---	---	---	105	117	143	122	1	62	28	67	80	*
Savannah	48	62.5	40.9	91.2	71.4	66.4	13	104	9	437	1819	6.62	2.05	48.91	15.70	.02	6.36	T	.1	1.0	86	56	70	88	58	75	9.2	7.5	66	56	66	105	120	140	108	*	65	37	71	31	0
Thomasville (U)	283	63.4	44.0	92.0	72.0	68.2	41	106	8	394	1529	6.81	2.08	51.01	18.83	T	9.00	T	T	2.0	85	60	70	85	60	78	5.3	4.1	---	54	57	122	119	124	116	*	72	13	77	15	0
HAWAII							59	100	18							.00																								
Hilo	31	78.7	62.8	82.4	67.4	73.1	17	93	53	----	----	15.18	6.79	136.32	50.82	.36	15.59	.0	.0	.0	84	80	66	88	82	66	7.6	7.2	---	48	43	29	124	212	284	0	12	0	*	0	0
Honolulu (U)	12'	---	---	---	---	75.1	41	88	57	----	----	3.86	.62	23.96	18.70	.06	17.41	.0	.0	.0	--	--	--	--	--	--	---	---	---	---	---	---	---	---	147	0	---	---	0	0	0
Honolulu	7	79.1	65.8	84.6	73.0	75.9	16	92	54	----	----	3.76	.33	21.89	20.79	T	17.07	.0	.0	.0	80	80	61	74	69	56	10.2	13.7	67	65	78	99	167	99	95	0	6	0	1	0	0
Kahului, Maui	44	80.8	63.4	86.4	70.1	75.2	2	91	53	----	----	3.14	.18	16.33	9.46	.00	5.82	.0	.0	.0	83	83	63	80	73	57	16.3	23.3	---	63	81	104	184	77	85	0	4	0	3	0	0
Lihue	115	78.2	63.5	83.1	72.0	74.5	13	90	51	----	----	5.51	1.46	43.00	18.45	.30	11.20	.0	.0	.0	84	84	67	80	75	65	10.3	12.7	73	52	62	56	169	140	203	0	9	0	*	0	0
IDAHO							71	118	-60							.00	7.17																								
Boise	2838	36.1	21.1	90.4	59.0	50.8	24	111	-17	1128	5835	1.33	.16	11.43	4.00	.00	2.24	7.4	20.4	13.0	81	74	72	53	34	22	8.7	8.6	61	43	89	124	90	151	90	8	16	20	41	127	3
Idaho Falls 46W (R)	4933	27.5	3.2	87.9	50.1	42.4	14	101	-40	1538	8475	1.10	.26	7.57	4.42	.00	1.73	6.7	25.9	8.5	--	--	--	--	--	--	5.7	8.0	51	--	-	---	---	---	67	10	13	14	26	210	32
Idaho Falls 42NW (R)	4790	26.5	.2	89.0	49.2	41.7	13	103	-43	1660	8760	1.24	.33	7.02	5.04	.00	1.78	---	---	---	---	---	---	---	---	---	4.6	8.2	50	---	---	---	---	---	66	-	-	--	31	216	41
Lewiston	1411	37.7	23.7	89.8	57.8	51.6	17	115	-22	1063	5542	1.73	.43	13.24	4.80	T	1.73	7.1	17.7	11.9	80	74	71	61	36	23	---	---	---	---	---	94	78	193	103	6	16	21	37	99	3
Pocatello	4454	31.6	13.0	89.6	55.1	47.0	14	101	-30	1324	7033	1.21	.51	10.85	3.30	.00	1.30	11.8	37.3	10.1	82	75	73	57	30	21	10.5	9.8	72	37	83	115	95	155	88	13	26	14	33	162	9
Salmon (1960)	3949	28.2	4.1	89.6	46.8	44.0	48	---	---	1513	7922	1.28	.42	8.64	3.88	.00	1.50	----	----	----	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ILLINOIS							74	117	-35							.00	14.25																								
Cairo (U)	314	44.6	30.2	90.3	71.8	59.6	21	104	-5	856	3821	4.79	2.88	45.23	14.95	.33	7.56	2.7	8.9	7.3	80	68	--	84	59	--	9.8	6.6	59	44	77	110	105	150	115	3	53	7	53	64	*
Chicago (Midway)	607	33.2	18.9	85.6	65.7	50.9	20	104	-15	1206	6113	4.07	1.60	33.18	14.17	.26	6.24	8.7	37.0	12.5	80	70	75	78	52	55	11.2	7.9	60	42	70	94	104	167	120	11	36	15	26	123	7
Moline	582	31.6	14.6	87.0	64.2	50.2	4	99	-26	1299	6378	4.37	1.35	32.79	11.00	.04	6.29	7.0	27.0	9.6	71	63	65	89	59	62	10.4	7.4	77	46	72	104	98	163	109	9	47	20	25	135	27
Peoria	652	33.7	17.6	87.0	65.0	51.4	4	97	20	1218	6025	4.27	1.71	34.84	13.09	.25	5.06	5.3	22.8	9.0	76	69	71	88	60	60	11.3	8.3	75	44	69	103	101	161	108	8	47	19	16	136	19
Rockford	724	30.2	13.7	86.3	62.1	48.6	13	103	-20	1333	6830	4.30	1.44	35.62	11.81	.01	5.56	9.0	32.7	10.9	82	73	78	87	56	59	9.3	7.9	---	---	---	93	101	169	112	12	40	24	19	150	14
Springfield (U) (1964)	632	36.4	21.6	89.1	68.3	54.4	--	---	---	1116	5225	4.11	1.67	35.82	-----	----	----	----	----	----	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Springfield	588	36.3	20.5	87.6	66.4	53.1	4	99	-22	1135	5535	4.45	1.82	34.83	8.87	.15	5.12	3.6	19.5	8.0	76	68	71	86	61	62	13.2	8.6	75	42	73	109	94	162	113	7	51	17	24	153	14
INDIANA							77	116	-35							.00	10.50																								
Evansville	381	42.7	25.6	89.3	67.2	56.3	3	100	-18	955	4586	4.31	2.57	41.45	13.50	.13	6.05	3.3	11.4	10.6	81	68	73	87	56	57	9.8	6.6	59	40	77	103	103	159	115	4	48	14	51	107	10
Fort Wayne	791	34.4	18.6	86.1	62.2	50.1	3	101	-18	1194	6265	4.17	2.09	35.31	9.72	.40	4.60	6.8	28.8	7.7	79	72	76	83	56	56	11.1	8.1	65	38	71	80	107	178	129	9	43	20	15	136	21
Indianapolis (U) (1955)	781	38.7	23.4	88.3	67.7	54.5	--	---	---	1051	5134	4.18	2.08	39.24	-----	----	----	----	----	----	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Indianapolis	792	37.1	21.0	86.0	64.3	52.1	5	97	-18	1113	5699	4.62	2.28	39.25	12.69	.17	3.90	4.2	19.0	6.6	79	68	72	92	63	64	11.7	7.7	90	39	72	92	102	171	122	7	46	21	11	127	14
South Bend	773	33.0	18.1	84.5	62.6	49.4	23	101	-22	1221	6439	3.62	1.88	35.70	9.75	.02	3.31	14.4	59.6	15.0	83	75	80	85	55	59	11.8	8.4	---	---	---	77	104	184	137	20	44	24	17	139	7
IOWA							91	118	-47							.00	12.99																								
Burlington	694	32.7	16.1	87.6	65.6	51.2	66	111	-27	1259	6114	5.01	1.39	34.60	15.10	.08	6.28	7.3	25.8	13.0	80	70	74	85	57	59	11.1	8.0	73	52	77	103	104	158	104	9	53	18	34	128	11
Des Moines	938	30.1	12.5	88.3	65.6	50.1	3	97	-22	1355	6542	4.71	1.10	30.37	14.19	.03	5.50	8.8	33.8	19.8	80	73	75	87	62	61	11.9	9.2	76	49	70	103	94	168	103	11	49	17	14	138	33
Dubuque	1063	27.3	11.1	83.7	61.5	46.6	13	99	-26	1420	7376	4.22	1.40	35.71	13.13	T	6.28	9.3	43.6	15.5	81	71	76	85	58	63	---	---	---	---	---	95	99	171	110	14	45	28	8	154	20
Sioux City	1099	28.9	8.5	88.5	64.2	48.7	4	104	-26	1435	7010	4.33	.74	24.77	8.67	T	4.28	6.3	32.3	11.4	76	70	72	88	60	56	11.0	8.9	91	58	75	107	105	153	98	11	46	18	15	151	32
Waterloo	868	27.8	8.9	86.7	61.8	47.6	4	98	-34	1445	7224	4.83	.92	31.48	8.73	T	4.33	7.4	32.8	12.2	82	72	76	91	63	64	10.4	8.1	---	---	---	95	107	163	89	10	40	23	14	154	33

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and station	Elevation of ground (feet)	Temperature (°F) NORMAL (1931-1960) Monthly: Daily maximum	Daily minimum	Daily mean	Extremes: Annual highest	Annual lowest	Record highest	Record lowest	Normal degree days (1931-1960): Heating	Cooling	Precipitation (inches) NORMAL (1931-1960): Water equiv. month	Water equiv. 24 hrs	Water equiv. year	Extremes: Wettest month	Driest month	Maximum 24 hours	Snow, Ice Pellets: Mean total: January	Seasonal	Extreme: Maximum monthly	Relative humidity (per cent): January: 7 a.m. EST	1:30 p.m. EST	7 p.m. EST	July: 7 a.m. EST	1:30 p.m. EST	7 p.m. EST	Wind: Speed (m.p.h.) Mean hourly: January	July	Extreme	Sunshine (percent of possible): Mean: January	July	Annual mean number of days: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Ice Pellets 1.0 inch or more	Thunder	Heavy fog visibility 1/4 mile or less	Temperature: Max 90° or higher	Min 32° and below	Min 0° and below
KANSAS						77	121	-40					0.00	12.59																									
Concordia (U)(1961)	1375	37.6	18.6	91.2	68.7	54.3	77	116	-25	1144	5323	4.23	.59	25.40	13.74	T	6.46	4.5	21.4	17.2	78	63	68	77	47	48	7.7	7.0	65	60	78	142	126	97	86	7	45	10	48	118	6
Dodge City	2582	42.4	19.7	92.8	67.5	55.4	21	107	-15	1051	4986	3.22	.17	19.25	9.13	T	1.17	4.3	18.8	9.3	79	59	62	79	47	43	14.3	13.4	78	69	77	143	105	117	77	6	55	24	61	127	3
Goodland	3645	40.9	13.9	91.8	61.3	50.8	43	111	-26	1166	6141	2.67	.39	16.50	8.09	.00	2.95	5.7	33.1	15.2	77	54	62	79	44	42	12.1	11.9	---	---	---	144	125	96	76	12	52	30	58	157	8
Topeka	877	38.5	19.0	91.6	68.1	54.9	17	109	-13	1122	5182	4.51	1.02	32.36	12.02	T	4.48	6.1	21.7	9.3	78	64	67	87	57	56	10.9	9.5	81	53	66	115	99	151	95	7	38	14	51	127	5
Wichita	1321	41.6	22.3	92.4	69.4	57.1	11	113	-12	1023	4620	4.21	.81	28.41	10.46	T	4.70	5.3	16.6	13.0	81	64	67	81	51	47	12.9	11.4	66	60	74	129	98	138	84	5	37	18	66	111	2
KENTUCKY						75	114	-34					.00	10.40																									
Lexington	966	42.9	26.1	88.2	66.5	55.6	18	103	-15	946	4683	4.94	2.28	44.73	16.65	.24	5.88	4.8	13.6	9.5	84	71	77	85	56	66	12.5	7.8	---	---	---	101	103	161	129	5	49	19	28	98	2
Louisville (U)(1955)	457	43.2	27.9	87.9	69.3	57.3	1	1	1	911	4279	4.67	2.48	41.60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Louisville	477	43.5	25.5	88.5	65.6	55.5	3	101	-20	946	4724	4.59	2.25	41.32	11.38	.23	5.14	4.3	15.4	9.5	81	66	67	81	62	63	9.8	6.6	61	37	67	100	102	163	122	5	46	10	22	100	5
LOUISIANA						73	114	-16					.00	22.00																									
Alexandria	92	60.7	39.9	91.8	72.6	51.3	4	104	5	471	1921	5.73	3.13	56.69	12.06	.35	5.37	.5	.6	7.3	88	65	71	97	64	71	6.7	4.4	---	---	---	114	114	137	104	*	76	37	78	52	0
Baton Rouge	64	62.5	42.3	91.1	72.4	67.6	5	102	10	425	1620	6.27	2.45	51.46	13.23	.09	6.97	T	0.2	1.0	86	67	68	92	62	70	9.9	6.2	---	---	---	103	119	143	104	*	74	36	90	29	0
Lake Charles	14	62.3	44.0	91.5	74.0	68.6	2	103	15	397	1491	7.29	3.06	56.04	17.36	T	14.10	T	T	T	84	68	74	95	60	69	13.2	6.8	---	---	---	105	127	133	77	0	70	51	82	30	0
New Orleans(U)(1961)	9	63.5	48.3	90.3	75.8	70.4	47	102	17	341	1175	7.09	3.66	63.54	25.11	T	14.01	T	.1	1.3	†85	†67	†73	†84	†63	†71	7.5	5.6	98	49	61	110	135	120	119	*	74	15	68	4	0
Shreveport	252	56.7	38.3	93.2	73.2	65.8	11	107	3	552	2211	4.94	2.28	46.28	12.39	.00	7.17	.5	1.2	3.5	83	63	65	90	55	56	10.6	8.3	---	51	76	126	98	141	96	*	56	19	96	32	0
MAINE						76	105	-48					.00	7.72																									
Caribou	624	19.8	1.1	75.1	53.9	38.4	24	96	-41	1690	9767	4.07	2.02	36.31	8.45	.12	6.23	22.3	107.6	18.2	73	68	73	83	58	71	12.4	9.8	---	---	---	58	102	205	161	30	20	26	2	192	43
Portland (City AP)	61	31.8	11.7	79.5	56.7	45.0	23	100	-39	1339	7511	4.37	2.42	42.85	12.27	.26	7.71	19.0	71.7	21.0	80	64	73	80	59	76	9.5	7.7	76	54	67	112	98	155	126	18	19	53	6	161	16
MARYLAND						68	109	-40					.00	14.75																									
Baltimore (U)	14	44.1	30.4	87.4	70.7	57.6	93	107	-7	859	4111	4.60	2.98	44.21	17.69	.05	7.82	6.1	22.7	24.5	72	58	66	71	52	65	10.3	8.8	66	48	65	121	123	121	123	6	32	15	25	71	*
Baltimore (Int. AP)	148	44.2	25.3	87.2	66.4	55.2	13	102	-7	936	4654	5.19	2.89	43.05	18.35	T	7.82	5.1	22.2	15.5	75	59	66	81	53	65	10.5	9.0	80	50	68	111	111	143	114	9	29	31	30	101	1
Frederick (1961)	294	41.4	24.0	87.9	65.4	54.7	12	102	-11	1001	4854	4.03	2.58	40.23	11.26	.15	5.56	5.2	22.0	16.0	--	64	--	--	57	--	---	---	---	---	---	---	---	---	123	8	---	9	28	119	1
MASSACHUSETTS						76	106	-34					.00	11.14																									
Blue Hill Obs. (R)	629	34.4	19.5	80.2	61.6	48.7	78	101	-21	1178	6368	4.54	3.27	47.50	18.78	.06	9.93	15.3	59.4	27.2	77	63	69	80	57	75	17.3	13.0	121	44	57	---	---	---	136	16	---	---	5	132	4
Boston	15	36.8	23.0	81.9	65.4	51.4	12	100	-12	1088	5634	4.22	2.88	42.77	17.09	.35	8.40	12.3	40.4	19.4	69	58	63	72	54	65	14.8	10.9	65	48	66	99	106	160	130	11	30	24	14	96	1
Nantucket	43	39.2	25.8	74.3	60.7	49.1	17	95	-3	1008	6001	4.54	2.71	43.66	12.92	.01	4.48	7.3	33.9	20.1	80	72	76	86	74	89	14.6	11.2	73	40	63	86	93	186	126	8	21	99	*	94	*
Pittsfield	1170	30.5	13.1	79.2	56.4	44.9	25	95	-25	1339	7578	4.89	2.51	44.42	10.32	.42	4.25	17.4	75.4	11.6	--	--	--	--	--	--	---	---	---	---	---	---	---	---	57	127	181	153	23	28	45	3	162	14
Worcester	986	31.2	16.8	79.0	60.5	46.8	8	93	-19	1271	6969	4.26	2.92	45.41	8.56	.83	4.79	16.6	81.6	24.0	74	60	67	74	57	68	13.4	9.3	---	---	---	90	111	164	130	20	21	83	2	147	8
MICHIGAN						77	112	-51					.00	9.91																									
Alpena	689	28.9	12.4	80.4	53.4	43.4	5	96	-28	1373	8104	3.61	1.61	29.92	5.99	.16	2.54	17.5	73.5	11.5	78	67	71	83	51	60	7.4	6.4	43	53	80	78	104	183	139	21	33	18	5	188	36
Alpena (U)(1959)	587	28.1	14.2	76.8	57.9	43.5	45	104	-28	1358	8073	3.20	1.45	26.63	7.43	.16	4.40	16.0	64.4	16.7	80	70	76	77	61	68	11.7	9.2	61	29	70	82	119	164	144	19	29	20	3	155	10
Detroit (City AP)	619	33.0	20.7	83.9	63.8	49.9	30	105	-16	1181	6275	3.53	2.05	30.95	8.05	.23	3.72	7.9	31.5	9.8	81	70	75	75	51	55	11.4	8.2	77	32	70	82	106	177	133	11	33	12	15	126	2
Detroit (Metropolitan)	633	32.9	19.1	83.7	62.1	49.1	5	94	-13	1309	6469	3.54	1.92	30.80	7.30	.27	2.62	7.3	33.3	6.3	79	70	73	84	51	57	11.0	8.1	---	---	---	77	108	180	133	12	36	25	12	142	9
Detroit (Willow Run)	711	33.4	19.8	85.0	63.4	50.1	3	96	-13	1190	6246	3.48	1.94	30.67	8.71	.25	4.78	7.7	32.0	8.0	81	73	76	85	49	51	11.7	8.8	---	---	---	78	106	181	121	11	34	28	19	136	11
Escanaba (U)(1961)	594	25.0	10.0	75.3	58.4	41.9	52	100	-31	1473	8657	3.22	1.37	28.08	9.93	.07	5.05	13.5	55.7	14.5	78	70	74	80	65	69	10.2	9.0	68	41	66	102	108	155	129	18	33	19	*	163	20
Flint	766	31.0	16.2	83.8	59.3	47.3	7	97	-22	1283	7007	3.39	1.70	30.05	8.68	.07	6.04	10.0	38.8	13.4	83	73	79	86	50	54	11.8	8.2	---	---	---	67	108	190	129	13	33	20	5	153	18
Grand Rapids(U)(1956)	638	31.8	19.7	84.0	63.2	49.3	f	f	f	1215	6474	3.47	1.73	31.35	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Grand Rapids	784	31.5	17.3	83.6	60.1	47.8	24	102	-22	1259	6894	3.46	1.75	31.19	9.15	.03	4.26	21.3	72.1	12.0	86	77	81	83	51	55	10.9	8.1	65	28	69	72	95	198	137	25	36	18	13	148	6
Lansing	852	31.1	17.4	83.4	59.9	47.6	5	94	-15	1262	6909	3.73	1.95	31.18	6.09	.35	4.35	9.9	43.3	11.0	79	68	73	82	53	53	13.6	10.1	63	30	74	88	98	179	138	14	33	24	5	158	18
Marquette (U)	677	25.7	13.2	75.7	57.6	42.6	27	102	-21	1411	8393	3.46	1.65	31.61	10.20	.21	4.65	19.4	103.5	16.1	75	68	72	76	63	66	8.9	7.1	59	32	66	62	105	198	155	30	28	17	5	160	11
Muskegon	626	31.3	18.7	80.9	59.6	47.1	4	93	-12	1240	7018	3.06	1.80	30.07	8.54	.19	3.51	25.7	83.2	20.1	81	77	78	86	59	59	11.1	8.4	---	---	---	82	91	192	139	28	36	24	2	140	8
Sault Ste. Marie	721	23.1	7.4	75.6	52.5	40.0	23	98	-25	1541	9255	3.81	1.50	31.22	6.93	.16	3.58	21.0	98.6	14.3	84	77	82	88	61	67	10.1	8.4	---	34	62	67	94	204	160	33	29	47	2	177	27
MINNESOTA						77	114	-59					.00	10.75																									
Duluth (U)(1959)	1162	18.7	1.9	75.8	55.8	39.2	84	106	-41	1696	9574	3.72	1.00	26.67	11.52	.07	5.35	11.1	56.0	23.0	78	74	74	87	61	66	12.3	10.5	75	46	67	110	119	136	126	16	31	37	2	173	41
Duluth	1426	17.9	-.6	77.1	54.9	38.2	3	95	-33	1745	9927	4.27	.96	28.97	8.48	.13	4.05	14.9	73.5	25.4	72	63	65	86	61	61	12.5	10.4	75	51	66	80	101	184	132	22	34	52	2	181	52
International Falls	1179	14.2	-8.1	78.4	52.8	36.2	24	98	-41	1919	10606	3.87	.71	24.69	11.26	.10	4.82	9.9	57.8	13.9	73	68	70	88	57	58	9.0	7.4	---	---	---	83	103	179	135	17	30	14	4	198	66
Minneapolis	834	22.2	2.5	84.7	61.2	43.8	4	99	-32	1631	8392	4.00	.70	24.78	8.03	T	4.12	6.2	41.5	16.2	76	67	69	89	59	59	10.5	9.4	92	50	69	102	103	160	112	12	35	11	12	159	39
Rochester	1297	23.0	6.2	84.0	59.5	44.3	4	95	-31	1562	8179	4.46	.80	28.46	5.48	.07	3.28	5.3	51.1	8.4	77	72	74	88	65	65	12.9	9.0	---	---	---	91	98	176	114	15	47	38	3	166	37
St. Cloud	1034	20.4	-.2	83.1	58.9	42.0	24	103	-40	1702	8879	4.49	.72	25.92	9.34	.01	4.62	6.6	41.0	12.2	77	70	72	87	55	57	8.2	7.0	---	---	---	97	105	163	108	13	36	20	11	178	44
MISSISSIPPI						75	115	-16					.00	12.35																									
Jackson	330	58.3	37.6	91.9	71.2	65.1	7	100	-1	546	2239	5.57	1.94	49.33	11.16	.04	5.29	0.6	2.3	9.1	83	61	67	90	57	63	7.7	4.9	57	44	67	107	110	148	116	1	72	15	83	43	*
Meridian	294	59.4	36.8	92.6	70.3	64.8	18	104	0	543	2289	6.32	2.22	53.13	15.29	T	6.95	0.6	1.9	15.0	89	64	71	93	57	69	7.6	5.4	---	---	---	126	109	130	103	*	57	20	92	50	*
Vicksburg (U)	234	57.4	40.5	90.4	73.2	65.9	26	101	2	512	2041	5.73	2.04	49.50	16.58	T	9.97	1.1	1.9	10.0	83	62	70	93	62	71	9.3	6.7	56	44	66	109	117	139	105	1	63	11	66	22	0
MISSOURI						76	118	-40					.00	12.25																									
Columbia	778	39.3	21.3	89.7	67.6	55.0	25	113	-18	1076	5046	4.70	1.71	36.96	13.30	.09	4.05	4.7	19.4	10.3	79	66	69	85	55	56	11.0	8.0	63	49	74	114	104	147	107	6	55	15	42	109	5
Kansas City	742	38.9	22.4	90.9	71.0	56.1	4	101	-9	1063	4868	4.57	1.24	34.07	11.94	.04	5.96	6.0	20.4	12.8	72	59	59	81	60	55	9.9	9.0	72	51	76	120	103	142	99	6	49	13	45	96	7
St. Joseph	809	37.2	17.1	91.0	67.8	31.5	17	107	-13	1172	5484	5.93	1.09	34.18	13.73	.03	7.12	6.4	21.8	11.3	79	66	70	88	59	59	11.7	8.5	---	46	62	125	100	140	96	6	58	20	44	128	8
St. Louis (U)(1958)	465	41.0	25.6	89.6	71.6	57.3	23	112	-12	983	4469	4.10	1.88	37.86	20.45	.03	8.78	3.8	14.6	12.4	b77	b65	b68	b73	b50	b55	12.6	9.5	82	45	72	128	106	131	110	6	51	8	46	83	2
St. Louis	535	40.2	23.5	90.2	68.9	56.0	3	105	-11	1026	4809	4.29	1.97	35.31	7.97	.25	3.29	4.3	17.2	11.2	79	63	68	83	58	57	10.1	7.3	45	49	70	104	106	155	103	7	42	10	32	107	7
Springfield	1265	43.4	23.8	90.3	67.2	56.5	4	101	-10	973	4561	5.28	1.96	41.08	18.75	.08	6.85	3.1	13.0	12.5	76	59	64	89	60	60	13.0	9.9	66	47	71	114	98	153	106	5	59	20	43	105	4

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) NORMAL (1931-1960) January: Daily max.	January: Daily min.	July: Daily max.	July: Daily min.	Annual	Extremes: Length yrs.	Record highest	Record lowest	Normal degree days (1931-1960) January	Season	Precipitation (inches) NORMAL (1931-1960): Wettest month	Driest month	Annual	Extremes: Wettest month	Driest month	Maximum in 24 hours	Snow, sleet: Mean total January	Mean total Seasonal	Extreme: Maximum in 24 hours	Relative humidity (percent): January 7:00 a.m. EST	January 1:00 p.m. EST	January 7:00 p.m. EST	July 1:00 a.m. EST	July 1:00 p.m. EST	July 7:00 p.m. EST	Wind Speed (m.p.h.): Mean hourly January	Mean hourly July	Fastest mile	Sunshine (percent of possible): January	July	Annual mean number of days: Sunrise to sunset: Cloudy	Partly cloudy	Clear	Precipitation .01 inch or more	Thunderstorms	Heavy fog visibility 1/4 mile or less	Temperature: Max 90° and above	Max 32° and below	Min 32° and below	Min 0° and below
MONTANA							97	117	-70								0.00	10.10																						
Billings	3567	33.2	13.1	88.5	57.8	47.2	3	105	-26	1296	7083	2.55	.54	13.23	7.64	T	2.83	8.4	54.3	23.7	63	59	54	59	38	29	12.9	9.8	73	51	78	91	121	153	93	19	30	18	33	140	19
Butte (1961)	5530	28.0	.4	79.8	45.0	38.3	29	100	-52	1575	9760	2.28	.55	12.69	5.40	T	2.02	7.1	51.0	13.0	--	--	--	--	--	--	6.9	8.0	--	--	-	79	107	179	105	19	41	6	4	228	43
Glasgow	2277	19.6	-.1	85.3	56.1	41.4	8	104	-37	1711	8996	2.98	.41	12.27	5.36	.03	3.98	4.1	22.0	5.0	83	78	80	70	39	30	---	--	---	---	---	90	104	171	82	8	29	11	23	179	41
Great Falls	3662	31.6	13.5	83.7	56.1	45.3	25	106	-35	1333	7531	2.90	.60	14.07	8.13	T	3.20	8.7	53.3	11.0	66	62	61	63	36	30	10.8	10.7	82	53	79	87	107	171	98	18	28	13	16	145	23
Havre (U)(1961)	2582	26.3	6.1	85.9	56.6	43.6	57	107	-57	1513	8213	2.98	.39	12.31	7.09	T	2.94	7.3	37.4	22.9	82	71	--	74	38	--	8.8	7.2	70	49	78	121	124	120	90	13	25	5	22	172	38
Havre	2082	25.2	2.6	86.3	53.6	42.1	3	111	-35	1584	8685	2.73	.43	11.87	3.36	.05	1.66	4.0	18.3	2.9	71	65	--	71	37	--	11.1	8.0	71	55	78	100	99	146	78	7	23	5	28	174	35
Helena	3828	28.8	8.4	84.4	52.3	43.4	22	103	-42	1438	8129	2.23	.43	10.85	4.74	.02	1.99	8.2	47.4	21.5	72	68	66	71	41	32	6.7	8.0	73	52	79	83	109	173	97	14	38	8	14	181	26
Kalispell	2966	25.6	9.0	82.7	48.6	41.6	4	105	-29	1479	8630	2.21	.96	15.42	4.44	T	1.99	18.8	66.2	15.4	--	81	--	-	38	--	6.5	5.9	--	--	--	76	81	208	131	22	25	29	19	190	18
Miles City	2629	27.4	5.6	90.2	60.4	45.8	26	110	-37	1504	7723	2.71	.37	12.17	9.78	T	2.67	5.7	28.3	10.5	71	66	65	69	38	31	9.1	9.8	--	--	--	101	108	156	88	12	30	9	39	172	32
Missoula	3190	28.0	10.3	85.0	49.0	43.2	4	105	-27	1420	8125	1.91	.72	12.83	4.19	.02	1.82	12.3	46.0	11.2	81	81	75	77	42	30	4.9	6.6	72	31	79	74	84	207	123	15	26	27	24	191	15
NEBRASKA							88	118	-47								.00	13.15																						
Grand Island	1841	36.1	12.0	92.7	64.7	51.5	3	105	-28	1268	6180	3.85	.56	21.85	9.60	.00	5.41	6.1	28.7	8.7	77	64	70	90	58	55	11.6	11.1	-	--	--	125	101	139	84	9	49	16	34	159	26
Lincoln (U)	1150	34.0	16.2	92.3	67.9	52.8	4	105	-16	1237	5864	4.30	.90	27.43	11.40	.05	5.38	7.4	30.8	10.4	-	--	--	--	-	-	9.8	9.2	64	60	75	116	107	142	97	9	49	7	39	130	17
Lincoln Univ. (1934)	1184	34.3	15.7	90.5	67.8	52.7	68	115	-29	1240	5865	4.10	.82	25.73	14.21	.00	8.38	5.7	26.3	12.4	--	-	-	--	--	--	10.1	9.2	66	47	76	131	112	122	95	-	47	-	10	41	11
Norfolk	1544	30.1	8.6	89.2	64.7	48.9	18	113	-26	1414	6979	4.26	.73	23.95	9.11	T	3.46	5.7	29.4	8.3	77	64	69	84	54	51	---	--	---	---	---	119	101	145	88	10	49	11	43	157	21
North Platte	2779	37.3	10.7	90.0	62.2	49.2	12	112	-23	1271	6684	3.25	.40	18.27	8.01	T	3.61	4.7	33.4	9.7	80	62	65	85	49	44	9.7	10.1	72	60	74	122	110	143	82	10	49	18	42	174	15
Omaha	978	31.7	12.9	89.7	67.3	51.5	9	107	15	1324	6218	4.53	.80	27.56	10.81	T	3.62	8.5	32.7	13.7	78	66	68	85	54	46	11.4	9.4	73	54	76	116	106	143	97	9	50	14	36	140	14
Scottsbluff	3950	38.7	10.9	90.2	59.1	48.4	21	107	-32	1246	6763	3.10	.29	14.38	8.33	T	3.74	6.4	38.2	12.1	72	55	58	76	45	39	10.3	9.7	---	---	---	122	110	133	84	13	45	11	39	177	15
Valentine	2387	33.3	6.7	90.6	60.2	46.9	9	106	-29	1395	7425	3.11	.34	17.30	8.96	T	3.19	3.8	24.1	8.2	81	67	68	85	51	42	10.0	10.1	72	70	77	124	102	139	79	9	46	6	30	178	27
NEVADA							75	122	-50								.00	7.13																						
Elko	5075	36.1	10.0	90.8	48.3	43.4	33	104	-43	1314	7440	1.16	.30	9.05	3.35	.00	1.62	10.4	36.6	16.7	78	72	63	54	24	18	5.3	6.3	-	---	---	136	100	129	76	13	22	6	43	213	18
Ely	6257	36.8	8.7	86.8	48.1	44.3	25	99	-27	1308	7733	.95	.49	8.33	3.53	.00	1.50	8.4	43.6	13.1	71	58	54	48	21	20	11.1	10.8	71	64	81	135	107	123	69	14	31	2	15	217	19
Las Vegas	2162	65.2	32.0	104.9	75.8	66.1	4	113	8	673	2640	.53	.04	3.90	2.59	.00	2.59	1.3	1.4	5.0	48	33	24	23	14	10	6.8	10.2	--	77	86	220	80	65	23	1	14	1	132	39	9
Reno	4404	46.6	17.2	91.4	44.9	49.0	22	104	-16	1024	6160	1.19	.17	7.15	5.25	.00	2.37	6.4	23.9	16.9	81	67	52	32	26	19	6.0	6.5	59	66	91	169	91	105	47	8	13	9	46	189	3
Winnemucca	4299	39.7	14.7	92.0	49.9	47.4	14	105	-24	1172	6761	1.05	.15	8.63	2.86	.00	1.79	6.4	22.4	9.9	77	66	58	44	20	14	7.7	8.2	66	48	85	139	88	138	66	8	18	3	62	193	9
NEW HAMPSHIRE							87	106	-46								.00	8.00																						
Concord	339	31.7	10.6	82.8	56.4	45.6	22	100	-37	1358	7383	3.75	2.48	38.80	10.10	.41	4.47	17.7	61.3	19.0	78	59	70	80	50	67	7.2	5.6	72	49	62	97	107	161	125	27	22	54	13	169	18
Mt. Washington Obs.	6262	14.7	2.2	54.9	43.3	27.0	31	71	47	1820	13817	7.00	5.21	74.09	18.23	.75	7.03	29.1	197.4	32.0	82	83	82	91	88	91	46.4	25.2	231	34	31	52	79	234	204	58	16	307	0	242	64
NEW JERSEY							79	110	34								.00	14.81																						
Atlantic City (U)(1958)	8	42.1	29.1	79.3	67.9	54.1	85	101	-9	905	1741	4.72	2.98	41.77	14.87	.01	9.21	4.2	14.6	18.0	79	68	74	81	72	82	16.2	13.3	91	54	67	118	122	124	122	7	23	21	3	75	*
Atlantic City (NAF Exp)	58	42.9	26.6	83.8	66.3	54.1	20	102	-8	936	4812	4.90	2.83	42.36	13.09	.10	6.46	4.4	14.6	10.7	77	58	69	83	55	68	12.6	9.7	---	66	63	102	107	156	114	4	24	44	13	93	*
Newark	11	39.5	23.0	86.1	66.5	53.7	22	102	7	1014	5067	4.43	2.80	42.38	11.84	.21	4.17	6.8	29.7	26.0	72	59	64	74	51	63	11.1	8.7	---	---	---	99	110	156	123	8	26	23	25	94	*
Trenton (U)	56	40.0	26.2	85.2	66.7	53.9	31	106	14	989	4980	4.77	2.59	41.28	14.10	.05	4.79	5.2	22.6	16.6	--	--	--	--	--	--	9.8	7.7	64	50	67	101	115	149	122	7	33	-	18	90	*
NEW MEXICO							72	116	30								.00	11.28																						
Albuquerque	5315	46.4	23.5	92.2	64.8	56.9	4	103	7	930	4303	1.33	.38	8.13	3.25	.00	1.92	2.0	10.1	14.2	68	49	40	59	34	26	7.9	9.1	90	71	76	176	111	78	58	1	14	4	63	115	2
Clayton	4969	46.2	20.2	88.4	60.6	53.1	19	102	-21	986	5158	2.74	.33	14.51	7.77	.00	4.67	3.7	19.3	12.7	63	43	50	77	42	43	---	---	---	---	---	169	98	98	66	6	53	11	40	142	3
Raton	6379	48.3	12.6	86.6	52.9	48.9	19	98	-31	1116	6228	2.63	.26	14.75	7.61	.00	3.97	5.2	24.8	8.0	--	46	--	--	38	--	---	---	---	---	---	135	132	98	78	9	77	8	18	182	8
Roswell	3617	64.1	18.6	93.1	66.7	57.5	4	107	24	887	1072	1.82	.34	11.62	5.64	.00	3.37	3.4	10.0	15.3	78	49	39	79	42	33	8.5	9.5	75	57	80	183	99	83	50	4	42	9	111	129	1
Silver City	5371	52.6	26.4	90.5	63.9	58.2	3	102	9	791	3703	2.40	.29	10.76	4.47	.00	2.08	3.1	5.5	6.0	--	47	44	--	36	37	--	---	---	---	---	193	99	73	62	2	60	1	48	164	*
NEW YORK							71	106	32								.00	11.17																						
Albany	277	31.0	14.4	83.7	60.5	47.6	17	100	-26	1311	6875	3.38	2.20	35.08	8.96	.20	4.08	15.6	62.1	17.9	78	65	73	77	50	62	9.7	7.3	71	44	65	75	114	176	132	15	29	23	13	146	12
Binghamton (U)	858	34.2	18.9	83.1	60.4	48.8	73	103	-28	1190	6451	3.81	2.38	36.68	9.59	.16	4.55	12.4	53.1	21.0	--	--	--	--	--	--	---	---	-	---	---	---	---	---	152	13	--	9	134	7
Binghamton	1590	30.1	15.4	79.3	58.5	45.8	12	96	-20	1308	7358	3.85	2.18	36.24	9.46	.26	3.88	19.9	90.3	23.0	82	74	76	85	57	65	12.1	8.5	72	35	66	50	103	212	162	26	33	56	3	130	8
Buffalo	693	29.8	17.2	80.1	59.4	46.3	3	94	-20	1287	7213	3.60	2.54	35.65	9.13	.11	3.88	26.8	103.5	19.9	74	71	75	79	57	64	14.9	10.9	91	33	70	61	109	195	167	30	29	21	3	146	6
New York (C)(1960)	10	39.9	25.8	82.3	66.9	53.4	90	102	14	995	3050	4.34	3.04	42.03	14.51	.11	9.40	7.3	30.1	25.8	72	a62	66	76	a58	67	16.4	14.5	113	51	65	104	131	130	124	8	30	26	7	94	*
New York Central Park	132	39.5	26.9	85.1	68.2	54.5	95	106	-15	986	4871	4.44	2.84	42.37	16.85	.02	11.17	7.6	29.7	26.4	68	61	61	76	56	64	11.1	7.8	70	50	66	106	125	134	121	8	17	-	16	82	*
New York (LaGuardia)	11	39.6	27.5	84.8	68.8	54.7	2	97	-2	973	4811	5.08	3.09	44.22	16.05	.03	7.11	6.6	30.7	22.8	70	61	66	71	49	58	14.7	10.5	76	--	--	95	116	154	121	8	24	14	12	89	1
Rochester	543	32.6	17.8	82.5	60.7	48.0	22	100	-16	1234	6748	3.01	2.38	31.50	9.70	.22	3.13	19.1	82.4	18.7	82	73	79	81	51	60	11.5	7.9	73	36	71	65	114	186	154	24	30	13	13	137	5
Syracuse	410	31.5	16.5	82.4	62.6	48.0	13	98	-24	1271	6756	3.60	2.84	37.60	8.41	.21	4.27	25.4	110.8	21.4	77	69	74	77	52	60	10.6	8.6	63	34	69	73	100	192	169	33	29	9	19	136	8
NORTH CAROLINA							77	109	-23								.00	22.22																						
Asheville (U)	2203	49.0	30.4	85.0	63.7	56.5	33	99	7	784	4042	4.31	2.22	37.88	13.75	T	6.78	2.5	11.9	15.8	81	59	66	89	57	70	9.4	5.6	52	18	60	103	124	136	128	3	30	47	13	84	*
Cape Hatteras (R)	7	53.2	39.9	83.8	72.2	62.2	6	94	14	580	2612	6.42	2.99	54.47	14.63	.45	8.11	.6	2.9	7.0	80	67	78	85	70	84	12.0	10.4	--	62	70	106	101	158	121	1	45	16	3	34	0
Charlotte	735	50.1	33.3	88.8	68.5	60.8	3	100	2	670	3125	4.88	2.53	43.38	10.89	T	4.84	1.8	4.4	8.0	79	54	61	89	56	65	8.3	6.6	59	33	70	111	108	146	110	1	44	24	46	75	0
Greensboro	897	49.6	29.8	87.7	66.9	58.2	34	102	-7	784	3805	4.79	2.68	42.16	13.26	.13	7.49	2.8	7.9	14.3	82	58	70	86	57	72	8.3	6.7	63	31	64	114	109	142	119	2	49	31	37	86	*
Raleigh (U)(1961)	400	51.3	34.0	88.9	69.6	61.1	1	1	1	691	3075	5.64	2.68	45.83	1	f	1	1	1	1	--	--	--	--	--	--	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Raleigh	133	51.9	31.3	88.1	67.6	59.5	19	105	1	725	3393	5.49	2.71	43.58	12.94	.44	5.20	2.6	6.8	9.1	81	56	68	87	56	72	8.3	6.5	---	58	66	117	106	142	116	2	46	34	16	78	0
Wilmington	28	58.1	37.3	89.0	70.3	63.8	11	104	10	546	2347	7.68	2.85	51.29	15.51	.17	8.24	0.2	1.6	5.3	84	58	75	88	62	78	10.4	9.3	88	57	65	122	111	132	115	1	46	20	47	42	0
Winston-Salem	963	49.8	31.5	88.2	67.8	59.1	9	100	1	753	3595	4.63	2.78	44.13	10.86	.12	3.60	3.3	9.2	10.9	72	52	60	83	56	66	9.3	7.4	---	---	---	119	103	143	116	3	43	32	35	78	0
NORTH DAKOTA							72	121	-60								.00	7.70																						
Bismarck	1647	19.6	1.9	85.7	58.7	41.8	4	108	-34	1739	9005	3.40	.36	15.15	8.29	T	3.25	6.6	35.9	13.5	71	66	66	79	47	41	10.3	9.9	72	54	76	97	106	162	96	11	35	12	28	182	46
Devils Lake (U)(1961)	1471	14.2	4.7	81.7	56.9	38.7	38	112	-46	1866	9940	3.18	.40	17.61	8.55	T	4.82	6.2	35.4	13.4	76	72	76	86	53	52	9.7	8.4	57	33	71	112	109	144	101	11	30	9	10	189	60
Fargo	896	18.3	2.8	82.8	59.0	41.0	4	100	-31	1804	9271	3.04	.51	18.45	8.52	.02	4.72	5.7	31.5	11.2	71	68	69	86	55	55	13.6	11.1	88	49	69	91	110	164	99	10	33	12	17	178	34
Williston (U)	1899	19.4	.1	83.9	58.7	41.6	2	100	-41	1711	8996	3.31	.48	13.70	6.20	T	5.03	4.1	29.8	5.7	74	66	67	87	52	44	10.9	9.4	63	30	69	85	106	174	94	10	21	9	19	174	51

See reference notes at end of table

NORMALS, MEANS AND EXTREMES

State and Station	Elevation of ground (feet)	Temperature (°F) NORMAL (1931-1960) January: Daily maximum	January: Daily minimum	July: Daily maximum	July: Daily minimum	Annual	Extremes: Length of record (yrs)	Record highest	Record lowest	Normal degree days (1931-1960): January	Seasonal	Precipitation (inches) NORMAL (1931-1960): Wettest month	Driest month	Annual	Extremes: Wettest month	Driest month	Maximum in 24 hours	Snow, sleet: Mean total: January	Seasonal	Extreme: Maximum in 24 hours	Relative humidity (percent): January: 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	July: 7:00 a.m. EST	1:00 p.m. EST	7:00 p.m. EST	Wind Speed (mph): Mean hourly: January	July	Fastest mile	Sunshine (percent of possible): January	July	Annual mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog visibility 1/4 mile or less	Temperature: Max 90 and above	Min 32 and below	Min Zero and below
OHIO							90	113	-39							0.00	8.70																											
Akron-Canton	1208	34.6	19.9	82.2	60.9	49.2	14	100	-11	1169	6339	4.26	2.25	36.43	11.43	.20	4.18	8.7	47.5	8.5	84	74	80	83	55	65	11.9	7.6	---	---	---	---	74	101	190	150	15	40	28	10	136	4
Cincinnati (1961)	869	39.7	23.8	85.9	64.3	53.6	17	---	---	1021	5195	4.04	2.17	39.16	-----	----	---	----	----	----	82	70	74	84	52	60	---	---	---	---	---	---	108	115	142	---	---	---	---	---	---	---
Cincinnati Abbe Obs.	761	41.3	26.1	87.5	66.3	55.2	48	109	-17	970	4806	4.18	2.24	39.51	13.68	.10	4.77	5.1	18.7	11.0	--	--	--	--	--	--	8.3	5.2	49	41	71	---	---	---	133	7	51	---	29	98	2
Cleveland	777	34.8	20.3	81.8	60.2	48.8	3	93	-19	1159	6432	3.52	2.33	35.35	9.50	.36	3.73	9.8	51.2	15.0	78	69	73	83	57	61	12.6	9.0	74	29	68	74	103	188	153	18	38	14	9	132	10
Columbus	812	38.8	23.0	86.6	62.9	52.7	4	97	-15	1057	5444	4.16	2.11	36.67	9.75	.11	4.81	6.4	27.1	8.7	77	67	70	87	56	59	9.8	6.1	63	37	69	79	107	179	135	9	42	20	16	129	8
Dayton	1002	36.9	22.2	85.3	65.1	52.3	19	102	-16	1097	5622	4.10	2.23	36.04	10.89	.10	4.30	6.0	25.8	10.0	82	72	77	83	54	59	12.1	8.2	78	38	68	82	101	182	128	8	42	22	17	117	4
Mansfield	1296	34.8	19.8	82.6	60.8	49.1	4	92	-20	1169	6403	4.23	2.27	38.16	5.21	.43	2.79	6.8	44.0	7.5	83	75	--	83	55	--	---	---	---	---	---	---	72	108	185	136	15	38	27	2	137	12
Portsmouth (R)(1955)	670	42.7	23.4	87.7	61.6	54.1	34	107	-25	989	4965	4.26	2.28	38.56	9.92	.51	3.43	8.8	32.9	10.1	b71	b59	b59	b88	b47	b54	7.7	3.4	60	---	---	39	75	142	106	9	63	64	36	113	0
Sandusky (U)(1961)	603	35.7	21.8	83.7	65.5	51.3	34	105	-12	1122	5859	3.73	1.92	33.16	12.51	.19	5.95	6.2	26.9	12.3	--	--	--	--	--	--	10.1	6.9	75	35	75	93	115	157	137	10	37	8	19	111	2
Toledo	676	34.1	18.4	85.1	60.2	49.0	8	97	-17	1200	6494	3.79	1.88	30.50	6.71	.27	2.50	8.8	33.7	9.8	82	70	76	87	55	61	10.4	7.6	72	43	71	79	106	180	129	10	41	20	14	144	9
Youngstown	1178	35.4	21.2	82.7	59.3	49.5	20	100	-18	1138	6194	4.32	2.50	39.27	9.87	.27	4.31	11.8	56.3	20.7	83	73	79	83	53	64	11.8	7.9	---	---	---	75	98	192	162	18	36	30	9	136	5
OKLAHOMA							72	120	-27							.00	19.75																										
Oklahoma City	1280	45.9	27.1	91.8	70.2	59.5	10	107	-4	884	3844	5.19	1.31	30.82	10.78	T	4.82	3.5	9.3	8.4	82	64	65	85	55	51	14.6	12.1	87	57	77	148	94	123	82	3	51	19	68	85	1
Tulsa	650	46.9	27.5	92.9	71.4	60.3	4	104	-3	862	3688	5.26	1.62	37.08	18.00	T	7.54	3.8	9.4	9.0	80	59	59	82	58	54	11.4	9.1	75	51	70	124	105	136	90	4	54	9	74	89	2
OREGON							74	119	-54							.00	31.10																										
Astoria	8	46.5	34.8	67.6	52.5	50.6	10	100	14	753	5259	13.65	1.27	80.44	21.89	.01	3.55	1.4	3.6	5.9	87	84	78	91	75	69	8.6	8.5	---	---	---	---	49	69	247	199	2	9	43	1	37	0
Burns (U)	4151	35.2	14.3	86.8	52.1	46.7	13	103	-26	1246	6957	1.62	.29	10.96	3.97	.00	1.57	15.6	49.0	10.9	82	75	68	53	33	20	---	---	---	---	---	---	128	85	152	90	17	14	12	21	182	5
Eugene	359	45.2	32.8	82.2	51.0	52.5	20	105	-4	803	4726	6.61	.27	39.56	19.49	T	4.82	4.4	6.7	7.2	--	86	81	--	54	37	8.3	8.3	---	---	---	---	77	88	200	140	3	6	58	14	59	*
Meacham	4050	32.7	19.3	77.6	49.2	43.5	19	105	-23	1209	7874	4.53	.50	33.87	9.29	.00	3.00	31.1	48.9	22.9	--	80	--	--	40	--	---	---	---	---	---	---	91	71	203	153	45	16	31	3	169	5
Medford	1298	44.4	29.4	89.3	54.7	53.4	3	109	0	871	4713	3.38	.18	19.78	9.16	.00	3.69	3.8	7.8	7.9	91	87	67	77	46	27	4.3	5.7	---	---	---	---	119	79	167	101	3	9	47	44	100	1
Pendleton	1482	38.3	25.1	88.3	58.8	52.3	28	113	-22	1032	5254	1.49	.22	12.38	3.03	.00	1.49	8.3	17.8	13.3	82	78	77	54	34	23	7.8	9.8	---	---	---	---	106	92	167	101	6	11	30	32	85	3
Portland (U)	30	44.9	35.5	79.2	57.9	54.6	61	107	3	769	4109	7.42	.39	42.37	17.45	.00	5.01	5.2	9.0	16.0	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	151	3	---	---	8	22	0
Portland	21	43.7	33.0	78.6	55.7	52.9	23	105	-3	825	4635	6.38	.41	37.18	12.83	T	2.60	5.3	8.1	10.6	86	81	76	84	62	46	10.0	7.4	88	24	67	66	69	230	154	3	7	31	8	4	*
Roseburg	505	47.2	33.4	84.0	51.8	53.4	11	106	-1	766	4491	5.69	.21	33.11	15.74	T	4.80	3.4	6.6	9.4	--	86	73	--	54	34	3.9	6.0	50	26	80	76	89	200	135	2	6	60	21	56	*
Salem	196	45.5	32.5	82.7	51.4	52.8	26	108	-10	806	4656	7.37	.35	41.75	15.40	.00	3.16	3.9	6.6	10.8	88	83	78	88	55	39	8.6	6.6	---	---	---	---	75	87	203	151	2	6	41	16	60	*
Sexton Summit (R)	3836	38.3	28.9	74.5	52.6	47.8	19	100	-2	973	6317	5.59	.25	33.12	14.71	.00	5.20	23.1	95.4	22.6	--	79	52	--	60	49	12.5	12.0	---	---	---	---	123	66	176	132	29	6	61	2	110	*
PACIFIC AREA																																											
Canton Island	8	88.4	77.8	89.4	77.7	83.5	17	98	70	0	0	4.35	1.10	29.43	16.39	T	5.21	.0	.0	.0	79	79	65	80	80	65	15.1	13.1	---	---	---	---	74	146	145	100	0	4	0	171	0	0
Eniwetok	13	84.6	77.8	86.5	79.1	82.3	10	93	71	0	0	9.09	1.02	51.46	18.07	.12	4.04	.0	.0	.0	76	76	67	81	83	75	16.7	12.0	---	---	---	---	---	---	---	201	0	5	0	11	0	0
Guam (R)	361	83.9	72.4	86.7	72.3	79.3	7	95	59	0	0	13.36	2.64	88.53	21.86	.67	7.26	.0	.0	.0	--	--	--	--	--	--	7.8	5.0	80	49	44	0	---	---	290	0	25	*	6	0	0
Johnston Island (1961)	7	----	----	----	----	----	6	88	63	0	0	-----	----	-----	15.80	.22	9.51	.0	.0	.0	76	67	73	77	70	76	12.9	15.2	49	71	84	38	221	106	170	0	1	0	0	0	0
Koror (R)	94	86.0	74.6	86.6	75.1	80.9	14	93	69	0	0	15.76	7.13	147.69	34.82	1.65	11.57	.0	.0	.0	88	91	82	90	92	82	7.5	5.6	31	45	50	1	49	315	275	0	40	0	45	0	0
Kwajalein, Marshall Is.	8	82.2	78.0	85.2	77.9	81.1	11	97	69	0	0	12.13	2.15	94.76	30.38	.61	6.68	.0	.0	.0	88	78	70	85	85	78	18.2	10.7	---	---	---	31	104	230	244	0	13	0	29	0	0
Majuro, Marshall Is.	10	84.1	76.3	84.6	75.7	80.4	8	91	69	0	0	15.92	6.98	143.63	24.26	.86	10.01	.0	.0	.0	81	82	76	83	84	78	12.6	8.6	38	62	53	8	68	289	260	0	18	0	*	0	0
Ponape (R)	123	85.6	75.3	86.6	72.7	80.1	13	96	67	0	0	20.31	9.74	191.92	38.65	2.40	22.48	.0	.0	.0	85	86	77	94	95	79	7.2	3.5	36	48	55	3	58	304	302	0	33	0	37	0	0
Truk, Moen Island	5	84.9	76.5	86.1	74.8	80.7	13	94	70	0	0	14.12	6.29	137.52	34.89	.84	14.92	.0	.0	.0	82	83	77	89	91	80	7.6	5.1	45	52	46	3	56	306	274	0	22	0	5	0	0
Wake Island	11	81.5	73.3	86.6	77.4	80.0	16	92	64	0	0	7.08	1.14	36.86	e17.66	.27	e15.00	.0	.0	.0	74	75	66	81	82	72	13.2	12.4	---	---	---	119	157	89	182	0	7	0	6	0	0
Yap (R)	53	85.3	75.6	87.6	75.1	81.3	15	97	69	0	0	14.70	4.64	121.50	29.44	1.08	10.45	.0	.0	.0	86	88	79	90	91	80	9.8	5.7	72	52	54	7	47	311	263	0	14	0	54	0	0
PENNSYLVANIA							76	111	-42							.00	34.50																										
Allentown	376	36.7	21.3	85.2	63.0	51.1	20	102	-12	1116	5810	4.82	2.64	44.12	12.10	.15	4.79	7.6	32.1	17.5	78	62	70	81	51	62	11.0	7.3	---	---	---	95	116	154	125	9	34	30	17	129	3
Erie	732	34.0	20.5	80.1	62.0	48.7	4	94	-15	1169	6451	3.67	2.32	37.50	9.87	.58	4.84	17.8	77.6	23.0	77	70	75	75	60	60	12.2	8.5	---	---	---	71	96	198	152	26	39	16	3	125	7
Harrisburg	335	38.9	24.6	86.0	65.3	53.3	25	102	-8	1029	5203	3.90	2.31	37.65	9.07	.04	4.36	9.2	34.4	21.0	72	58	64	78	51	61	8.2	6.2	68	46	69	85	105	175	124	9	34	22	24	107	1
Philadelphia (U)(1954)	26	41.5	28.2	85.3	69.0	55.7	84	106	-11	933	4523	4.62	2.61	41.44	12.10	.09	5.89	5.7	21.2	21.0	74	65	68	75	56	66	10.9	8.7	88	45	64	109	122	134	123	6	27	10	14	76	*
Philadelphia	5	40.3	24.3	85.9	65.2	53.5	4	97	-5	1014	5101	4.63	2.78	42.48	9.70	.09	5.45	5.2	20.0	14.6	75	60	68	79	54	62	10.2	8.1	73	49	63	90	115	160	118	5	27	30	12	113	1
Pittsburgh (Greater AP)	1137	36.5	21.2	83.3	60.9	50.3	4	95	-18	1119	5987	3.91	2.19	36.14	8.20	.16	3.56	9.3	43.8	14.7	77	66	68	85	54	61	10.6	7.6	---	41	66	62	104	199	149	13	36	17	6	134	8
Reading (U)	266	39.1	26.3	86.4	67.3	54.3	23	102	-2	1001	4945	4.26	2.64	41.43	14.85	.17	6.08	8.0	29.5	18.7	71	--	--	75	--	--	11.3	8.5	80	45	63	94	111	160	123	8	32	7	23	92	*
Scranton (U)(1955)	746	35.4	21.0	83.2	61.9	50.1	f	f	f	1141	6047	4.43	2.02	36.61	f	f	f	f	f	f	f	--	f	f	--	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Scranton	930	32.6	20.7	80.6	62.2	48.7	8	96	-11	1187	6453	4.79	1.99	38.48	7.78	.03	3.09	9.3	50.6	15.5	75	63	68	82	54	62	9.0	7.5	60	40	58	72	111	182	137	14	33	28	7	139	5
Shippingport (1957)	736	33.8	20.7	80.5	60.0	51.0	2	92	-3	1163	5647	5.17	1.40	38.96	7.01	.71	3.30	3.6	17.4	9.0	g76	g64	--	g80	g55	--	3.3	2.0	63	---	---	---	---	---	144	5	40	21	10	126	1
Williamsport	527	36.1	21.4	85.3	61.8	50.7	19	102	-15	1122	5934	4.18	2.51	40.65	9.45	.19	4.38	8.6	42.3	14.7	76	62	69	85	52	64	9.1	7.2	---	---	---	68	118	179	143	12	35	40	17	131	4
RHODE ISLAND							76	102	-23							.00	12.13																										
Block Island	110	38.9	26.3	75.9	63.2	50.3	13	91	-4	1004	5714	4.07	2.56	40.45	11.51	T	8.52	4.6	22.8	16.9	73	65	--	87	72	--	---	---	---	---	---	---	99	110	156	113	7	17	81	*	86	*
Providence	55	37.3	21.0	81.4	62.7	50.1	9	97	-9	1110	5954	4.14	2.76	42.13	11.89	.39	6.63	9.0	39.3	18.3	70	57	64	80	57	70	11.9	10.1	---	56	61	108	104	153	127	11	22	29	6	120	2
SOUTH CAROLINA							79	111	-13							.00	13.25																										
Charleston	41	61.2	39.3	89.2	71.0	65.0	21	103	8	471	2026	7.71	2.09	49.16	17.31	.08	8.84	T	.1	2.1	86	56	74	89	64	81	9.6	8.0	---	62	69	102	113	150	115	*	58	29	49	34	0
Charleston (U)(1961)	9	61.4	39.2	89.4	70.8	65.2	18	103	14	472	1973	8.04	1.92	46.11	17.31	.08	8.84	T	.1	2.1	87	56	75	90	65	82	9.9	8.3	---	65	80	96	116	153	121	*	60	31	48	31	0
Columbia	217	58.2	35.6	92.5	70.7	64.0	16	107	4	570	2484	6.09	2.36	46.82	16.72	T	7.66	.2	1.2	8.8	85	54	69	86	52	65	7.1	6.7	---	62	67	125	104	136	110	*	56	26	87	55	0
Columbia (U)(1954)	332	57.0	38.7	90.2	71.3	64.4	f	f	f	538	2284	5.74	2.00	41.58	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f	f
Florence	146	58.3	36.7	90.9	70.4	64.0	16	108	8	552	2387	6.24	2.18	42.69	13.68	.00	6.36	.1	1.1	4.8	82	52	67	88	56	72	8.1	7.2	---	---	---	119	111	135	110	*	54	28	72	46	0
Greenville (1961)	1018	51.6	35.0	87.9	68.8	61.0	2	98	8	673	3060	4.81	3.00	47.65	10.10	.52	5.79	.5	4.1	6.4	70	41	50	85	56	70	9.4	7.7	70	58	63	107	104	154	116	1	50	23	48	54	0
Spartanburg (1961)	801	52.1	34.7	88.7	69.1	61.2	18	104	3	670	3044	4.70	2.97	46.66	10.33	.13	6.85	.8	3.6	7.1	73	44	51	89	56	70	8.6	6.8	---	---	---	127	87	151	114	1	47	23	48	52	0
Greenville-Spartanburg	957	53.3	34.7	90.0	69.7	61.8	1	97	9	651	2982	4.75	2.84	46.42	9.66	.24	4.45	.0	4.8	2.1	74	49	60	85	55	67	6.3	6.6	47	57	64	137	101	127	99	2	35	29	45	75	0
SOUTH DAKOTA							74	120	-58							.00	13.52																										
Huron	1282	24.1	2.9	89.3	61.6	45.5	4	103	-39	1597	7983	3.14	.48	17.33	7.69	T	4.20	6.2	37.4	17.5	79	73	76	90	56	53	11.8	10.9	77	54	77	105	112	148	93	12	43	15	29	178	46

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) NORMAL (1931–1960) January: Daily maximum	January: Daily minimum	July: Daily maximum	July: Daily minimum	Annual	Extremes: Length yrs	Record highest	Record lowest	Normal degree days (1931–1960) January	Seasonal	Precipitation (inches) NORMAL (1931–1960): Wettest month	Driest month	Annual	Extremes: Wettest month	Driest month	Maximum in 24 hours	Snow, sleet: Mean total January	Mean total Seasonal	Extreme Maximum in 24 hours	Relative humidity (percent) January: 7 00 a.m. EST	1 00 p.m. EST	7 00 p.m. EST	July: 7 00 a.m. EST	1 00 p.m. EST	7 00 p.m. EST	Wind Speed (m.p.h.) Mean hourly: January	July	Fastest mile	Sunshine (percent of possible) January	July	Annual mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet .1 inch or more	Thunderstorm	Heavy fog visibility 1/4 mile or less	Temperature: Max 90° and above	Min 32° and below	Min 0° and below
SOUTH DAKOTA (Cont'd)																																											
Rapid City	3165	34.1	9.8	87.7	59.9	46.8	14	109	-26	1333	7345	3.08	.30	14.71	7.05	T	4.01	5.6	35.8	14.7	70	60	66	70	45	40	10.2	9.9	66	55	71	111	113	141	94	12	46	15	33	166	21
Sioux Falls	1418	25.1	5.2	86.0	62.5	43.7	17	108	-31	1544	7839	4.35	.62	25.16	7.94	T	4.32	6.0	42.6	26.0	71	63	68	84	52	50	10.9	9.4	---	---	---	103	107	155	89	10	47	22	26	168	31
TENNESSEE							81	113	-32							.00	11.00																										
Bristol	1507	47.8	28.7	86.4	64.4	56.4	18	102	-9	828	4228	5.55	2.15	41.06	9.73	.07	3.10	3.7	14.2	16.2	84	64	71	89	57	66	6.9	4.3	-	---	---	89	113	163	134	4	47	41	20	94	1
Chattanooga	670	50.9	32.4	90.0	68.4	60.2	24	106	-7	722	3382	5.64	3.02	51.96	13.68	.20	5.40	1.2	3.8	8.9	82	62	68	88	56	64	7.3	5.2	82	41	63	108	113	144	120	2	56	34	59	73	*
Knoxville	980	50.1	31.6	89.5	68.2	59.6	3	96	-6	747	3551	4.88	2.54	45.85	11.74	T	5.08	3.0	11.7	18.2	79	63	64	90	60	65	8.6	6.5	73	36	58	99	110	156	126	3	49	28	20	75	1
Memphis	263	50.6	33.4	92.1	71.5	62.1	22	106	-13	713	3116	6.07	2.82	49.73	12.29	T	4.94	2.1	5.5	14.3	81	65	71	85	57	60	11.0	7.7	54	45	74	119	102	144	103	1	51	11	70	59	*
Nashville	577	48.8	30.9	90.7	69.6	60.0	24	107	15	778	3578	5.49	2.32	45.14	13.92	T	5.34	3.5	10.7	9.2	84	67	72	86	55	61	8.9	6.1	73	38	64	104	109	152	118	4	56	15	39	75	1
Oak Ridge (R)	900	49.2	30.6	88.7	66.7	58.5	16	105	-8	778	3769	5.95	2.67	54.71	13.27	T	7.48	2.4	9.4	12.0	--	--	--	--	--	--	4.8	4.4	---	---	---	115	95	155	126	3	54	34	38	81	*
Oak Ridge Area	886	48.9	31.2	88.0	66.7	58.5	19	103	-8	772	3742	5.44	2.82	51.52	12.84	.00	7.75	----	----	----	--	--	--	--	--	--	5.7	3.8	---	---	---	--		---	119	---	---		35	78	*
TEXAS							84	120	-24							.00	38.20																										
Abilene	1762	56.4	32.8	94.3	72.1	64.3	10	107	3	642	2624	4.33	.88	23.32	13.19	.00	6.70	1.5	3.8	5.7	73	44	44	82	51	41	12.5	10.9	73	61	77	151	97	117	65	2	41	6	108	46	*
Amarillo	3607	48.8	23.5	92.2	66.0	57.5	3	100	-9	893	4195	3.37	.62	19.67	10.16	.00	6.75	3.9	13.4	12.2	66	44	39	77	45	39	13.0	12.3	84	d69	d77	162	105	98	67	1	19	24	82	98	6
Austin	597	60.3	40.5	95.1	73.9	68.3	3	105	12	468	1711	3.71	1.94	32.38	12.31	.00	7.22	.6	.7	7.0	73	54	52	89	47	39	9.8	8.7	57	47	78	119	113	133	81	*	40	23	126	26	0
Brownsville	16	70.5	52.2	92.5	75.5	73.7	26	104	19	205	600	4.99	1.04	26.75	17.12	T	8.18	T	T	T	89	65	75	93	55	65	12.0	11.9	57	46	80	99	139	127	71	0	24	25	114	2	0
Corpus Christi	43	67.4	47.4	93.5	74.6	71.8	4	103	14	291	914	4.40	1.44	28.34	14.54	.00	7.68	.1	.1	1.1	81	64	64	90	55	62	12.0	11.7	70	48	86	111	118	136	74	*	32	26	112	10	0
Dallas	481	55.8	36.0	94.5	75.3	65.8	5	103	8	601	2363	4.83	1.93	34.55	13.85	T	9.18	1.2	2.0	3.3	77	60	57	81	53	46	10.3	10.2	65	48	77	144	94	127	79	1	41	8	103	40	0
Del Rio (1956) c	1091	62.2	41.6	93.3	76.1	69.8	51	111	11	419	1407	2.51	.80	18.62	13.71	.00	8.88	.4	.7	4.7	81	58	53	80	50	41	7.8	9.7	62	53	75	153	118	94	61	*	24	6	118	14	0
El Paso	3918	56.3	31.3	93.9	68.9	63.6	4	106	8	654	2578	1.29	.29	7.89	6.29	.00	2.89	1.5	4.5	7.8	66	44	35	55	46	32	10.0	9.6	70	76	78	197	97	71	15	1	37	2	113	59	1
Fort Worth	644	56.0	34.5	95.9	74.9	65.8	10	109	7	614	2105	4.59	1.68	31.33	12.64	.02	5.91	1.2	2.7	3.8	81	62	63	79	47	43	12.7	11.3	---	---	---	148	91	123	77	1	44	10	106	41	0
Galveston (E)	7	62.5	49.3	87.9	78.9	69.9	5	97	18	350	1235	4.79	2.59	41.81	15.41	T	12.56	T	.4	2.2	--	--	--	--	--	--	13.2	10.3	80	45	82	---	---	--	84	*	--		81	7	0
Galveston (1961)	7	60.4	48.2	88.7	77.9	70.1	11	97	18	362	1233	5.82	3.14	47.98	25.06	T	11.34	T	.2	2.0	84	73	78	82	69	71	13.0	11.3	---	--	--	111	118	136	90	*	52	32	32	2	0
Houston (E)	41	62.6	46.0	92.0	75.8	70.0	26	106	10	363	1278	4.43	2.40	45.26	17.64	.01	10.83	.2	.3	3.0	--	--	--	--	--	--	--	--	--	--	--	--	---	--	103	*	--		91	7	0
Houston	50	64.6	44.6	93.1	74.8	70.1	4	106	17	363	1278	4.36	2.67	45.95	22.31	T	15.65	.2	.4	4.4	84	66	68	83	61	67	12.2	9.0	---	44	83	87	128	150	102	*	61	43	107	15	0
Laredo	496	68.4	47.0	99.0	76.0	73.9	20	110	18	267	797	2.86	.62	18.63	8.62	.00	5.55	.1	.2	2.0	81	58	53	83	44	39	9.5	14.9	---	---	---	132	113	120	58	*	31	14	174	6	0
Lubbock	3243	53.0	25.1	92.4	66.5	59.7	18	107	16	800	3578	3.18	.54	18.08	7.80	.00	5.14	2.0	9.0	12.1	74	50	50	78	47	40	13.1	12.4	---	---	---	171	103	91	60	3	41	14	87	101	1
Midland	2851	57.1	30.9	93.5	71.2	64.3	3	106	-8	651	2491	2.08	.36	14.24	6.73	.00	5.99	1.5	3.1	5.9	79	56	47	79	47	39	9.2	9.7				167	96	102	49	2	36	14	109	64	*
Port Arthur	16	62.5	43.7	91.0	72.7	68.1	3	107	14	400	1526	6.00	2.88	53.09	18.71	.00	13.17	T	.7	4.4	86	67	75	94	61	70	12.0	8.4	72	42	65	92	126	147	104	*	60	16	102	23	0
San Angelo	1903	59.4	34.3	97.8	71.7	66.5	3	111	6	567	2218	3.20	.78	18.63	9.20	.00	6.03	1.0	2.5	5.1	71	47	43	76	44	36	10.5	9.9	--	---	---	167	94	104	53	1	36	6	133	55	0
San Antonio	792	62.3	41.6	94.0	73.9	68.7	22	106	0	428	1546	3.49	1.37	27.84	15.78	.00	6.97	.3	.4	4.7	80	60	59	88	49	43	9.1	9.0	74	47	76	115	115	135	77	*	36	23	120	18	*
Victoria	104	64.8	46.0	91.7	74.6	70.2	3	107	16	352	1126	4.23	2.32	36.20	6.82	.22	5.55	.0	T	T	82	61	66	94	53	57	12.1	9.1	-	-	---	98	132	135	68	0	41	24	126	17	0
Waco	500	58.2	37.8	96.0	74.6	67.2	21	108	-5	536	2030	4.57	1.68	32.68	13.37	.00	7.18	.8	1.3	7.0	82	64	63	84	50	46	12.8	11.8	-	-	-	134	100	131	77	1	47	13	112	29	*
Wichita Falls	994	52.9	30.6	96.9	73.3	63.7	4	111	-1	719	2954	4.60	1.12	26.20	12.03	.00	5.61	1.8	5.4	5.2	76	52	51	79	46	41	10.9	10.4	---	---	---	161	94	110	69	2	48	11	113	63	*
UTAH							73	116	30							.00	5.08																										
Milford	5028	37.1	12.1	92.1	55.0	48.9	15	104	-28	1252	6497	1.03	.43	8.00	2.10	.00	1.20	9.9	37.4	16.3	--	66	61	--	24	20	---	---	---	---	---	151	105	109	57	13	33	7	61	178	14
Salt Lake City	4220	36.8	19.3	92.1	69.6	51.3	4	107	18	1141	5890	1.76	.53	13.90	4.90	.00	2.41	13.1	52.0	15.4	81	72	69	47	22	16	7.4	9.5	71	48	82	131	107	127	86	17	34	10	66	138	5
Wendover	4237	35.9	18.0	92.0	66.8	52.3	26	112	-19	1178	5778	.66	.29	4.67	2.59	.00	.94	2.5	6.8	5.5	64	56	57	27	18	12	---	---	---	---	---	154	92	119	44	3	30	5	54	128	2
VERMONT							76	100	50							.00	8.77																										
Burlington	331	27.4	8.9	81.9	59.0	44.9	20	101	-30	1451	7739	3.85	1.79	33.21	11.54	.50	3.59	17.5	69.3	14.5	79	67	75	77	54	66	9.9	7.8	72	38	63	63	102	200	148	20	24	15	9	159	24
VIRGINIA							73	110	-29							.00	11.20																										
Lynchburg	916	46.2	29.0	86.6	65.9	56.7	18	103	2	849	4166	4.41	2.58	40.30	11.36	.61	4.98	4.7	16.9	12.8	75	57	65	84	56	70	8.8	6.9	56	49	63	109	107	149	123	5	42	40	27	82	0
Norfolk	26	50.2	32.2	87.9	69.6	59.7	15	103	11	738	3421	5.97	2.74	44.94	12.83	.36	6.85	2.8	6.4	11.4	78	61	71	82	58	72	11.5	8.4	78	58	66	110	109	146	117	2	39	25	34	53	0
Richmond	162	48.3	29.0	88.4	67.7	58.0	34	104	-12	815	3914	5.61	2.90	44.21	18.87	.30	8.79	4.9	13.1	21.6	81	58	71	84	55	72	8.0	7.0	68	50	69	105	106	154	115	4	39	29	44	84	1
Roanoke	1174	47.0	29.1	88.0	65.2	56.9	16	104	-4	834	4150	4.63	2.70	41.23	9.12	.27	4.95	5.3	21.2	17.4	71	54	61	82	51	64	10.0	6.7	---	---	---	100	118	147	122	7	41	26	40	87	*
WASHINGTON							97	118	-42							.00	29.12																										
Olympia	190	45.1	31.1	79.7	48.0	50.8	4	100	4	834	5236	9.05	.76	52.37	19.84	.00	4.93	7.1	15.2	13.7	89	86	76	89	62	46	7.1	5.8	---	---	---	51	90	224	162	5	7	94	7	83	0
Seattle (E)	14	45.6	36.8	75.1	56.1	53.2	30	100	11	738	4424	5.42	.63	34.10	10.93	T	3.31	4.4	8.1	11.5	--	--	--	--	--	--	---	---	65	28	63	71	93	201	132	3	6	---	2	15	0
Seattle Tacoma	400	43.6	33.0	74.6	53.1	50.7	4	99	12	828	5251	6.29	.81	38.94	12.92	T	3.41	6.4	14.0	21.4	79	79	73	86	65	48	10.7	9.4	---	---	---	53	83	229	163	5	8	54	3	39	0
Spokane	2357	31.4	19.2	83.6	55.4	47.3	4	108	-13	1231	6762	2.44	.38	17.19	5.71	T	1.67	19.0	55.1	13.0	81	79	72	58	36	23	7.9	7.8	56	28	82	88	87	190	117	18	12	47	24	132	6
Stampede Pass (R)	3958	27.5	19.5	65.4	47.0	39.5	20	90	11	1287	9283	16.19	1.46	92.19	29.06	.19	7.94	79.3	454.3	36.2	93	91	91	87	67	60	---	---	---	---	---	69	56	240	205	84	8	251	*	190	3
Tatoosh Island (R)	101	45.2	38.8	59.5	51.3	49.3	61	88	14	713	5719	12.16	1.98	77.69	22.57	.02	5.91	3.5	7.3	12.0	84	82	82	94	89	87	20.0	10.1	94	26	47	59	75	231	196	3	5	59	0	8	0
Walla Walla (E)	949	39.0	27.4	89.2	62.7	54.2	49	113	-16	986	4805	1.89	.21	15.30	4.52	.00	2.02	7.9	20.1	14.0	--	76	--	--	34	--	5.1	5.4	67	25	86	120	88	157	106	7	11	14	37	66	2
Yakima	1061	36.3	18.3	88.9	53.1	49.8	17	108	-25	1163	5941	1.19	.13	7.86	3.25	.00	1.37	9.9	23.3	13.6	84	76	71	69	34	24	5.4	7.6	---	---	---	112	88	165	71	8	8	19	34	152	5
WEST INDIES							63	103	40							.00																										
San Juan (U)	47	79.9	70.3	84.2	76.0	78.3	60	96	62	0	0	7.16	2.07	60.36	16.88	.05	10.55	.0	.0	.0	--	--	--	--	--	-	---	---	---	---	---	---	---	---	208	0	49	0	10	0	0
San Juan	13	81.3	67.4	87.1	73.7	78.0	9	93	60	0	0	7.13	2.20	64.21	13.39	.68	5.08	.0	.0	.0	87	87	66	87	81	67	8.6	9.4	80	67	62	82	205	108	209	0	38	0	37	0	0
Swan Island (1954)	28	82.5	73.3	87.4	77.4	80.7	12	92	64	0	0	9.25	1.00	53.82	27.61	.02	10.77	----	----	----	80	72	80	83	75	81	10.5	9.4	40	---	---	95	159	111	137	0	43	0	19	0	0
WEST VIRGINIA							73	112	-37							.00	19.00																										
Charleston	936	45.2	27.9	84.6	64.2	55.0	16	102	-12	880	4445	5.67	2.58	44.43	13.54	.09	5.60	7.3	26.1	15.1	77	63	67	89	62	67	7.7	5.2	-	-	---	98	119	188	130	8	43	10	23	98	1
Elkins	1970	43.0	22.0	82.3	57.9	50.7	19	97	-21	1008	5673	5.49	2.75	45.92	9.30	.31	2.94	12.5	60.0	6.1	79	62	70	95	58	71	7.2	4.2	---	---	---	52	112	201	164	21	46	84	3	141	*
Huntington	827	45.3	27.9	86.0	64.3	55.8	3	96	-15	880	4446	4.50	1.85	39.53	8.57	T	4.27	4.9	20.5	5.5	80	63	62	92	62	67	6.8	5.4	---	---	---	78	106	181	131	9	39	39	9	109	9
Parkersburg (E)	615	42.9	26.3	86.3	63.2	55.0	75	106	-27	942	4754	4.27	2.05	38.77	12.05	.07	4.81	6.7	24.4	18.3	82	66	74	80	52	67	7.1	5.1	66	31	63	109	103	153	143	8	44	14	23	97	2

See reference notes at end of table.

NORMALS, MEANS AND EXTREMES

State and Station	Elevation ground (feet)	Temperature (°F) NORMAL (1931-1960) January: Daily maximum	January: Daily minimum	July: Daily maximum	July: Daily minimum	Annual	Extremes: Length yrs	Extremes: Record highest	Extremes: Record lowest	Normal degree days (1931-1960): January	Normal degree days (1931-1960): Seasonal	Precipitation (inches) NORMAL (1931-1960): Wettest month	Driest month	Annual	Extremes: Wettest month	Extremes: Driest month	Extremes: Maximum in 24 hours	Snow, sleet: Mean total: January	Snow, sleet: Mean total: Seasonal	Snow, sleet: Extreme: Maximum in 24 hours	Relative humidity (percent): January: 7:00 a.m. EST	January: 1:00 p.m. EST	January: 7:00 p.m. EST	July: 7:00 a.m. EST	July: 1:00 p.m. EST	July: 7:00 p.m. EST	Wind Speed (m.p.h.): Mean hourly: January	Mean hourly: July	Fastest mile	Sunshine (percent of possible): January	July	Annual mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, sleet 1.0 inch or more	Thunderstorms	Heavy fog	Temperature: Max. 90 and above	Min. 32 and below	Min. Zero and below
WISCONSIN							73	114	-54								.00	11.72																										
Green Bay	682	25.1	7.5	81.0	58.0	43.6	3	93	-29	1510	8214	3.36	1.08	25.83	7.75	T	3.68	8.3	40.8	9.3	73	68	69	90	61	63	10.9	8.2	73	44	65	95	103	167	117	14	37	29	3	155	47
La Crosse	652	25.6	7.4	84.6	63.0	46.3	13	103	-37	1504	7589	4.20	1.05	31.16	9.16	.02	3.92	7.4	43.5	15.7	76	65	70	87	58	58	9.3	7.9	---	---	---	92	101	172	109	12	44	24	13	152	24
Madison	858	27.9	8.1	83.2	59.0	45.3	4	101	-30	1457	7771	3.95	1.13	30.16	10.93	.06	5.25	8.9	39.1	10.8	78	69	71	90	60	61	10.5	8.3	77	48	70	97	97	171	113	13	39	23	7	163	33
Milwaukee (U)(1954)	620	30.0	16.0	80.1	64.4	47.7	--	---	---	1302	6944	3.36	1.42	28.87	----	-----	-----	---	----	----	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Milwaukee	672	28.3	12.8	78.9	58.4	45.1	4	98	-24	1376	7635	3.64	1.40	29.51	9.87	.15	5.28	12.7	42.8	16.7	74	66	69	83	60	62	13.0	9.7	73	42	70	97	101	167	119	13	37	27	7	149	26
WYOMING							104	114	-63								.00	5.50																									
Casper	5319	32.8	13.9	87.1	56.3	46.0	13	104	-30	1290	7410	2.03	.48	11.80	3.93	T	2.49	8.7	66.0	14.6	65	55	58	53	29	23	16.8	10.4	---	---	---	115	108	142	89	20	37	9	26	174	15
Cheyenne	6126	38.2	13.6	84.2	53.8	45.6	4	96	-27	1212	7381	2.52	.45	15.06	5.35	T	2.68	6.5	55.5	16.5	57	48	53	71	34	39	14.5	9.9	69	62	69	103	134	128	102	18	53	25	16	169	15
Lander	5563	30.8	7.7	85.8	55.4	44.4	17	101	-37	1417	7870	2.65	.42	13.58	6.88	T	3.56	9.0	91.8	23.1	66	59	58	56	33	28	6.0	7.5	77	68	77	122	129	114	69	22	23	2	21	186	21
Sheridan	3942	34.0	8.6	87.1	55.5	45.2	23	106	-35	1355	7683	2.57	.62	15.91	9.54	.07	3.84	9.3	65.3	26.7	73	63	66	72	36	34	7.6	7.3	84	58	75	104	113	148	106	22	38	6	27	181	22

Data from airport or from airport and Urban site records combined.
U indicates Urban, R indicates Rural sites.
Data for this table are based on records through 1963 except as indicated in notes.
Date in Parenthesis after station name indicates last year included in summarization of data.
Normal values are based on the period, 1931-1960, and are means adjusted to represent observations taken at the present standard location.
Degree days are based on a daily average of 65°F.

Fastest mile is the speed of the wind recorded in the shortest time on an automatic recording wind instrument.
Clear Day averages 0-3 tenths sky cover, Partly Cloudy 4-7 tenths and Cloudy 8-10 tenths.
Heavy Fog includes data formerly referred to as "Dense" or "Thick." The upper visibility limit for heavy fog is 1/4 mile.
* Less than one-half.
\- No record.
\# Number of days Maximum 70 or above (Alaskan stations).
† Relative humidity means for period of record through 1960.
‡ Mt. Washington excluded.
ø Estimated amounts during typhoon.

a Relative Humidity readings NOON Local Time.
b Relative Humidity readings reported 30 minutes later.
c Relative Humidity readings 8:00 a.m. and NOON Local Time.
d Estimated
e Reopened 1963.
f Combined Records, city office and airport.
g 8:00 a.m., and 2:00 p.m., EST.
n Estimated, recorder pen against stop at 128 m.p.h.
T Trace, an amount too small to measure.
x Sun below horizon continuously Nov. 18 - Jan. 24.
z Sun below horizon continuously Nov. 26 - Jan. 16.
(x and z)-Yearly totals for period sun above horizon.

ELEVATIONS FROM WHICH STATION PRESSURES ARE REDUCED

State and station	Ft.	Mtrs.
ALABAMA		
Birmingham	700	213
Huntsville	609	185
Mobile	57	17
Montgomery	218	66
ALASKA		
Anchorage	132	40
Annette	110	34
Barrow	13	4
Barter Island	50	15
Bethel	38	12
Cold Bay	103	31
Cordova	40	12
Fairbanks	454	138
Juneau	24	7
King Salmon	49	15
Kotzebue	16	5
McGrath	338	103
Nome	22	7
Shemya	102	31
St. Paul Island	28	9
Yakutat	31	9
ARIZONA		
Flagstaff	6907	2104
Phoenix	1107	336
Prescott	5022	1531
Tucson	2555	779
Winslow	4883	1488
Yuma	141	43
ARKANSAS		
Fort Smith	463	141
Little Rock	357	109
Texarkana	368	112
CALIFORNIA		
Bakersfield	492	150
Bishop	4145	1263
Blue Canyon	5283	1610
Burbank	725	221
Eureka (U)	60	18
Fresno	327	100
Long Beach	40	12
Los Angeles (U)	512	156
Los Angeles	104	32
Mt Shasta (R)	3587	1094
Oakland	7	2
Point Arguello (R)	367	112
Red Bluff	353	108
Sacramento	25	8
Sandberg (R)	4523	1378
San Diego	87	27
San Francisco	18	5
Santa Catalina	1580	482
Santa Maria	238	73
Stockton	27	8
COLORADO		
Alamosa	7541	2298
Colorado Springs	6170	1881
Denver	5292	1613
Grand Junction	4602	1403
Pueblo	4690	1430
CONNECTICUT		
Bridgeport	17	5
Hartford	159	48
New Haven	13	4
DELAWARE		
Wilmington	80	24
DISTRICT OF COLUMBIA		
Washington (U)	112	34
Wash. Nat'l AP	112	34
FLORIDA		
Apalachicola (U)	35	11
Daytona Beach	41	12
Fort Myers	12	4
Jacksonville	31	9
Key West	21	6
Lakeland (U)	236	72
Miami	25	7
Orlando	119	36
Pensacola	56	17
Tallahassee	68	21
Tampa	35	11
West Palm Beach	21	6
GEORGIA		
Athens	811	247
Atlanta	1173	358
Augusta	182	55
Columbus	394	120
Macon	370	113
Rome	643	196
Savannah	65	20
HAWAII		
Hilo	36	11
Honolulu	15	5
Kahului	67	20
Lihue	148	45
IDAHO		
Boise	2739	835
Idaho Falls 46W (R)	4939	1505

State and station	Ft.	Mtrs.
IDAHO (Cont'd.)		
Lewiston	1436	438
Pocatello	4478	1365
ILLINOIS		
Cairo (U)	357	109
Chicago (O'Hare)	674	205
Chicago (Midway)	623	190
Moline	606	185
Peoria	609	186
Rockford	743	226
Springfield	636	194
INDIANA		
Evansville	431	131
Fort Wayne	857	261
Indianapolis	823	251
South Bend	773	236
IOWA		
Burlington	702	214
Des Moines	860	262
Dubuque	699	213
Sioux City	1138	347
Waterloo	878	268
KANSAS		
Concordia	1392	424
Dodge City	2509	765
Goodland	3688	1124
Topeka	987	301
Wichita	1358	414
KENTUCKY		
Covington	877	265
Lexington	989	301
Louisville	525	160
LOUISIANA		
Alexandria	118	36
Baton Rouge	76	23
Lake Charles	32	10
New Orleans (Audubon)	177	54
New Orleans	53	16
Shreveport	249	76
MAINE		
Caribou	628	191
Portland	103	31
MARYLAND		
Baltimore	123	37
Baltimore (U)	123	37
MASSACHUSETTS		
Blue Hill Obs. (R)	640	195
Boston	124	38
Nantucket	12	4
Pittsfield	1169	354
Worcester	1001	305
MICHIGAN		
Alpena	693	211
Detroit (City AP)	730	223
Detroit (M. Wayne Co.)	664	202
Detroit (Willow Run)	777	237
Flint	766	233
Grand Rapids	707	215
Lansing	878	271
Marquette (U)	734	224
Muskegon	633	193
Sault Ste. Marie	614	187
MINNESOTA		
Duluth	1133	345
International Falls	1126	343
Minneapolis	919	280
Rochester	1320	402
St. Cloud	1043	318
MISSISSIPPI		
Jackson	331	101
Meridian	310	94
Vicksburg (U)	247	75
MISSOURI		
Columbia	784	239
Kansas City	963	294
St. Joseph	967	295
St. Louis (Lambert)	564	171
Springfield	1324	404
MONTANA		
Billings	3570	1088
Glasgow	2086	636
Great Falls	3657	1115
Havre	2507	764
Helena	4123	1257
Kalispell	2973	906
Miles City	2634	803
Missoula	3263	995
NEBRASKA		
Grand Island	1856	566
Lincoln (U)	1889	576
Norfolk	1551	473
North Platte	2821	860
Omaha (Eppley AP)	1105	337
Omaha (N. Omaha AP)	1323	403
Scottsbluff	3958	1206
Valentine	2598	792

State and station	Ft.	Mtrs.
NEVADA		
Elko	5078	1526
Ely	6262	1909
Las Vegas	1869	570
Reno	4527	1380
Winnemucca	4399	1341
NEW HAMPSHIRE		
Concord	289	88
Mt. Washington Obs.	6267	2010
NEW JERSEY		
Atlantic City (Exp. Cntr.)	52	16
Atlantic City (U)	52	16
Newark	30	9
Trenton (U)	190	58
NEW MEXICO		
Albuquerque	4972	1515
Clayton	5052	1525
Raton	6382	1945
Roswell	3566	1087
Silver City	5376	1638
NEW YORK		
Albany	97	30
Binghamton	1638	499
Buffalo	768	234
New York Central Park	314	96
New York (U)	314	96
New York (Kennedy AP)	22	7
New York (LaGuardia)	52	16
Rochester	523	159
Schenectady	223	68
Syracuse	596	182
NORTH CAROLINA		
Asheville (U)	2253	687
Cape Hatteras (R)	11	3
Charlotte	779	237
Greensboro	886	270
Raleigh	376	115
Wilmington	72	22
Winston-Salem	967	295
NORTH DAKOTA		
Bismarck	1677	511
Fargo	940	287
Williston (U)	1878	571
OHIO		
Akron	1052	321
Cincinnati (U)	627	191
Cleveland	762	232
Columbus	822	251
Dayton	900	274
Mansfield	1312	400
Sandusky (U)	632	193
Toledo	692	211
Youngstown	1186	361
OKLAHOMA		
Oklahoma City	1214	370
Tulsa	676	206
OREGON		
Astoria	22	7
Burns (U)	4170	1271
Eugene	373	114
Meacham	4056	1236
Medford	1329	405
Pendleton	1495	456
Portland	154	47
Roseburg	510	155
Salem	201	61
Sexton Summit (R)	3841	1171
PACIFIC AREA		
Canton Island	11	3
Eniwetok	21	6
Johnston Island	17	5
Koror (R)	109	33
Kwajalein	26	8
Ponape (R)	151	46
Truk (Moen Island)	8	2
Wake Island	12	4
Yap (R)	56	17
PENNSYLVANIA		
Allentown	385	117
Erie	714	218
Harrisburg	476	145
Philadelphia	114	35
Pittsburgh	842	257
Reading (U)	323	98
Scranton	948	289
Williamsport	525	160
RHODE ISLAND		
Block Island	118	36
Providence	159	48
SOUTH CAROLINA		
Charleston	48	15
Columbia	347	106
Florence	151	46
Grnvl-Spartanburg	971	296
SOUTH DAKOTA		
Huron	1301	397
Rapid City	3259	993

State and station	Ft.	Mtrs.
SOUTH DAKOTA (Cont'd)		
Sioux Falls	1427	435
TENNESSEE		
Bristol	1525	465
Chattanooga	762	232
Knoxville	980	299
Memphis	399	122
Nashville	546	166
Oak Ridge	914	279
TEXAS		
Abilene	1738	530
Amarillo	3676	1120
Austin	605	184
Brownsville	57	17
Corpus Christi	20	6
Dallas	512	156
Del Rio	960	293
El Paso	3778	1152
Fort Worth	576	176
Galveston	9	3
Galveston (U)	54	16
Houston	62	19
Houston (U)	138	40
Laredo	418	127
Lubbock	3241	988
Midland	2862	872
Port Arthur	34	10
San Angelo	1908	582
San Antonio	693	211
Victoria	107	33
Waco	578	176
Wichita Falls	1030	314
UTAH		
Milford	5097	1926
Salt Lake City	4357	1328
Wendover	4239	1292
VERMONT		
Burlington	403	123
VIRGINIA		
Lynchburg	686	209
Norfolk	30	9
Richmond	164	50
Roanoke	1176	358
WASHINGTON		
Olympia	200	61
Seattle-Tacoma	388	118
Spokane	1929	588
Stampede Pass (R)	3967	1209
Tatoosh Island (R)	86	26
Walla Walla (U)	991	302
Yakima	1076	307
WEST INDIES		
San Juan, P. R.	82	25
Swan Island	28	9
WEST VIRGINIA		
Beckley	2514	766
Charleston	989	301
Elkins	1947	593
Huntington	838	255
WISCONSIN		
Green Bay	617	188
La Crosse	672	205
Madison	974	297
Milwaukee	681	208
WYOMING		
Casper	5290	1612
Cheyenne	6094	1830
Lander	5352	1631
Sheridan	3790	1155

Data from airport unless otherwise specified. U indicates Urban, R indicates Rural, sites.
These are the elevations of the barometer (in feet and meters above mean sea level) to which station pressure values pertain in the "Climatological Data" table in the monthly publication CLIMATOLOGICAL DATA NATIONAL SUMMARY. When an elevation differs from the present station elevation this level was selected to permit comparison of data for a longer period of homogeneous record.

GENERAL SUMMARY OF TORNADOES, 1963

Lucius W. Dye, Climatology
U. S. Weather Bureau, Washington, D. C.

Storm Data, published monthly by the United States Weather Bureau, lists 461 tornadoes, 233 funnel clouds, and numerous waterspouts that occurred in 1963. The 461 tornadoes killed 31 persons, injured 525 others, and caused unestimable damage to property and crops. The tornado summary table lists the number of tornadoes, tornado days, deaths, and injuries by States. It is not represented here that the list is complete. One or more tornadoes may not have been seen or reported and, therefore, would not be listed in Storm Data.

A tornado that moved from one State to another is counted as having occurred in both States but is counted only once in the National total. A tornado that began before midnight and continued after midnight is listed as one tornado which occurred on two tornado days. Two or more tornadoes may, of course, occur on one tornado day. The total "tornado days" for the Nation is the number of calendar days on which a tornado occurred in any of the 50 States. It is less than the sum of the tornado days for each State, because of the occurrence of tornadoes in two or more States on the same day.

It is pointed out that 248 tornadoes, more than one-half of the total, occurred during April, May, and June, about two-thirds of the total occurred in the 4-month period, April to July, and more than three-fourths of the storms occurred during the 5 months, March to July.

Tornadoes occurred on 140 days during the year. Exactly one-half of these days, 70, were in the 3 months, May, June, and July. Tornadoes were seen and reported on 76 percent of the days in those months.

Seventeen tornadoes killed 31 persons in 12 States on 12 days. More than one-half of the deaths occurred in April. Twenty-four of these deaths occurred in March and April. This is slightly more than three-fourths of the total for the year. The number of persons injured in March and April, 349, is about two-thirds of the total for the year.

Following the tornado summary table is a table which shows the number of tornadoes, tornado days, and other tornado information for each year 1916 to 1963.

The funnel cloud table shows the number of funnel clouds that were listed in Storm Data but which did not reach the ground.

A few tornadoes crossed State lines. These were counted in the totals for each State but only once in the National total. On January 20, at about 3:00 p.m., a tornado hit about 13 miles west-southwest of Enterprise, Ala., and moved east-northeast to the southwest part of Enterprise. The tornado was not on the ground continuously. Five houses were destroyed, several others were damaged or unroofed, and numerous other buildings were destroyed or damaged. This tornado, moving in its hit-and-skip path, entered Georgia near Fort Gaines in Clay County and continued to near Warwick in west Crisp County. In Georgia, the major damage was in Clay, Terrell, and Lee Counties. The storm heavily damaged several farm homes in Clay County, destroyed about 20 buildings south of Dawson in Terrell County, and damaged several houses about 2 miles north of Leesburg. A college student was electrocuted when he stepped on a wire blown down by the storm. Four children were injured when their home collapsed.

Another storm moved from Alabama to Georgia on March 5. This tornado destroyed a house and damaged several others in Rock Run community before moving northeastward to Cave Springs, Ga., where it damaged 55 homes. The damage ranged from minor to complete destruction. The storm caused minor injury to two persons.

On the afternoon of April 17, a tornado struck 3 miles northwest of Bonfield, Ill. (13 miles west-northwest of Kankakee), and moved east-southeast to Indiana. The heavy damage from this storm was concentrated in the towns of Bourbonnais, Brailey, and Exline. One person was killed and about 50 were injured in Illinois. The storm injured about 20 persons after it crossed into Indiana. It destroyed all the buildings on two farms near North Manchester and caused further damage at Roanoke and Fort Wayne. It damaged or destroyed 21 buildings south of Laura and Asphaltum. Sixteen persons were hospitalized. Damage was extremely heavy in both Illinois and Indiana.

Two days later, on April 19, a tornado moved from near St. Francisville, Ill., to near Vincennes, Ind. The storm injured 10 persons in Illinois and 12 in Indiana. In Illinois, the storm destroyed several houses and caused major damage to about 100 buildings. After crossing to Indiana, the tornado damaged about a dozen homes and several barns.

During the early evening of April 22, a tornado moved from Douglas County, Ill., eastward to Vermillion County, Ind. The storm damaged TV antennas, chimneys, and plate glass windows at Tuscola, destroyed utility lines and poles south of Camargo and east of Murdock, Ill. About 40 persons were injured in Illinois before the tornado moved to near Dana, Vermillion County, Ind., where it dissipated.

On May 14, at about 5 p.m., a tornado demolished an 8,000-bird poultry house at Gonic, a section of Rochester, N. H. Other localities damaged by the tornado include Concord, Penacock, Canterbury, Pittsfield, Suncock, and Northwood. The tornado moved to Berwick, Maine, where it uprooted some trees and snapped off others.

About midafternoon on September 29 a tornado killed 3 persons and injured 12 in Dillon County, S. C., before moving into North Carolina. It caused heavy property damage in both States.

One of the most damaging tornadoes of the year struck the Glassport-Carnegie-Clairton area in Pennsylvania, about 9:30 p.m., August 3. Many dwellings and other buildings were partially or completely wrecked. Two persons were killed and about 70 were injured. Property damage was estimated in the millions of dollars.

The most deaths from a single tornado was 5. The tornado struck Cashoma County, Miss., about midafternoon on April 29. Hail preceded the tornado, partially covering the ground over an area 1 mile wide and 7 miles long. Some of the stones were 3 inches in diameter but the average was 1 inch. The storm damaged or destroyed buildings, pecan groves, cottonfields, and trees. The tornado carried a truck 50 yards. The passenger fell out and died. The funnel crossed a lake, raising some water 40 to 50 feet. When the water fell back into the lake, it damaged buildings and piers. Near Lula, Miss., the tornado lifted a trailer house across a wooded area. The trailer was demolished. Two men who had been in the trailer house were carried 100 yards; a third man, 200 yards.

TORNADO SUMMARY

Year 1963

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
ALA.													
Number	2		10	7	[illegible]								20
Days	2		4	3	[illegible]								10
Deaths	0		3	0	[illegible]								3
Injuries	0		55	21	0								76
ALASKA													
(None)													
ARIZ.													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
ARK.													
Number			1			1							2
Days			1			1							2
Deaths			0			0							0
Injuries			0			0							0
CALIF.													
(None)													
COLO.													
Number							2			1			3
Days							2			1			3
Deaths							0			0			0
Injuries							0			0			0
CONN.													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
DEL.													
(None)													
FLA.													
Number		3		1	2	5	7	6	1		3		28
Days		1		1	2	5	5	6	1		1		22
Deaths		0		0	0	0	0	0	0		0		0
Injuries		0		0	2	0	0	0	0		2		4
GA.													
Number	9	1	4	2	1	1			1				19
Days	3	1	3	1	1	1			1				11
Deaths	1	0	0	0	0	0			0				1
Injuries	8	0	2	0	0	2			5				17
HAWAII													
Number		1											1
Days		1											1
Deaths		0											0
Injuries		0											0
IDAHO													
(None)													
ILL.													
Number			1	7		2			1				11
Days			1	5		2			1				9
Deaths			0	2		0			0				2
Injuries			0	110		0			0				110
IND.													
Number	1		6	14	1	7							29
Days	1		3	4	1	3							12
Deaths	0		2	0	0	0							2
Injuries	0		1	53	0	0							54
IOWA													
Number			4	3	5	2	1						15
Days			1	1	3	1	1						7
Deaths			0	0	0	0	0						0
Injuries			0	0	0	2	0						2
KANS.													
Number				4	5	7	3	2	5	2	1		29
Days				2	3	3	3	1	5	1	1		19
Deaths				0	0	0	0	0	0	0	0		0
Injuries				0	3	0	1	0	0	0	0		4
KY.													
Number			1	6		1	1						9
Days			1	3		1	1						6
Deaths			0	0		0	0						0
Injuries			10	4		0	0						14
LA.													
Number	1			2		3	1				2		9
Days	1			1		2	1				2		7
Deaths	0			0		0	0				0		0
Injuries	3			0		0	0				1		4

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
MAINE													
Number					2		4			2			8
Days					2		2			2			6
Deaths					0		0			0			0
Injuries					0		0			0			0
MD.													
Number							2						2
Days							1						1
Deaths							0						0
Injuries							0						0
MASS.													
Number					4		2		1	1			8
Days					1		2		1	1			5
Deaths					0		0		0	0			0
Injuries					0		0		0	0			0
MICH.													
Number				2		1	1			1			5
Days				1		1	1			1			4
Deaths				1		0	0			0			1
Injuries				1		0	0			0			1
MINN.													
Number						3	1	1		2			7
Days						2	1	1		1			5
Deaths						0	0	0		0			0
Injuries						0	0	1		0			1
MISS.													
Number			4	3		1							8
Days			1	1		1							3
Deaths			2	8		0							10
Injuries			12	34		0							46
MO.													
Number			3	5	3	1		1					13
Days			1	3	3	1		1					9
Deaths			0	1	0	0		0					1
Injuries			4	5	1	2		0					12
MONT.													
Number						1	2						3
Days						1	2						3
Deaths						0	0						0
Injuries						0	0						0
NEBR.													
Number				5	3	7	1	1					17
Days				1	3	4	1	1					10
Deaths				1	0	0	0	0					1
Injuries				8	0	0	0	0					8
NEV.													
(None)													
N. H.													
Number					4	1	3	1					9
Days					3	1	2	1					7
Deaths					0	0	0	0					0
Injuries					0	0	2	0					2
N. J.													
(None)													
N. MEX.													
Number					2	2	2	2					8
Days					2	2	2	2					8
Deaths					0	0	0	0					0
Injuries					0	1	0	0					1
N. Y.													
Number						1	1		1				3
Days						1	1		1				3
Deaths						0	0		0				0
Injuries						0	0		0				0
N. C.													
Number	1	1			4		2		3				11
Days	1	1			2		2		1				7
Deaths	0	0			0		0		0				0
Injuries	0	0			2		0		0				2
N. DAK.													
Number						6	1						7
Days						4	1						5
Deaths						0	0						0
Injuries						0	0						0

TORNADO SUMMARY

Year 1963

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
OHIO													
Number				10	2	2	2		3				19
Days				1	1	1	2		1				6
Deaths				0	0	0	0		0				0
Injuries				1	0	0	0		9				10
OKLA.													
Number			3	1	11	4	4	1	2	1	3		30
Days			3	1	1	3	3	1	1	1	2		16
Deaths			0	0	1	0	0	0	0	0	0		1
Injuries			0	0	4	1	0	3	0	0	0		8
OREG.													
(None)													
PA.													
Number			1	1				1	1				4
Days			1	1				1	1				4
Deaths			0	0				2	0				2
Injuries			0	0				70	11				81
R. I.													
(None)													
S. C.													
Number				1	1		2	3	5				12
Days				1	1		2	2	2				8
Deaths				0	0		0	0	3				3
Injuries				0	0		0	0	13				13
S. DAK.													
Number						6	3	1					10
Days						3	3	1					7
Deaths						0	0	0					0
Injuries						0	0	0					0
TENN.													
Number	1		9	2									12
Days	1		2	1									4
Deaths	0		1	3									4
Injuries	4		19	6									29
TEX.													
Number			3	9	19	24	8	4	6	4	3		80
Days			2	4	9	10	8	3	3	3	2		44
Deaths			0	0	0	0	0	0	0	0	0		0
Injuries			0	3	2	0	7	0	1	0	0		13

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
UTAH													
Number						1							1
Days						1							1
Deaths						0							0
Injuries						0							0
VT.													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
VA.													
(None)													
WASH.													
(None)													
W. VA.													
Number							1						1
Days							1						1
Deaths							0						0
Injuries							0						0
WIS.													
Number						2	1	3	4				10
Days						2	1	1	2				6
Deaths						0	0	0	0				0
Injuries						0	0	13	0				13
WYO.													
Number						1	1						2
Days						1	1						2
Deaths						0	0						0
Injuries						0	0						0
P. R. and V. I.													
(None)													
TOTALS													
Number	15	6	50	85	70	93	62	27	34	14	12	0	468
	*14		*49	*82	*69				*33				*461
Days	†5	†3	†12	†14	†21	†23	†26	†13	†12	†5	†6	0	†140
Deaths	1	0	8	16	1	0	0	2	3	0	0	0	31
Injuries	15	0	103	246	14	8	10	87	39	1	2	0	525

* Corrected for boundary-crossing tornadoes.
† Tornado days for country as a whole.

NUMBER OF TORNADOES, TORNADO DAYS, AND RESULTING LOSSES BY YEARS 1916-63

Year	Number tornadoes	Number tornado days	Total deaths	Most deaths in a single tornado	Total property losses †	Number of tornadoes causing losses † in		
						category 5	category 6	category 7 & over
1916	90	36	150	30	6	7	1	0
1917	121	38	509	101	7	21	9	0
1918	81	45	135	36	7	20	5	0
1919	64	35	206	59	7	10	2	0
1920	87	50	498	87	7	14	10	0
1921	105	55	202	61	7	22	3	0
1922	108	64	135	16	7	27	5	0
1923	102	59	109	23	6	21	1	0
1924	130	57	376	85	7	26	11	1
1925	119	65	794	689	7	34	2	1
1926	111	57	144	23	6	28	0	0
1927	163	62	540	92	7	42	9	1
1928	203	79	92	14	7	40	7	0
1929	197	74	274	40	7	48	4	0
1930	192	72	179	41	7	38	6	0
1931	94	57	36	6	6	14	1	0
1932	151	67	394	37	7	23	1	1
1933	258	96	362	34	7	46	9	0
1934	147	77	47	6	6	10	3	0
1935	180	77	70	11	6	29	0	0
1936	151	71	552	216	7	17	5	1
1937	147	75	29	5	6	24	0	0
1938	213	76	183	32	7	29	6	0
1939	152	75	87	27	7	21	3	0
1940	124	62	65	18	7	13	2	0
1941	118	57	53	25	6	24	1	0
1942	167	66	384	65	7	42	10	0
1943	152	61	58	5	7	28	8	0
1944	169	68	275	100	7	50	9	0
1945	121	66	210	69	7	21	10	1
1946	106	65	78	15	7	29	7	0
1947	165	78	313	169	7	46	7	1
1948	183	68	140	33	7	62	11	2
1949	249	80	212	58	7	54	13	0
1950	199	88	70	18	7	47	9	0
1951	272	113	34	6	7	35	11	2
1952	236	98	230	57	7	53	19	0
1953	437	136	516	116	8	63	18	7
1954	549	159	35	6	7	63	8	1
1955	593	153	125	80	7	74	13	1
1956	532	155	83	25	7	83	24	1
1957	864	154	191	44	8	129	26	3
1958	565	166	66	19	7	70	8	1
1959	589	156	58	21	7	70	4	1
1960	618	172	47	16	7	65	11	1
1961	683	169	51	16	7	103	21	1
1962	658	153	28	17	7	51	10	0
1963	461	140	31	5	7	77	15	1
Means:								
1916-63	---	---	197	--	-	---	--	-
1953-63	595	156	112	--	-	---	--	-

NOTE.--The above estimated losses are based on values at time of occurrence.

† Storm damages in categories:

5 $50,000 to $500,000
6 $500,000 to $5,000,000
7 $5,000,000 to $50,000,000
8 $50,000,000 and over.

This tabulation does not include funnel clouds that remained aloft or funnels on water surfaces only.

NUMBER OF FUNNEL CLOUDS ALOFT, 1963

State	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Ala.			4										4
Alaska													0
Ariz.													0
Ark.			2		2	1	1		1				7
Calif.	3		1							1			5
Colo.								1					1
Conn.													0
Del.													0
D. C.													0
Fla.		3			3	1	5	1	1	3			17
Ga.													0
Hawaii		1		4					1				6
Idaho						2							2
Ill.				2		9	1						12
Ind.				4			2						6
Iowa				2	1		1	1					5
Kans.				2	6	18	6		6				38
Ky.													0
La.	1					3	1						5
Maine													0
Md.													0
Mass.													0
Mich.						8	2		2	9	1		22
Minn.					1	5	8	1					15
Miss.				1									1
Mo.							1						1
Mont.							1						1
Nebr.					4	2	2						8
Nev.													0
N. H.													0
N. J.													0
N. Mex.													0
N. Y.						2							2
N. C.													0
N. Dak.					2								2
Ohio				1									1
Okla.			1	3	17	3	1	5					30
Oreg.													0
Pa.													0
R. I.													0
S. C.				3									3
S. Dak.						4				1			5
Tenn.													0
Tex.					7	18		3	1		1		30
Utah													0
Vt.													0
Va.													0
Wash.					1								1
W. Va.													0
Wis.						2							2
Wyo.					1								1
W. Indies													0
Total	4	4	8	22	45	78	32	12	12	14	2	0	233

HAILSTORM LOSSES FOR PAST YEARS

Year	Property (exclusive of crops)	Crops	Total
1933			7
1934			7
1935	-	-	7
1936	6	7	7
1937	6	7	7
1938	6	7	7
1939	5	6	6
1940	6	7	7
1941	6	7	7
1942	6	7	7
1943	6	7	7
1944	7	7	8
1945	6	7	7
1946	7	7	7
1947	6	8	8
1948	7	8	8
1949	7	7	7
1950	7	7	7
1951	7	7	8
1952	7	7	7
1953	7	7	7
1954	7	8	8
1955	7	7	8
1956	7	8	8
1957	7	8	8
1958	7	8	8
1959	6	7	7
1960	7	8	8
1961	8	8	8
1962	9	8	9
1963	8	8	8

† Storm damages are placed in categories varying from 1 to 9 as follows

1	Less than $50	4	$5,000 to $50,000	7	$5,000,000 to $50,000,000
2	$50 to $500	5	$50,000 to $500,000	8	$50,000,000 to $500,000,000
3	$500 to $5,000	6	$500,000 to $5,000,000	9	$500,000,000 to $5,000,000,000.

NOTE.--The above estimated losses are based on values at time of occurrence.

WINDSTORM LOSSES FOR PAST YEARS

(Windstorms other than tornadoes)

Year	Total loss of life	Total property loss
1916	65	7
1917	25	6
1918	79	7
1919	344	7
1920	42	6
1921	65	7
1922	133	7
1923	68	7
1924	78	7
1925	88	7
1926	357	8
1927	64	7
1928	1,947	8
1929	46	7
1930	49	7
1931	17	7
1932	306	7
1933	156	8
1934	109	7
1935	461	7
1936	121	7
1937	43	7
1938	630	8
1939	60	6
1940	251	7
1941	43	7
1942	68	7
1943	61	7
1944	448	8
1945	85	7
1946	70	7
1947	117	8
1948	52	8
1949	102	8
1950	210	8
1951	289	8
1952	137	8
1953	118	8
1954	292	9
1955	301	8
1956	196	8
1957	553	8
1958	129	8
1959	145	7
1960	85	8
1961	64	8
1962	134	9
1963	54	9
	Total 9,357	

† Storm damages are placed in categories varying from 1 to 9 as follows:

1	Less than $50	4	$5,000 to $50,000	7	$5,000,000 to $50,000,000
2	$50 to $500	5	$50,000 to $500,000	8	$50,000,000 to $500,000,000
3	$500 to $5,000	6	$500,000 to $5,000,000	9	$500,000,000 to $5,000,000,000.

NOTE.--The above estimated losses are based on values at time of occurrence.

NORTH ATLANTIC TROPICAL CYCLONES, 1963

George W. Cry, Climatology
U. S. Weather Bureau, Washington, D. C.

Nine tropical cyclones of storm or hurricane force were tracked in the North Atlantic during 1963. Seven were of hurricane intensity (sustained winds 74 m.p.h. or higher) although several barely reached this strength. These frequencies compare to the most recent 30-year means of 9.5 tropical cyclones and 5.6 hurricanes. A number of tropical depressions which never reached organized storm intensity while still tropical were also observed. Included in this category was a circulation which developed in the southwestern Caribbean on May 30, moved northward and produced record 24-hour rainfalls over portions of the Middle Atlantic Coastal States before dissipating on June 4. While this cyclone was probably tropical for a part of its existence, it had acquired predominate extratropical features by the time it reached storm intensity.

This year, as last, the continental United States was not affected by a major hurricane, although Cindy in September produced significant flood damage in portions of Texas and Louisiana and Ginny in October posed an extended, but generally unrealized, threat to an extensive area along the Atlantic Coast. Sections of Haiti, Cuba, the Dominican Republic and some of the islands of the Lesser Antilles were severely affected by hurricanes Flora and Edith. Measured by loss of life, 1963 was the second most disastrous year of record with about 7,200 fatalities, all but 25 as a result of Flora and all but 11 outside the United States.

The most deadly recorded Atlantic hurricane occurred October 10-12, 1780, devastating the Windward and Leeward Islands. Well over 20,000 persons perished: 4,326 on Barbados; 9,000 on Martinique; 4,500 on St. Eustatius; several thousand sailors on foundered ships of the Spanish, British, French, and Dutch fleets; and smaller numbers on other islands.

Direct property and crop damage for the 1963 season has been conservatively estimated at almost $589 million, but final evaluation of both deaths and damage has not been completed in the Dominican Republic, Haiti, and Cuba. Damage in the United States totaled only $12,960,000.

Summaries of individual tropical storms and hurricanes follow. Meteorological data are given in tables 1 and 2. Tracks are shown in figure 1.

HURRICANE ARLENE, JULY 31-AUGUST 11

TIROS VI photographs, taken at 1505 GMT, July 31, showed a large cloud mass in the south-central North Atlantic near 11°N., 39°W. This location is too far east for aircraft reconnaissance and little information was received until the MORMACTRADER passed close to Arlene during the night of August 1-2. This ship's excellent reports indicated the cyclone had just reached tropical storm intensity. The first Navy reconnaissance located a fully-developed hurricane near 14.2°N., 49.8°W., at 1642 GMT, August 2, with minimum pressure 987.4 mb. (29.16 in.) and maximum winds 85 kt.

Three reconnaissance flights during the next 26 hours, as Arlene moved west-northwestward, reported winds well above hurricane force, and the observers described the storm as well-developed. However, a rapid dissipation of the eye structure and a marked reduction of maximum winds took place during the night of August 3-4. By the afternoon of the 4th no definite storm pattern was evident, and Arlene was only a tropical depression. This unusual dissipation occurred in an area, just east of the Windward Islands, where intensification is the rule.

Tropical depression intensity was maintained through August 7, mainly on the basis of some circulation aloft, although, at times, only a disturbed, unorganized area of squalls remained at the surface. Ship reports during the late evening of the 7th showed Arlene to be regenerating, again of tropical storm intensity, and turning on a northeasterly course toward Bermuda. Air Force reconnaissance penetrated the center at 1357 GMT, August 8, and found Arlene was again of hurricane intensity, with a well-developed eye and maximum surface winds estimated at 65 kt. An unusual and excellent radar eye fix was received from the U.S.S. LAWRENCE shortly before the Air Force penetration.

Arlene remained small in size and about the same intensity as the forward speed increased during the night and early morning of August 8-9. The eye passed directly over Bermuda about 1600 GMT. Meteorological observations there included: minimum pressure 974.5 mb. (28.78 in.); maximum winds east-southeast 69 m.p.h., with gusts to 98 m.p.h.; rainfall 2.69 ins; and tides estimated 4 ft. above normal. There were no casualties and property damage was estimated at $30,000.

Arlene continued on a northeasterly path after leaving Bermuda, with some acceleration of forward speed and a slight increase in intensity for a short time, then weakened some on the 10th and during the night of August 10-11 quickly lost tropical characteristics and merged into a frontal zone some 200 mi. southeast of Newfoundland.

HURRICANE BEULAH, AUGUST 20-28

The circulation from which hurricane Beulah developed was located by Navy reconnaissance near 14°N., 51°W., about midday, August 20 with maximum winds 35 m.p.h., in squalls and surface pressure 1006 mb. (29.71 in.). Surface ship reports and TIROS VI photographs had indicated disturbed conditions over a wide area from the Cape Verde Islands westward for several days, but reconnaissance on the 19th had found no pattern of circulation.

At 1200 GMT, August 21, ship reports indicated winds of 35 to 40 m.p.h., and a reconnaissance a few hours later recorded maximum winds 52 m.p.h., and minimum pressure 1005 mb. (29.68 in.) in the center near 16.5°N., 54.5°W. Beulah moved west-northwestward for the next 24 hours while slowly intensifying to hurricane force by the afternoon of the 22d, when Navy reconnaissance reported a well-formed eye, central pressure 994 mb. (29.35 in.) and winds of 78 m.p.h., just east of the eye. About this time a change in course to northwest removed any threat to the Leeward Islands. Intensification accelerated during the night of August 22 and continued through the 23d. Beulah reached its maximum intensity, with central pressure 958 mb. (28.29 in.) and highest winds estimated about 120 m.p.h., at 0630 GMT, August 24. The eye at this time was elliptical with 10- to 15-mile radii. By late afternoon a filling trend had begun and continued during the next 24 hours, with winds dropping to about 105 m.p.h., and the eye diameter increasing to 60 miles on the 25th. The hurricane was moving toward the north-northwest during the deepening and later filling

stages, and turned toward the north, then the north-northeast and increased forward speed on the 25th. By the 26th its movement was about 25 m.p.h., toward the northeast. The acceleration continued and late on the 27th Beulah passed about 250 miles east of Newfoundland moving north-northeast at near 40 m.p.h. By 0400 GMT, August 28, it was extratropical, but maximum winds remained 70 m.p.h., or higher, and the Low was still accompanied by gales in the British Isles on August 30.

No damage or deaths have been attributed to Beulah. Two cloud seeding experiments were conducted in this hurricane on August 23 and 24.

TROPICAL STORM, SEPTEMBER 10-15

Ship reports indicated a very weak circulation north of Puerto Rico on September 8. The depression, marked by a squally area, drifted slowly northward, and passed over Bermuda during the afternoon of September 10, with minimum pressure 1007 mb. (29.74 in.) and winds of 25 m.p.h. After the circulation had passed the island a small, tight, typically-tropical pattern developed and winds reached tropical storm intensity during the early morning of the 11th. The storm passed across the main shipping lanes moving just ahead of a cold front during the next 3 days. Maximum intensity occurred on the 12th when the MS FREIBURG (37°N., 52.5°W.) experienced 68-kt. winds, 27-ft. seas, and pressure 995 mb. (29.39 in.). Tropical features were lost on September 14 and late that night the circulation was absorbed into a larger extratropical storm south of Iceland. No damage or casualities have been reported.

HURRICANE CINDY, SEPTEMBER 16-19

Hurricane Cindy, the first in the Gulf of Mexico in 2 years, formed in a trough of low pressure located about 200 miles east-northeast of Brownsville, Tex., on the morning of September 16. Weather conditions had been disturbed for several days in the southwestern Gulf, and ship reports received around 1800 GMT indicated that a circulation of tropical storm strength had formed, and was intensifying rapidly. Two hours later the central eye was sufficiently developed to be located about 200 miles east of Corpus Christi by the WSR-57 radar at Galveston. At the same time, a report from the SS SABINE near the storm center indicated hurricane force winds, but there is some question as to the accuracy of the wind velocity recorder reading. Cindy moved northward at an average speed of 8 m.p.h., during the afternoon and night of the 16th, remaining relatively small in area, with no further increase in intensity although most of the circulation was still over the warm Gulf waters.

Winds and tides along the coast from the Galveston area eastward increased during the evening, with winds reaching maximum values during the early morning hours of the 17th. Over the Gulf, highest sustained winds were estimated at 80 m.p.h., and the highest gusts on the coast were also 80 m.p.h., measured at the Bureau of Commercial Fisheries installation near the eastern tip of Galveston Island, and estimated at Gilchrist. The Weather Bureau Office at Galveston recorded a fastest mile at the rate of 50 m.p.h., and a peak gust of 74 m.p.h., early on the 17th. In the Port Arthur area, the highest gusts were from 40 to 50 m.p.h., while in Louisiana gusts were estimated as high as 60 m.p.h., at Grand Chenier and 45 m.p.h., at Cameron, but were generally in the 25 to 35 m.p.h., range.

The central eye of Cindy, some 20 miles in diameter, moved over the coastline around High Island, about midway between Galveston and Port Arthur. The Corps of Engineers there reported "light winds and near calm" between 7:30 and 11 a.m., c.s.t., on the 17th and a minimum barometer reading of 29.44 in. (997 mb.) at 10:00 a.m. A slightly lower pressure, 29.41 in. (996 mb.) was recorded inland at Anahuac between 2:27 and 2:45 p.m.

The storm center became almost stationary for about 18 hours shortly after moving inland, then drifted very slowly westward and southwestward with slowly decreasing intensity through the Texas Coastal Plain on September 18 and 19. This unusually slow movement during the decay of the storm resulted in an extended period of heavy rainfall in Cindy's northeastern sector over extreme southeastern Texas and southwestern Louisiana. Storm rainfall totals were 15 to 20 in. in portions of Jefferson, Newton, and Orange Counties, and Calcasieu and Vermilion Parishes. The heaviest rainfall occurred at Deweyville, in southern Newton County; a 3-day total of 23.50 in., including 20.60 in. in 24 hours between the 7 a.m., c.s.t., observations on September 17 and 18.

Rainfall to the west and south of the almost stationary storm center during this period was relatively light. Galveston recorded only 3.64 in. on the 16th and 17th; Anahuac, 2.63 in. for the same period; amounts were well under 2 in. in the Houston area.

Storm totals were generally 4 to 8 in. in southern Louisiana as far east as Terrebonne Parish, where Houma received 7.90 in. during the 15-17th. Moist air pushed northward by Cindy's circulation brought significant rainfall, ranging up to 5 in. or more locally, to much of southwest and central Oklahoma on September 16.

Since Cindy was a relatively small storm, barely of hurricane intensity, and developed near the coast, extremely high tides were not produced. Tides ranged generally from 3 to 5 ft. above mean sea level along the upper Texas and western Louisiana coasts. Except in Galveston Channel, no levels greater than 4 ft. were recorded in Galveston Bay. Indeed during the afternoon and evening of the 17th tides were as much as 2 to 3 ft. below normal in the upper reaches of the Bay and in the Houston Ship Channel as a result of the persistent strong northerly winds on the west side of Cindy's nearly stationary center.

The highest reliable recorded tide in the Galveston area was 4.6 ft., at pier 21 in Galveston Channel. Along the Gulf side of the island, tides averaged near 4 ft. Farther east, the water level reached 3.8 ft. at Sabine, Tex. In Louisiana, reports were generally 3.5 to 4 ft., with highest values -- 5.5 to 6.0 ft. -- south of Lake Charles at the mouth of the Calcasieu River.

Property damage from wind was minor, consisting of roof damage to beach homes. Only minor flooding and some slight damage was attributable to tides, but several roads were impassable for short periods, and waves destroyed several piers and caused some damage to small boats.

Considerable damage accrued from flooding streams and drainage canals and from ponding of water in the areas of extremely heavy rainfall over the flat topography of the lower Sabine Basin in both Texas and Louisiana. Flood water entered about 4,000 homes in Jefferson, Orange,

and Newton Counties, remaining in some for extended periods. Conditions were most severe in the Port Arthur-Port Acres area.

Overall property damage--mainly from the flooding--was estimated at $11,700,000. Principal crop damage, estimated near $500,000 in Texas and $360,000 in Louisiana, was to unharvested rice. Fortunately most of the crop had already been combined, and rainfall in most areas was considered more beneficial than damaging to crops and ranges

One man drowned when he fell from a crew boat evacuating personnel from the offshore oil rigs south of Cameron, La., and 2 small sisters drowned at Port Acres on September 22 in the persistent flood waters still covering that section.

TROPICAL CYCLONE DATA

HURRICANE CINDY
September 16-20, 1963

Station	Date Sept.	Pressure (inches) Low	Pressure (inches) Time+	Wind (miles per hour) Fastest Mile	Wind (miles per hour) Time+	Wind (miles per hour) Gusts	Wind (miles per hour) Time+	Highest Tide (feet) #	Highest Tide (feet) Time+	Storm Rainfall (inches)	Remarks
TEXAS											
Anahuac	17	29.41	1427-1445			ENE 76	0820				
Galveston WBO	17	29.54	0529	NE 50	0215	NE 74	0216			3.64	
Galveston BCF	17	29.59	0545			NNE 80	0300				
Galveston	17							4.6	0310		Pier 21 - North side of Island.
Galveston	17							4.0	0300		17th St. Pier - Gulf side of Island.
High Island	17	29.44	1000	E 60-65	0700	E 69	0700	3.6	1600-1630	2.75	
Houston WBAS	17	29.73	1510	N 31	0530	NNW 46	0917			1.00	
Port Arthur WBAS	17	29.69	1700-1800			NE 42	0500			15.17	
Port Arthur Ship Ch.	17							3.3	1600		
Sabine	17					SE 75*		3.8	0345-0525		
San Leon	17	29.69	0600			N 65*	0500-0600	2.6	0500		
Texas City	17	29.59	0215			NW 60	0250	4.0	0415		
Total Storm Rainfalls											
Beaumont										15.62	
Beaumont 9W										18.71	
Deweyville										23.50	
Evadale										14.64	
Fannett 1S										20 15	
Kirbyville										11.85	
Kountze										14.00	
Orange										22.80	
Port Arthur-Lewis Dr.										17.42	
Vidor										17.00*	
Winnie 12SE										20.75	
LOUISIANA											
Cameron	17					45*		4.5	0900		Tide above normal.
Grand Chenier	17			ENE 60*	0130					5.50	
Jennings	17	29.80	0600	NE 35*	0830					5.62	
Lafayette FAA AP	17	29.91	1800	ENE 28	0900-1000					7.08	
Lake Charles WBAS	17	29.85	1800	ESE 23	1520	E 35	0730			4.67	Tide 5.5 to 6.0 feet above normal at mouth of Calcasieu River.
Total Storm Rainfalls											
Gueydan										7.79	
Hackberry										7.56	
Houma										7.90	
Pecan Island										20.25	
Sulphur Mines										9.77	
Vinton										18.30	

\+ All times are Central Standard
\# Above mean sea level
* Estimated

HURRICANE DEBRA, SEPTEMBER 19-24

The fourth hurricane of 1963 formed in the southern mid-Atlantic in an area of unsettled weather which had been under observation by ships, aircraft, and TIROS VII satellite for several days. The first indications of the circulation pattern came from a ship report and a TIROS picture early on September 19. A reconnaissance aircraft penetrated to the southeastern portion of the storm on the 20th before reaching its fuel limit. A radar eye and west winds of 30 m.p.h., at the surface 20 miles south of the center were noted. Winds of 75 m.p.h., and central pressure about 1000 mb. (29.53 in.) were reported by aircraft on the afternoon of September 21. Debra remained small in size and of minimal hurricane force for about 24 hours as it moved slowly northward on the 21st and 22d. On September 23, Debra began to weaken and was finally absorbed into a large extratropical Low on the 24th near 36°N., 38°W. No loss of life or property damage has been attributed to Debra.

HURRICANE EDITH, SEPTEMBER 23-29

Hurricane Edith formed in the southwestern North Atlantic a short distance east of the Lesser Antilles on September 24. A disturbance was first suspected in this region when the Dutch tanker ACTEON reported a south wind of 28 m.p.h., and surface pressure of 1010.1 mb. (29.83 in.) on September 22. TIROS VII photographs the next day showed a vortex and extensive cloudiness centered near 11°N., 52°W., but a reconnaissance aircraft late that afternoon found winds only 29 m.p.h., surface pressure 1005 mb. (29.68 in.), and no organized spiral patterns of rainfall on radar. The early morning flight on the 24th reported surface winds estimated at 70 m.p.h., increasing a short time later to 80 m.p.h. The lowest pressure computed in Edith was 978 mb. (28.88 in.) during the morning of the 24th. The center at this time was located about 120 miles east of Barbados moving west-northwestward.

The center of Edith passed over the northern portion of St. Lucia between 0600 and 0800 GMT, September 25. The hurricane was at maximum intensity about this time. Highest winds measured, 127 m.p.h., were at Fort de France, Martinique. The barometer there touched 995 mb. (29.38 in.). Wind speeds reached 90 m.p.h., on St. Lucia; 80 m.p.h., in gusts on Dominica; and 60 to 65 m.p.h., in squalls on the northern tip of Barbados.

Storm tides were up to 6 ft. above normal on Barbados, 8 ft. on Martinique, and 10 ft. on St. Lucia.

Heavy damage from wind, rain, and tides to both property and crops was reported, ranging up to almost complete destruction in some sections of Martinique, where 10 persons were killed and 50 injured. Monetary estimates of damage were: Martinique - $40 million; St. Lucia - $3,465,000; Dominica - $2,611,600 and Barbados - $145,000.

After entering the Caribbean on a generally west-northwestward course, Edith showed little immediate change in intensity but never recovered from the effects of passing through the high mountains of the Lesser Antilles. During September 26 the circulation, now barely of hurricane force, became more disorganized, slowed down and turned to a more north-northwesterly course. The center entered the Dominican Republic early on the 27th west of La Romana, where maximum winds were 63 m.p.h., and moved into the Atlantic about 8 hours later. After passing over Hispaniola, Edith continued to weaken as it moved into the southeastern Bahamas. By late afternoon of September 28, winds were below tropical storm force, and by the 29th only an area of squalls remained.

Damage in the Dominican Republic was light. Moderate rain; gale force winds, estimated up to 60 m.p.h., at Cabo Rojo; and heavy surf combined to produce about $150,000 damage to property and $250,000 to crops in southwestern Puerto Rico.

HURRICANE FLORA, SEPTEMBER 26-OCTOBER 13

The original disturbance from which hurricane Flora eventually developed probably moved across most of the southern North Atlantic. On the morning of September 26, TIROS VII sighted a poorly-organized circulation consisting of a complex cloud system with two areas of concentration. Flora was associated with the more southerly, a weak depression on the intertropical convergence zone located at that time near 8°N., 34°W. The next day TIROS showed the center near 8°N., 40°W.

Little additional information was available until early on the 30th. A delayed report from the SINON, taken at 2230 GMT, September 29, indicated a pressure dip to 1000 mb. (29.54 in.), and a wind shift from northwest to southwest. The DEL ALBA's 0600 GMT observation showed pressure 1006.8 mb. (29.73 in.) and northeast winds of 35 kt. At 1500 GMT a delayed complete report from this ship confirmed its passage near the storm center during the night.

Navy reconnaissance aircraft reached the center at 1407 GMT, found a well-developed circular eye 8 miles in diameter, central pressure 994 mb. (29.35 in.) and surface winds 74 kt. The report included the observer's comment that Flora was the best organized and most concentrated tropical cyclone in 2 years.

Flora was moving west-northwestward; the eye passed over Tobago at 1440 A.s.t., September 30, with maximum sustained winds estimated 90 to 100 m.p.h., and uncorrected minimum pressure 974 mb. (28.77 in.); it passed some 30 miles south of Grenada about 3 hours later. Winds there were estimated at 50 kt. On Trinidad winds were about 55 m.p.h., in gusts south of the mountains, and 70 m.p.h., with torrential rain, at Northwest Point.

Crop and property damage was estimated at about $30 million on Tobago and 24 persons were killed. Extensive minor damage on Trinidad totaled near $100,000. Damage was about $25,000 on Grenada and 6 persons drowned there.

Flora's track in the Windwards was the most southerly since the storm of June 27-28, 1933, which passed over Trinidad.

The hurricane continued to increase in size and intensity after entering the Caribbean, moving on a generally smooth and regular track, with a gradually increasing northerly component of motion. It intensified slowly until October 3, when it deepened rapidly. At 1620 GMT, Navy reconnaissance reported a central pressure of 936 mb. (27.64 in.). This was a decrease from 968 mb. during the previous afternoon and 954 mb. during the night of the 2d. Reconnaissance flight level winds of 145 kt. were measured on the 2d and were near the same speed on the 3d.

Some further intensification probably occurred until the center reached the coast in the central portion of the southern peninsula of Haiti at Cotes de Fer around 2000 e.s.t., October 3. At that time sustained surface winds were estimated around 140 m.p.h., with gusts of 180 to 200 m.p.h. Surface pressure was probably near 930 mb. (27.46 in.). Both pressure and winds in Flora were closely comparable to those in Donna when it crossed the Florida Keys on September 10, 1960, and in Carla when it reached the Texas coast on September 11, 1961.

In Haiti calms were reported at Fond des Negres, Cotes de Fer, and Anse a Veau. Winds of 102 m.p.h., were recorded at Cotes de Fer at 1900 e.s.t., and 120 m.p.h., at the Army base near Durez. Rainfall at Mirogoane probably exceeded 75 in. during the hurricane. At Port-au-Prince maximum winds were 48 m.p.h., with gusts to 63 m.p.h., and the lowest pressure was 978 mb. (28.88 in.). At Cabo Rojo, Dominican Republic, wind gusts reached 48 m.p.h., with heavy rainfall.

The most intense portion of Flora did not affect Jamaica, but squalls in the outer circulation brought torrential rainfalls. Some totals (most for 3 days) included 60.00 in. at Spring Hill; 51.70 in. at Cedar Valley; 47.00 in. at Castleton Gardens; 44.32 in. at Hermitage Dam; 35.00 in. at Gordon Town; and 16.70 in. at Palisadoes Airport.

Flora weakened slightly over land but had regained some strength over the Windward Passage before it moved into eastern Cuba, with the eye entering the coast about 30 miles east of Guantanamo Bay around 1100 e.s.t., October 4. Maximum winds were near 125 m.p.h., at this time.

During the next 5 days the hurricane meandered over eastern Cuba with torrential rainfall and surface winds remaining over or very near hurricane force. Surface friction did reduce the winds somewhat, but 70 to 100 m.p.h., speeds lashed large portions of the region for 100 hours or more. This was possible because much of the circulation was still over the warm ocean and conditions aloft remained favorable for intensification. The unusually slow and erratic motion was caused by the effects of high pressure areas to the west, north, and east which "boxed in" Flora and efficiently blocked movement.

Rainfall amounts in Cuba during this period were enormous. Radio broadcasts mentioned a total of 90 in. near Bayamo, Oriente. The Director of the National Observatory, Havana, reported rainfall accumulations at climatological stations included: 79.72 in. at Tacajo (20°51'N., 75°44'W.); 66.22 in. at Baguanos (20°46'N., 76°02'W.); 64.21 in. at Santa Ana (20°16'N., 75°54'W.); 52.60 in. at Elia (20°58'N., 77°27'W.). Guantanamo Bay had 17.20 in., more than the total for all of 1962.

Late on October 7, Flora finally began to move east-northeastward away from Cuba. On the 8th the direction of motion gradually shifted toward northeast, and the hurricane center moved through the southeastern Bahamas during the night of the 8th-9th. Flora was "the worst hurricane experienced there within living memory" on Inagua, where winds were estimated at 75 to 80 m.p.h. The eye passed over Mayaguana shortly after midnight with maximum winds of 83 m.p.h., at 0130 e.s.t., October 9.

Flora moved rapidly northeastward during the next 4 days, passing well south and east of Bermuda (gales were reported there on the 10th), and across the main shipping lanes on the 11th and 12th. Surface pressure during this period decreased to 963 mb. (28.44 in.) at 1200 GMT, October 11, and maximum winds were near 100 kt. from late on the 9th until the 11th. Flora lost its tropical characteristics over the cold waters east of Newfoundland by the afternoon of the 12th and moved into the area between Greenland and Iceland on the 13th.

Damage and casualties in southern Hispaniola and eastern Cuba were catastrophic. Complete surveys of damage have not been completed in these areas but damage was more widespread and severe than in any other recorded hurricane in this region. Destruction over the mountainous terrain of the Haitian Peninsula eastward into the Dominican Republic ranged from severe to complete. Flash floods or storm surges washed away sections of many towns and landslides buried others. Most crops were completely destroyed.

In Haiti about 3,500 bodies were counted and several thousand persons were missing. In this area, about half of those reported missing are eventually found to be casualties, so an estimate of 5,000 deaths is reasonable. Property and crop damage was estimated at $125 million, although some reliable sources indicate it may be near $180 million.

In the Dominican Republic preliminary information estimated losses, mainly from the most extensive floods of record which inundated 10,000 sq. km., in the western portion of the country, at $60 million. Loss of life was estimated at over 400. Several months after the hurricane, roads and communication channels were still unrestored in many sections.

The last official count of fatalities released in Cuba was 1,159 with more than 1,000 persons missing. Applying the same rule as in Haiti, the death toll was probably at least 1,750. No official estimate of property and crop damage has been released by the Cuban Government. Unofficial reports from Cuba indicated there were heavy losses to field crops, livestock, poultry, and vegetables and extensive damage to factories, homes, roads, and bridges. To compound damage from winds, tides, and extremely heavy rains, the productive valleys and lowlands of Oriente and Camaguey Provinces remained flooded for many days.

Reports from Cuba estimate damage to the sugar crop at 15 to 60 percent; to tobacco 15 to 50 percent; to coffee and cocoa 25 to 100 percent; and to rice 50 to 75 percent. There was also extensive damage to bananas, pineapples, and cotton. Estimates of total damage have ranged upward to $500 million, but it is believed $300 million is more realistic.

The long-term effects on agriculture, which will be curtailed for 5 to 8 years in many places on these islands, cannot be evaluated.

On Jamaica 11 persons died, most in flash floods resulting from the high-intensity rainfall. Damage included: roads and bridges $4,200,000; waterworks $420,000; houses, etc., $280,000; bananas $5,600,000; other crops $1,400,000, a total of $11,900,000.

Extensive damage was reported in the Bahamas to wharves, seawalls, roofs, roads, and crops. Total damage was estimated at $1,525,000 and 1 person drowned at Mayaguana. One man also drowned in heavy surf produced by Flora at Miami, Fla.

A considerable number of small work boats and schooners were reported missing and presumed lost in the

Caribbean, particularly off southern Haiti. These normally carry from 2 to 7 or more crew and passengers. The possible 100 or more missing have not been included in the total estimate of 7,193 fatalities. The overall damage total of $528,550,000 is also conservative.

HURRICANE GINNY, OCTOBER 16-30

The depression from which hurricane Ginny developed first formed as a flat, weak surface circulation along a cold front in the southeastern Bahamas on October 16. The depression was not tropical (it had no warm central core) as it moved northward for 2 days, then turned northwestward and intensified to storm strength on the 19th, and to hurricane force on the 20th when it was centered about 120 miles south-southeast of Cape Hatteras, N. C.

Ginny remained almost stationary, with the center apparently moving in a clockwise loop, until the night of October 21-22 when an unusual south-southwestward movement began due to the influence of a blocking high pressure area to the north. The relatively slow movement toward lower latitudes was accompanied by changes in the thermal structure. On the morning of the 22d aircraft reconnaissance reported conditions more like a hurricane than on the previous days, with a poorly-defined eye 20 miles in diameter.

During the 23d some weakening occurred, with winds probably below hurricane intensity for about 10 hours. Ginny quickly returned to hurricane force, the movement shifted to west, then northwest, and later north. The wall cloud surrounding the eye moved within 50 miles of the Cape Kennedy-Daytona Beach region of Florida on the 24th, then passed parallel to and about 60 to 100 miles off the Georgia, South Carolina, and southern North Carolina coasts, during the 25th and 26th, with winds of 85 to 100 m.p.h., over a small area near the center. Late on October 26 and on the 27th Ginny drifted slowly east-southeastward for about 36 hours, passing just south of the region it had covered a week before and completing a large clockwise loop.

During the night of the 27th Ginny finally turned north-northeastward, accelerated while intensifying slightly, and moved rapidly to off Nantucket by the morning of the 29th and into Nova Scotia around midday. Ginny again took on extratropical features over Nova Scotia and was absorbed into the circulation of a coastal storm which had followed it up the western Atlantic.

Although Ginny remained near land for an extended period -- the center was within 250 miles of the coast for 8 days, posing difficult problems for forecasters -- its effects were moderate and more beneficial than damaging in most places. Winds along the coast ranged around 35 to 45 m.p.h., from Florida to Virginia, and in New England, with gusts 10 to 20 m.p.h., higher. Highest winds at any land station were 70 m.p.h., with gusts to 100 m.p.h., at Oak Island, N. C. The fastest mile on the New England coast was 65 m.p.h., at Nantucket, Mass. The Coast Guard vessel COWSLIP, off Portland, Maine, reported 30- to 40-ft. seas, pressure 981 mb. (28.98 in.), and the anemometer broke while indicating a wind speed of about 105 m.p.h.

Good rains in coastal areas from Florida to North Carolina, ranging up to 5 inches locally, relieved extremely dry conditions, as did moderate to heavy rain or snow in much of New England. From 6 to 18 inches of snow occurred in northern and central Maine in cold air moving southward on the west side of the hurricane center. Two persons perished in the Maine snowstorm, and a third death occurred at Bernard, Maine, as a man, trying to rescue his capsized boat, suffered a heart attack. Four other persons were probably lost on the tug OTHO off Norfolk, Va.

Damage resulted from beach erosion, minor flooding, and some structural damage to boats, houses, sheds, and utility lines, mainly along the Maine coast and on Cape Cod. The overall figure was near $400,000. Damage in eastern Canada was confined to minor flooding and loss of small boats.

TROPICAL STORM HELENA, OCTOBER 25-29

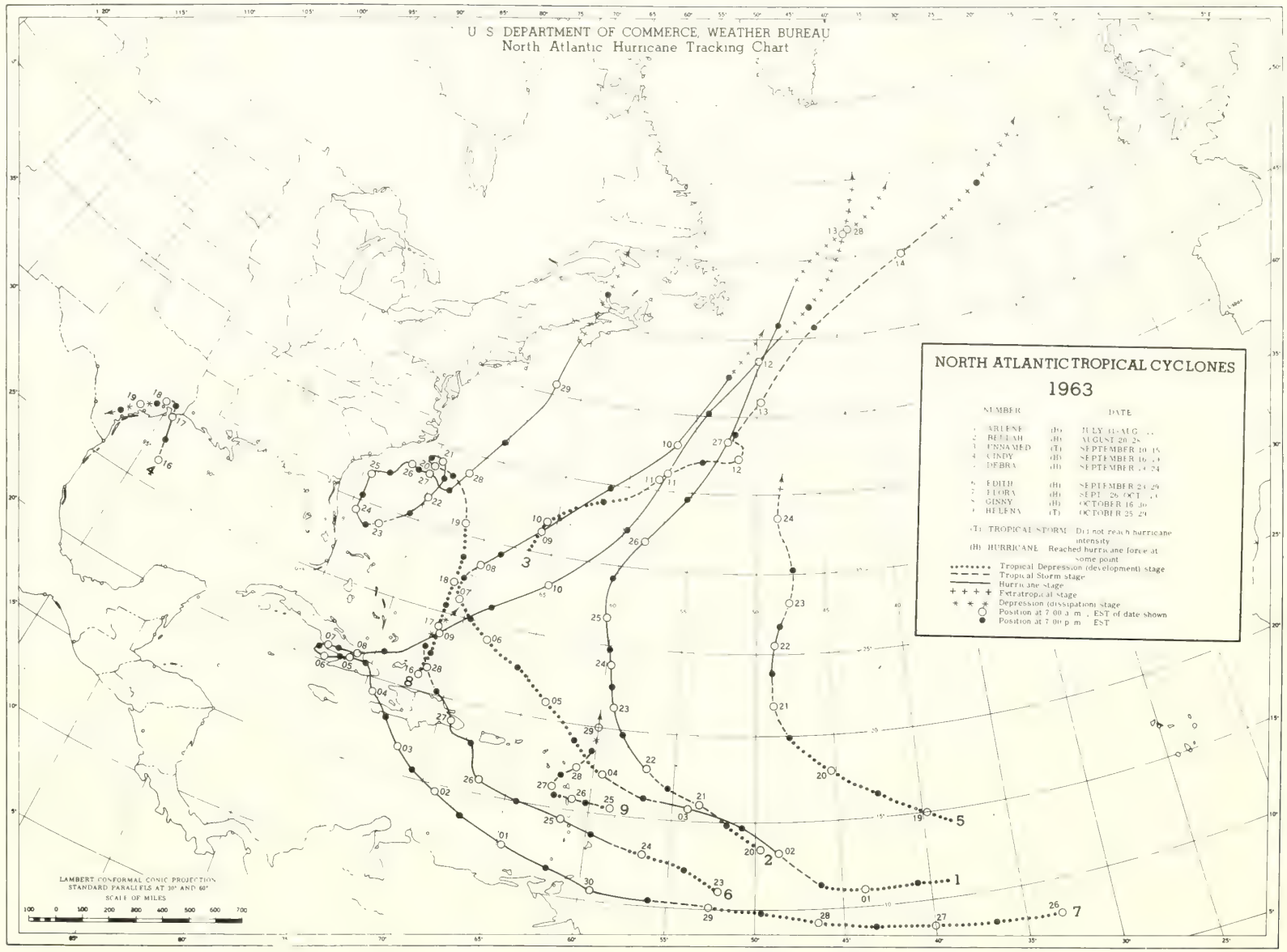
Tropical storm Helena developed in an easterly wave east of the Lesser Antilles on October 25. TIROS photographs had shown extensive cloudiness, apparently associated with the easterly wave, near 15°N, 55°W., on the previous day. Reports from the AMERICUS VESPUCCI and the RIO ORINOCO in the disturbed area during the early afternoon of the 25th, included southerly winds of 32 and 40 kt., respectively, and continuous rain. A reconnaissance aircraft soon reached the area, about 120 miles east of Martinique, and reported an ill-defined tropical storm with no wall cloud but squall bands with surface winds up to 43 kt. in the eastern semicircle, and central pressure 1005 mb. (29.68 in.).

Helena intensified slightly as it moved west-northwestward toward Dominica. The center passed over the northern coast of that island around 0700 A.s.t., October 26. The 5,000-ft. mountains evidently disrupted the poorly-organized circulation. Reconnaissance later in the day reported sustained winds only 30 kt., below storm force.

During the night of October 26, Helena became almost stationary, then changed course early the next morning to eastward, then northward and intensified slightly. Central pressure dropped to 1002 mb. (29.59 in.) and aircraft reported winds of 50 kt., in squalls between Guadeloupe and Dominica. Most squalls were located in a small area of the eastern quadrant of the storm as the center moved slowly north-northeastward on the 27th and 28th, gradually weakening. Aircraft on the morning of the 29th reported only a weak circulation and squally weather with highest winds around 22 kt.

Helena caused considerable damage to small craft, shore roads and houses in the Windward Islands. Five persons were reported dead and 14 seriously injured on Guadeloupe. Several barges and fishing craft were sunk or damaged. Total damage was estimated near $500,000.

WB FORM 770-17
(10-55)



TROPICAL CYCLONE DATA

HURRICANE GINNY
OCTOBER 16-30, 1963

Station	Date Oct.	Pressure (inches) Low	Time	Wind (miles per hour) Fastest Mile	Time+	Gusts	Time+	Highest Tide (feet) #	Time+	Storm Rainfall (inches)	Remarks
FLORIDA											
Daytona Beach A.P.	24	29.77		28 (1)	23	37		2-3		0.41	Florida damage estimated at $50,000.
Jacksonville A.P.	24	29.85		40		43				0.33	
St. Augustine										1.32	
GEORGIA											
Brunswick	24	29.82	1000			30				0.69	Georgia damage estimated at $2,500. Winds up to 45 m.p.h. on outer beaches.
Savannah A.P.	25	29.82		24	0320	30	0058			0.02	
Savannah Beach										1.30	
SOUTH CAROLINA											
Charleston	25	29.83	1545	42	1020			2.7	0500	3.25	South Carolina damage estimated at $3,000.
Ocean Drive Beach	25					47	1400			3.00	
Sullivan's Island	25	29.78	1330			30	1200			3.75	
NORTH CAROLINA											
Cape Hatteras	21	29.61	0300	35	20/2051	45	20/2051			5.36	North Carolina damage estimated at $5,000. Tides 2.0 to 4.0 ft. above normal on most of North Carolina coast.
Oak Island LBS	26	29.62	0400	70		100	0255				
Wilmington A.P.	20	29.75	1457	35	1214	45	1610			3.77	
VIRGINIA											
Cape Henry				38	21 & 22	43	21 & 22				
Chesapeake Lt.	22			43	1400						
Norfolk A.P.	21	29.88	0230	35	22/1755	40	22/0755	1.6	22/1230	0.47	
NEW YORK											
Bridgehampton	29	29.35				50				0.11	
Montauk Pt.	29					61	0700				
New Suffolk	29	29.44		E 60		E 65					
New York City	29	29.54	1100	22	1239	39	1850	1.0		0	
CONNECTICUT											
Bridgeport	29	29.53	1230	35	2158	52	2158			0.13	
New Haven	29	29.48	1300	30	1815	34	1815			0.23	
RHODE ISLAND											
Block Island	29	29.38	0930			55	0450			1.44	
Providence	29	29.39	1255	33	0840	45	0838	1.2		1.60	
MASSACHUSETTS											Massachusetts damage estimated at $100,000.
Boston	29	29.40	0957	40	0827	46	0830			1.17	
Hyannis	29	29.23	0900	46	0700	57	0700				
Nantucket	29	29.12	0751	65	0800	76	0800	1.8		2.62	
Worcester	29	29.43		27		42					
MAINE											Maine damage estimated at over $200,000; New Hampshire damage, $15,000.
East Boothbay	29	29.05	1415								
Eastport						75	1400				
Portland	29	29.21		45	1200	68	1200			1.24	
Rockland						100	1300				

\+ Eastern Standard Time
\# Above Normal
(1) 1-Minute Wind Speed

NORTH ATLANTIC TROPICAL CYCLONES, 1963

Table 1

	Storm name	Date	Area where first reported	Coast lines crossed	Highest wind speed reported	Lowest pressure reported	Place of dissipation reported	Intensity	Remarks
1.	ARLENE	July 31-Aug. 11	South-central North Atlantic	Bermuda	Est. 127 m.p.h., recon. on Aug. 2 and 3, east of Windward Islands	969 mb. (28.68 in.), recon. Aug. 9, northeast of Bermuda	Atlantic - southeast of Newfoundland	Hurricane	Damage estimated at $300,000 on Bermuda. No deaths or injuries.
2.	BEULAH	Aug. 20-28	Southwestern North Atlantic	None	Est. 120 m.p.h., recon. on Aug. 24, northeast of Windward Islands	958 mb. (28.29 in.), recon. Aug. 24, northeast of Windward Islands	Atlantic - southeast of Greenland	Hurricane	Cloud seeding experiments performed on August 23 and 24.
3.	TROPICAL STORM	Sept. 10-15	Southwest of Bermuda	None (while storm)	78 m.p.h., SS FREIBURG	995 mb. (29.38 in.), SS FREIBURG	Atlantic - south of Iceland	Tropical Storm	
4.	CINDY	Sept. 16-19	Northwestern Gulf of Mexico	Upper Texas coast	Est. 80 m.p.h., on Sept. 16 and 17, northwestern Gulf of Mexico	996 mb. (29.41 in.), Sept. 17, Anahuac, Texas	southern Texas	Hurricane	Damage in Texas and Louisiana totaled $11.7 million to property, $860,000 to crops, chiefly from flooding. Three deaths. Rainfall 23.50 in. in three days at Deweyville, Tex. Rain beneficial in most places.
5.	DEBRA	Sept. 19-24	South-central North Atlantic	None	Est. 75 m.p.h., recon. on Sept. 21 and 22	999 mb. (29.50 in.), Sept. 22 and 23	Atlantic - east of Bermuda	Hurricane	
6.	EDITH	Sept. 23-29	Southwestern North Atlantic	St. Lucia and Dominican Republic	127 m.p.h., Sept. 25, Fort de France, Martinique	978 mb. (28.88 in.), recon. Sept. 24, east of Windward Islands	Atlantic - east of Bahamas	Hurricane	Damage $46.6 million in Lesser Antilles and Puerto Rico. 10 deaths, 50 injuries on Martinique.
7.	FLORA	Sept. 26-Oct. 13	Southeastern North Atlantic	Tobago, Haiti, and Cuba	Est. 140 m.p.h. (gusts 180-200 m.p.h.), Oct. 3, south coast of Haiti	936 mb. (27.64 in.), recon. Oct. 3 south of Haiti	Atlantic - southeast of Greenland	Hurricane	Damage $528.5 million in Lesser Antilles, Haiti, Dominican Republic, Cuba, Jamaica, Bahamas. Estimated deaths 7,193 (exceeded in the Atlantic only by hurricane of Oct. 10-12, 1780). Comparable in intensity to Donna, 1960 and Carla, 1961.
8.	GINNY	Oct. 16-30	Southeastern Bahamas	Nova Scotia	105* m.p.h. USCG COWSLIP, Oct. 29, off Portland, Maine	948 mb. (27.99 in.), recon. Oct. 29, south of Nova Scotia	Near mouth of St. Lawrence River	Hurricane	Damage $400,000 in Florida, Carolinas, and New England. Seven deaths. Rain and snow beneficial in relieving extremely dry conditions in some sections.
9.	HELENA	Oct. 25-29	Southwestern North Atlantic	Through Windward Islands	Est. 50 m.p.h., recon. on Oct. 27, west of Guadeloupe, F.W.I.	1002 mb. (29.59 in.), recon. Oct. 27, west of Guadeloupe	Atlantic, northeast of Windward Islands	Tropical Storm	Damage $500,000 in Lesser Antilles. Five deaths, 14 injuries on Guadeloupe.

NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS

Frequency of Tropical Cyclones (Including Hurricanes) by Months and Years

		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1886			3	1	2	2	2			10
1887		1		2	2	3	6	1	2	17
1888			1	1	2	2	1	3		10
1889		1	1		1	5	1			9
1890					1					1
1891				1	2	3	4	1		11
1892			1		1	4	3			9
1893			1	1	5	3	1	1		12
1894					2	1	3			6
1895					2	1	3			6
1896				1	1	2	2			6
1897					1	2	2			5
1898					2	5	2			9
1899				1	2	1	2			6
1900					1	3	3			7
1901			1	2	2	3	2			10
1902			2			1	1	1		5
1903				1	1	4	2	1		9
1904			1			1	3			5
1905						3	2			5
1906			2		1	3	4	1		11
1907			1			2	1			4
1908		Mar. 1		1	1	3	2			8
1909			2	2	2	2	1	1		10
1910					1	2	1			4
1911					2	1	1			4
1912			1	1		1	2	1		6
1913			1		1	1	1			4
1914						1				1
1915				1	2	2				5
1916			1	2	3	4	3	1		14
1917					2	1				3
1918					3	2				5
1919				1		1		1		3
1920						4				4
1921			1			3	2			6
1922			1			1	2			4
1923					1	1	5			7
1924			1		2	2	2	1		8
1925						1		1		2
1926				1	2	5	2	1		11
1927					1	3	3			7
1928					2	3	1			6
1929			1			1	1			3
1930					2					2
1931			1	1	2	3	1	1		9
1932		1			3	3	3	1		11
1933		1	1	3	7	5	3	1		21
1934		1	1	1	2	2	3	1		11
1935					3	1	2			6
1936			3	2	6	4	1			16
1937				1	2	6				9
1938					3	1	3	1		8
1939			1		1	1	2			5
1940		1			3	2	2			8
1941						4	2			6
1942					3	3	3	1		10
1943				1	2	4	3			10
1944				3	2	4	2			11
1945			1	1	4	3	1			10
1946			1	1	1	1	2			6
1947				1	2	3	3			9
1948		1		1	2	3	1	1		9
1949					3	7	2	1		13
1950					4	3	6			13
1951		1			3	4	2			10
1952		Feb. 1			2	2	2			7
1953		1			3	4	4	1	1	14
1954			1	1	2	4	1	1	1	11
1955				1	4	5	2			12
1956			1	1	1	4	1			8
1957			2		1	4	1			8
1958			1		4	4	1			10
1959		1	2	2	1	3	2			11
1960			1	2	1	3				7
1961				1		6	2	2		11
1962					2	2	1			5
1963				1	1	5	2			9
Totals	Feb. Mar. 1 1	10	40	45	138	212	145	28	4	621

Frequency of Tropical Cyclones Reaching Hurricane Intensity by Months and Years

		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1886			2	1	2	2	1			8
1887				1	2	3	2	1	1	10
1888			1		2		1	1		5
1889		1			1	3				5
1890					1					1
1891				1	2	3	2			8
1892					1	2	1			4
1893			1	1	5	3				10
1894					1	1	3			5
1895					1		1			2
1896				1	1	2	2			6
1897					1	1				2
1898					2	2				4
1899				1	2	1	1			5
1900					1	2				3
1901				1	2					3
1902			1			1	1			3
1903				1	1	3	2	1		8
1904						1	1			2
1905							1			1
1906			1		1	2	2			6
1907										0
1908		Mar. 1		1		2	1			4
1909				1	1	1	1			4
1910						2	1			3
1911					2	1				3
1912						1	2	1		4
1913			1		1	1				3
1914										0
1915						2	2			4
1916			1	2	3	2	2	1		11
1917					1	1				2
1918						2	1			3
1919							1			1
1920							4			4
1921			1				2	1		4
1922							1	1		2
1923						1	1	1		3
1924						2	1	1	1	5
1925									1	1
1926				1	2	4	1			8
1927						1	3			4
1928						2	1	1		4
1929							1	1		3
1930						2				2
1931							2			2
1932						3	1	1	1	6
1933			1	1		3	3	1		9
1934			1	1		1	1	1	1	6
1935						2	1	2		5
1936			1	1	3	2				7
1937						3				3
1938						2	1			3
1939						1		2		3
1940						3	1			4
1941							3	1		4
1942						3		1		4
1943				1	1	2	1			5
1944				2	1	3	1			7
1945			1		1	1	1			4
1946				1		1	1			3
1947					2	1	2			5
1948					1	3	1	1		6
1949					2	4	1			7
1950					4	3	4			11
1951		1			2	3	2			8
1952					2	2	2			6
1953					2	3	1			6
1954			1		2	3	1		1	8
1955					3	5	1			9
1956				1	1	1	1			4
1957			1			2				3
1958					3	3	1			7
1959			1	2		3	1			6
1960				1	1	2				4
1961				1		3	1	1		6
1962					1	1	1			3
1963				1	1	4	1			7
Totals	Mar. 1	2	17	26	102	138	68	12	2	368

NORTH ATLANTIC TROPICAL CYCLONES FOR PAST YEARS — CONT'D

TOTAL NUMBER OF TROPICAL CYCLONES, LOSS OF LIFE AND DAMAGE

Year	Total Number Tropical Cyclones*		Total Number Hurricanes		Loss of Life		Damage by Categories**	
	All Areas	Reaching U.S. Coast	All Areas	Reaching U.S. Coast	Total All Areas	United States	Total All Areas	United States
1886	10	7	8	6				
1887	17	4	10	3				
1888	10	6	5	3				
1889	9	4	5	2				
1890	1	0	1	0				
	47	21	29	14				
1891	11	4	8	2				
1892	9	3	4	0				
1893	12	7	10	6				
1894	6	3	5	2				
1895	6	4	2	1				
	44	21	29	11				
1896	6	4	6	4				
1897	5	4	2	1				
1898	9	6	4	3				
1899	6	4	5	3				
1900	7	3	3	1		6000		7
	33	21	20	12				
1901	10	6	3	2		10		6
1902	5	3	3	1		#		#
1903	9	2	8	2		9		6
1904	5	3	2	2		#		6
1905	5	2	1	0		#		#
	34	16	17	7				
1906	11	6	6	4		285		7
1907	4	3	0	0		#		#
1908	8	2	5	1		#		#
1909	10	7	4	3		404		7
1910	4	2	3	2		13		6
	37	20	18	10				
1911	4	2	3	2		17		6
1912	6	4	4	2		12		6
1913	4	3	3	2		#		#
1914	1	1	0	0		#		#
1915	5	4	4	3		600		8
	20	14	14	9				
1916	14	8	11	6		107		7
1917	3	1	2	1		5		5
1918	5	2	3	1		34		6
1919	3	2	1	1		287		7
1920	4	3	4	2		2		6
	29	16	21	11				
1921	6	2	4	2		5		6
1922	4	1	2	0		0		#
1923	7	4	3	2		0		4
1924	8	3	5	2		2		3
1925	2	2	1	1		6		3
	27	12	15	7				
1926	11	4	8	4		269		8
1927	7	1	4	0		0		#
1928	6	3	4	2		1836		7
1929	3	2	3	2		3		6
1930	2	1	2	0		0		2
	29	11	21	8				
1931	9	2	2	0		0		#
1932	11	5	6	2		0		#
1933	21	7	9	5		63		7
1934	11	5	6	3		17		6
1935	6	2	5	2		414		7
	58	21	28	12				
1936	16	7	7	3		9		6
1937	9	4	3	0		0		4
1938	8	4	3	2		600		8
1939	5	3	3	1		3		3
1940	8	3	4	2		51		6
	46	21	20	8				
1941	6	4	4	2		10		7
1942	10	3	4	2	17	8	7	7
1943	10	4	5	1	19	16	7	7
1944	11	4	7	3	1076	64	8	8
1945	10	5	4	3	29	7	8	8
	47	20	24	11				
1946	6	4	3	1	5	0	7	7
1947	9	7	5	3	72	53	8	8
1948	9	4	6	3	24	3	7	7
1949	13	3	7	2	4	4	8	8
1950	13	4	11	3	27	19	7	7
	50	22	32	12				
1951	10	1	8	0	244	0	7	6
1952	7	2	6	1	16	3	6	6
1953	14	6	6	2	3	2	7	7
1954	11	4	8	3	720+	193	9	9
1955	12	5	9	3	1518+	218	9	9
	54	18	37	9				
1956	8	2	4	1	76	21	8	7
1957	8	5	3	1	475	395	8	8
1958	10	1	7	0	49	2	7	7
1959	11	7	7	3	57	24	7	7
1960	7	5	4	2	185	65	8	8
	44	20	25	7				
1961	11	3	8	2	345	46	8	8
1962	5	1	3	0	4	4	6	6
1963	9	1	7	1	7218+	11	9	7
Total	624	279	368	151				
Median	8	4	4	2				

** The Weather Bureau has for some time recognized the fact that without detailed expert appraisal of damage all figures published are merely approximations to fact. Since errors in dollar estimates vary in proportion to the total damage, storms are placed in categories varying from 1 to 9 as follows:

1	Less than $50	4	$5000 to $50,000	7	$5,000,000 to $50,000,000
2	$50 to $500	5	$50,000 to $500,000	8	$50,000,000 to $500,000,000
3	$500 to $5000	6	$500,000 to $5,000,000	9	$500,000,000 to $5,000,000,000

Blank spaces indicate no figures available.

* Including hurricanes.
\# Not reported in literature, believed minor.
\+ Additional deaths for which figures are not available.

TROPICAL CYCLONES IN THE EASTERN NORTH PACIFIC, 1963

Russell V. Wilgus
U. S. Weather Bureau, San Francisco, California

Eight tropical cyclones of storm or hurricane intensity were observed over the eastern North Pacific Ocean during the 1963 season. This is about the yearly average for the area. Four of these cyclones are known to have reached hurricane strength: Emily, Florence, Glenda, and Mona. Emily, however, was designated a hurricane on the basis of a mail report from the MARYMAR which reported winds southeast 75 kt. at 1800 on June 29 near 17.2°N., 101.5°W. On the other hand, a tropical depression on August 7 near 11.3°N., 114.9°W. was at first thought to be of tropical storm strength and named Hazel. Subsequent data did not substantiate this intensity, so the designation of the disturbance as tropical storm Hazel should be disregarded. Highest known winds in the suspected area were 28 kt. measured aboard the RODEZEE.

Mail reports from the STEEL KING suggest that a tropical storm existed in the vicinity of 13°N., 102°W. at midnight June 15 when winds were force 7 or 8 and pressure 995 mb.

In addition to ship reports, information was obtained from one Air Force reconnaissance. This flight determined Florence had dissipated. In addition, the TIROS satellites gave substantial support to the location of Emily at its start and a good picture of Mona was obtained near 19°N., 111°W.

Tropical cyclones with winds between 34 kt. and 63 kt. are classified as tropical storms and with winds of 64 kt. or greater as hurricanes. All times are reported in GMT. A brief summary of each of the tropical cyclones which reached storm intensity or above over eastern North Pacific waters follows and their tracks are shown on the accompanying figure.

HURRICANE EMILY, JUNE 28-30

The first tropical storm, Emily, which was later designated hurricane on the basis of a mail report from MARYMAR, was located near 15.5°N., 100.0°W. at 1800 on June 28 based on ship reports of 30- to 40-kt. winds in the area. The center moved northwestward along the coast and apparently moved inland on the 30th about 75 mi. southeast of Manzanillo, Mexico. Several ships reported winds of 50 kt. during the time the tropical storm was moving along the coast.

HURRICANE FLORENCE, JULY 14-17

Tropical storm Florence passed near Socorro Island at 1200 on July 14. At this time Socorro reported northerly winds 47 kt. with barometric pressure 1005 mb. and falling. On the basis of this report the first bulletin was issued. A westward movement at nominal speed was assumed even though ship reports were scarce for the following 30 hr. At 2100 on the 15th the WATERTOWN reported northerly winds 46 kt., barometer 1001.5 mb. and falling at 18.8°N., 120.0°W. Radar reports from this ship indicated a westward movement of the center at 5 kt. On the basis of these reports Florence was relocated. A subsequent report from the WATERTOWN at 0300 on the 16th gave winds northeast 70 kt., heavy seas and falling pressure and on the basis of this report Florence was placed in the hurricane category. Three hours later at 0600 the WATERTOWN reported wind southeast 65 kt. Reports were scarce for a time but a westward movement of 10 kt. was assumed. At 2200 on the 17th an Air Force reconnaissance plane determined the hurricane had dissipated in the area near 20°N., 128°W.

HURRICANE GLENDA, JULY 19-21

Hurricane Glenda was located on the basis of a report from the TYSON LYKES giving northwest winds 35 kt., barometer 996 mb. and falling rapidly at 14.0°N., 116.0°W. at 1200 on July 19. Glenda was assumed to be centered near 14.2°N., 116.0°W. at this time. The TYSON LYKES confirmed the hurricane about 2 hr. later at 1354 at which time winds were southerly 75 kt. with gusts to 90 kt. and very rough seas. Reports were scarce for the following 24 hr. but a westerly movement at nominal speed was assumed. At 1200 on the 20th Glenda was reduced to the tropical storm category and a continued westward movement at nominal speed was assumed. Further reduction in intensity to the tropical depression category followed at 1200 on the 21st near 14.0°N., 124.0°W. and bulletins were discontinued. No further evidence of Glenda was received.

TROPICAL STORM IRAH, SEPTEMBER 12-14

Tropical storm Irah was initially located at 18.7°N., 124.8°W. at 0000 on September 12. At this time the ship MERCURY at a location south of the center reported winds southwest 40 kt. and the ROLAND to the northeast of the center reported winds southeast 25 kt. Subsequent reports from the MERCURY gave winds of 45 kt. and seas of 13 ft. while the ROLAND had 30 kt.-winds and moderate to heavy seas. Irah moved along a generally westerly course to 21.3°N., 138.2°W. at 1800 on the 14th at which time winds had decreased and it was difficult to follow Irah further.

TROPICAL STORM JENNIFER, SEPTEMBER 12-15

The first advisory on tropical storm Jennifer was issued at noon on September 12 placing the cyclone at 16.5°N., 111.0°W. At this time Socorro Island to the northeast of the center had easterly winds of 45 kt. Subsequent reports from Socorro Island showed east and southeast winds of 40 kt. until 0000 on the 13th. Jennifer was extrapolated at 18.8°N., 121.7°W. at 0000 on the 15th but ship reports were sparse in the area and the lack of evidence made it necessary to abandon Jennifer. It has been suggested that Jennifer and Katherine were the same disturbance; however, it is difficult to establish this due to lack of data.

TROPICAL STORM KATHERINE, SEPTEMBER 17-18

Tropical storm Katherine was initially located near 28.5°N., 117.0°W. at 1800 on September 17. The ETNEFJELL reported south-southeast winds 45 kt., rough seas and barometer 1000 mb. in this area at 1600. At 1800 the BUCKEYE STATE confirmed the report of the ETNEFJELL. Kathernie moved rapidly north-northeast-

ward and inland about 100 mi. south of Ensenada, Mexico, at 0500 on the 18th. Winds of 50 kt. were reported by several vessels. Heavy rain associated with this storm caused some crop damage in southern California and adjacent states.

TROPICAL STORM LILLIAN, SEPTEMBER 24-28

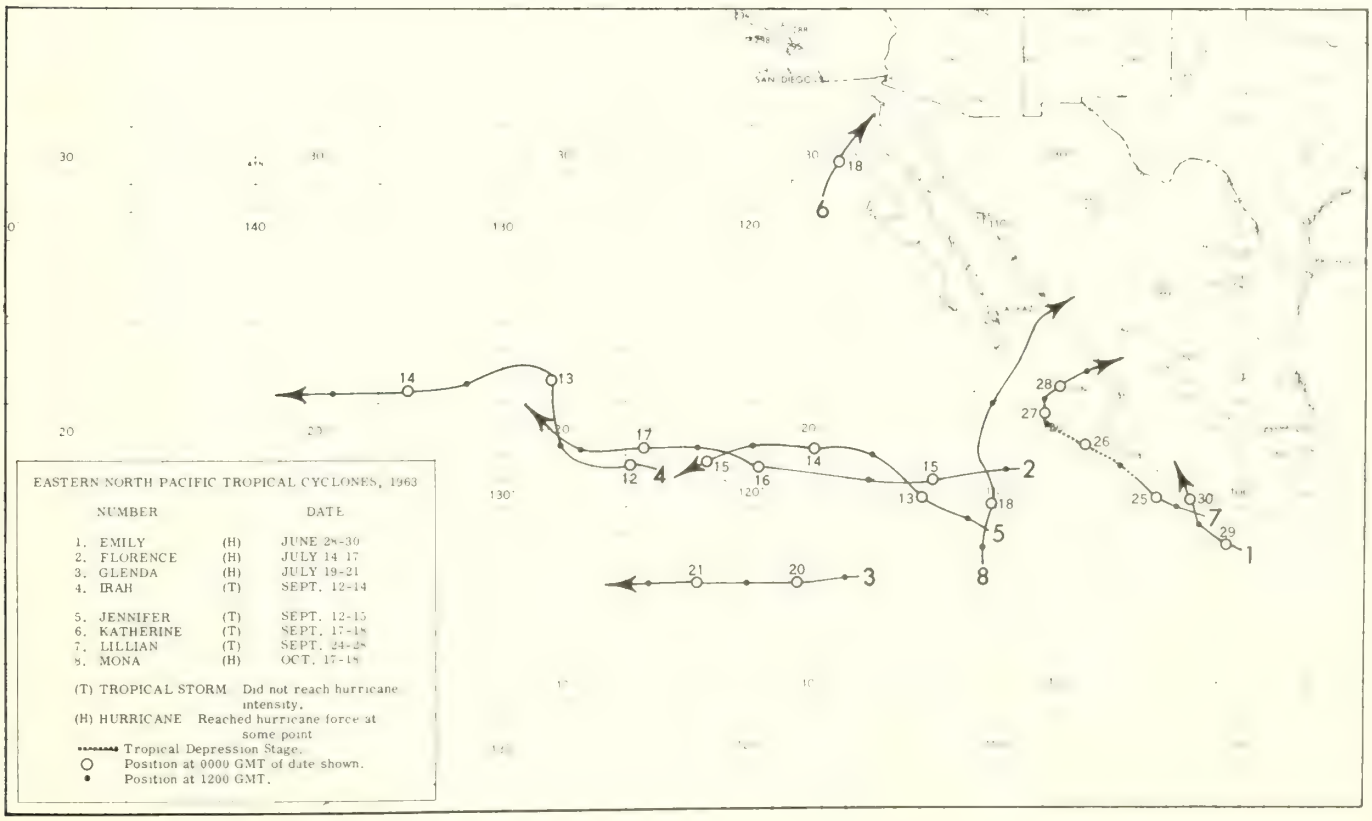
Tropical storm Lillian developed storm intensity at 17.2°N., 102.2°W. at 1200 on September 24. The MARINEGRA in this area reported winds east-southeast 45 to 55 kt. and high seas. The storm moved northwestward along the coast, apparently weakened near 18.0° N., 104.0°W. at 0600 on the 25th and was abandoned. However, regeneration became evident and Lillian was again regarded as a tropical storm near 20.2°N., 107.8°W. at 0900 on the 26th. Future movement was northeastward toward the coast and inland south of Mazatlan, Mexico, about 1500 on the 28th. The HERCULES reported winds of 60 kt. in the vicinity of the center.

HURRICANE MONA, OCTOBER 17-18

Hurricane Mona was initially located near 15.5°N., 110.4°W. at 1200 on October 17. A delayed report from the HAUSTRUM showed winds 100 kt., barometer 961 mb. at 0800 in the area and indicated the apparent movement of the hurricane to the northeast. Mona moved rapidly in a north-northeasterly direction and was presumed to be of hurricane strength until reaching 21.0°N., 110.0°W. at 1200 on the 18th at which time Mona was reduced to tropical storm intensity. Mona continued north-northeastward and moved inland near Culican, Mexico, about 2200.

TROPICAL CYCLONES OF THE EASTERN NORTH PACIFIC, 1963

Name	1963 Dates	Area Where First Reported	Coast Lines Crossed	Highest Wind Speed	Lowest Pressure (mb.)	Place of Dissipation
Emily	June 28-30	15.5°N., 100.0°W.	Mexican, 75 mi. south of Manzanillo	MARYMAR 291800, SE 75 kt.	995.6	Southeast of Manzanillo
Florence	July 14-17	Near Socorro Island	None	WATERTOWN 160300, NE 70 kt.	991.5	20°N., 128°W.
Glenda	July 19-21	14.0°N., 116.0°W.	None	TYSON LYKES 191345, S 75 kt., gusts to 90 kt.	997.0	14°N., 124°W.
Irah	Sept. 12-14	18.7°N., 124.8°W.	None	MERCURY 122100, SW 45 kt.	999.4	21°N., 138°W.
Jennifer	Sept. 12-15	16.5°N., 111.0°W.	None	Socorro Island 121800, E 45 kt.	1004.0	19°N., 122°W.
Katherine	Sept. 17-18	28.5°N., 117.0°W.	Mexican, 100 mi. south of Ensenada	PORTMAR and GULFSOLAR 180000, 50 kt.	996.0	Baja California south of Ensenada
Lillian	Sept. 24-28	17.2°N., 102.2°W.	Mexican, south of Mazatlan	HERCULES 261200, 262100, 60 kt.	990.6	Inland south of Mazatlan
Mona	Oct. 17-18	15.5°N., 110.4°W.	Mexican, near Culican	HAUSTRUM 170800, 100 kt.	961.4	Inland near Culican



TYPHOONS OF THE WESTERN NORTH PACIFIC, 1963

Based primarily on the "Annual Typhoon Report, 1963", prepared by the Joint Typhoon Warning Center, Guam, Mariana Islands

During 1963 a total of 663 warnings were issued by the Joint Typhoon Warning Center for 28 tropical cyclones in the western North Pacific from 180° to the Asiatic mainland, north of the equator. Of these 28 storms, 19 were typhoons, 6 were of tropical storm intensity, and 3 were tropical depressions. Five additional tropical cyclones were investigated by weather reconnaissance but did not develop significantly to substantiate the issuance of warnings.

The tracks of the typhoons are shown in figure 1, and relevant information is given in table 2. Of the 19 typhoons during 1963, 15 recurved into the westerlies and 4 dissipated over land prior to recurving. Fourteen of the recurving typhoons became extratropical cyclones. Tracks of the tropical depressions requiring warnings and paths of the tropical storms during the year are shown in figure 2. All tracks are for the periods of warnings.

The number of typhoons in the western North Pacific Ocean during 1963 may be considered a normal occurrence as the annual average from 1952-1962 was 18.9. For comparison, the following data are presented for the period 1959-1963:

TABLE 1

COMPARATIVE WESTERN NORTH PACIFIC TROPICAL CYCLONE DATA

	1959	1960	1961	1962	1963
Total number of warnings	583	776	738	815	663
Calendar days of warnings	137	157	165	154	146
Suspect cyclones	32	26	27	17	5
Tropical depressions	7	3	11	9	3
Tropical storms	9	8	11	6	6
Typhoons	17	19	20	24	19
Total tropical cyclones	65	56	69	56	33

The most intense typhoon of 1963 was typhoon Judy (September 30-October 4). Judy developed a maximum sustained wind of 150 kt. and had a minimum observed sea level pressure of 917 mb., a minimum 700 mb. height of 3,284 m. and a maximum 700-mb. temperature of 24°C. At one time, Judy had two closed rings of wall clouds with a third ring in partial existence. The same features were present with typhoon Karen of the 1962 season and that storm had a maximum sustained wind speed of 160 kt.

The extent of damage due to tropical cyclones in the western North Pacific in 1963 is unknown. However, partial data relative to the amount of property and crop damage, the number of persons killed, the number injured, etc., are given in the narrative summary below.

In the narrative summary and in the accompanying table and figures, typhoon intensity indicates wind speeds equal to or greater than 64 kt.; tropical storm intensity, wind speeds from 34 to 63 kt.; and tropical depression intensity, wind speeds less than 34 kt. All distances are in nautical miles and all times in Greenwich Mean Time.

OLIVE, APRIL 27-MAY 6

The initial surface vortex for typhoon Olive developed about 95 mi. southeast of Truk on April 21. For the next several days the vortex moved slowly west-northwestward toward Woleai Atoll. Early on the 27th the storm was near 10°N., 144°E. and winds were about 40 kt. At this time rapid development began. Olive reached typhoon strength later on the 27th and continued to intensify through the next day. At the beginning of the 29th the typhoon was about 60 mi. southwest of Guam, winds were 125 kt. (the maximum for the storm), and the direction of movement was toward the north. When northwest of Guam, Olive recurved to the northeast. She moved directly over Saipan, buffeting that island with winds of 110 kt. The storm continued moving in a generally northeasterly direction during the period May 1-6 and gradually decreased in intensity. Early on the 6th, Olive was located near 34°N., 175°E., winds were less then 60 kt. and the storm was becoming extratropical. Olive had typhoon winds for 8-1/2 days which is the longest period of such winds for any of the western Pacific typhoons of 1963. The storm did considerable damage in the Mariana Islands. Saipan, with 95 percent of the homes extensively damaged and 5 percent demolished, suffered the greatest loss. On Rota all agricultural crops were lost and many homes destroyed or damaged. Guam and Tinian were also severely hit. Power and communication lines were knocked down by the storm, many commercial and public buildings damaged, crops damaged or destroyed, and 1,000 persons left homeless. There were no fatalities and no serious injuries. Total estimated damage was $5 million. While Olive was in the vicinity of the Marianas on the 28th and 29th, the vessel INDIA BEAR was within the range of gale force winds, encountering 47-kt. winds on the 28th.

POLLY, MAY 31-JUNE 6

On May 25, a small vortex was detected about 90 mi. north-northwest of Woleai Atoll. By 0600 on the 31st the vortex had moved to near 16°N., 131°E. and winds were 30 kt. The tropical cyclone now showed signs of intensification so the first warning was issued. Polly moved north-northeastward and northeastward and gradually increased in intensity, reaching typhoon strength on the 2d. Early the next day winds were 70 kt., after which the velocities gradually decreased and the speed of movement of the storm increased. Early on the 5th, Polly was 120 mi. southeast of Tokyo and winds were about 65 kt. The storm was beginning to recurve to a more easterly direction, and was moving at about 29 kt. The Bonin Islands and portions of Japan were affected by typhoon Polly. In Japan there was little property loss due to winds, but torrential rains and the resulting floods and landslides caused considerable damage to farmland, crops, bridges, highways, communication facilities, homes, and other property. Over 36,000 homes were flooded and 807 landslides oc-

curred. Eleven houses and 270 bridges were washed away. Newspaper estimates placed the total damage at greater then $143 million. Damage to crops alone was over $138 million. At least 18 people were killed and 17 injured by the storm. Vessels reporting gale force wind within Polly's circulation include the GEN. D.I. SULTAN, HOEGH DYKE, JOHANNES MAERSK, KENNETH McKAY, and YOUNG AMERICA.

SHIRLEY, JUNE 13-20

Typhoon Shirley was in the formative stage from the 9th through the 12th. She began near 12°N., 140°E. and moved almost due west. On the 13th the storm recurved to a northwesterly direction and developed into a full-fledged typhoon. Wind speeds gradually increased until early on the 16th, when the maximum speed for Shirley (140 kt.) was attained. At this time the location was near 18°N., 130°E. During the period June 16 and 17 the typhoon moved northwestward through the Philippine Sea at a speed of 9 to 12 kt. and slowly decreased in intensity. At the beginning of the 19th Shirley was located in the East China Sea only 100 mi. east of the mainland of China. Winds at this time were 90 kt., the storm was recurving to the northeast, the intensity was decreasing, and the speed of movement was rapidly increasing. Later on the 19th Shirley moved inland over the southern tip of Korea, with winds of 65 kt. The typhoon continued to decrease as it moved across land, and early the next day when it moved into the Sea of Japan winds were only 50 kt. and the speed of movement was 30 kt. The last warning was issued at 1800 on the 20th. The storm caused extensive damage over portions of southern Korea. In the southern provinces of Kyongsang and Cholla 77 persons died; 14 were missing; 11,384 became homeless; and heavy crop and property damage occurred. In the Ryukyu Islands at least 21 houses were destroyed. Among the vessels reporting gales near Shirley were the KENAI PENINSULA over the open waters about 400 mi. southeast of Taiwan on the 17th, and the SCHUYLER O. BLAND off the east coast of Korea on the 20th. The TSUNESHIMA MARU and PRESIDENT VAN BUREN also encountered gale force winds during Shirley's extratropical stage over the northwestern Pacific on the 22d and 23d.

TRIX, JUNE 18-JULY 1

The vortex which was later to become typhoon Trix was generated in the area near 7°N., 165°E. on June 11. A week later (on June 18 and 19), when the storm was still classed as a tropical depression, three warnings were issued. During this period winds were 20 to 25 kt. No further warnings were released until Trix had moved to just east of the Philippines and showed signs of intensification. Early on the 26th the storm was 120 mi. east of the central Philippines, winds were 40 kt., and Trix was moving northwestward at 9 kt. The storm continued to move northwestward and to intensify, reaching typhoon strength early on the 27th. Trix decreased to tropical storm intensity later on the 27th and moved inland. Torrential rains and winds of 50 to 60 kt. accompanied Trix as the storm moved across northern Luzon. On the 28th it moved into the South China Sea and headed for the mainland of China. Winds increased to 70 kt. the next day. On the 30th the storm recurved northward and passed about 100 mi. to the east of Hong Kong. Trix had winds of 55 kt. when it moved inland over China in the vicinity of Swatow. In northern Luzon damage from Trix was heavy. Streets were flooded in Manila and Pasay, bridges were washed away, communication lines were blown down, and crops and public utilities damaged. Damage to public and private property was estimated at more than $250,000, and at least 3 persons were killed. The PVT. JOSEPH F. MERRELL was within range of gale force winds in Philippine waters on the 28th, and the PRESIDENT HOOVER reported 50-kt. winds in the Taiwan Straits on the 30th.

WENDY, JULY 9-18

Typhoon Wendy began forming in the vicinity of the Mariana Islands on the 8th. On the following day, when the first warning was issued, the tropical depression was about 110 mi. east-northeast of Guam and winds were 30 kt. The storm increased rapidly in intensity, reaching typhoon strength early on the 10th. Wendy skirted to the south of Guam, bringing strong winds to the southern tip of that island. The storm continued to increase in strength and by late on the 12th winds were 135 kt. (the maximum for Wendy). After bypassing Guam the typhoon moved in a generally northwest direction during the rest of its existence. Wendy passed over Taiwan on the 16th, buffeting the northern portion of that island with winds of about 70 kt. Later that day, when the storm moved inland over the mainland of China, surface winds had decreased to 50 kt. Damage from Wendy was relatively light. Taiwan and Guam had minor property damage from strong winds, and some flooding was reported over extreme northern Luzon. Five persons on Taiwan were injured. Among vessels reporting winds in the 40 to 50-kt. range over the waters near Taiwan from the 14th through the 17th were the FLYING HAWK, PRESIDENT CLEVELAND, and TORRY CANYON.

AGNES, JULY 17-22

Typhoon Agnes moved in a west-northwesterly direction during her entire existence. The storm began on the 15th as a surface vortex about 120 mi. northeast of Ulithi. By the 17th the vortex had moved to 13°N., 135°E. and surface winds were 25 kt. The tropical cyclone increased gradually in intensity from the 17th through the 19th. During this period the storm track was toward the northern Philippines. On the 20th, when Agnes moved across the northern tip of Luzon, winds were 75 to 85 kt. On the 21st and 22d the storm moved through the South China Sea toward the mainland of China, and decreased in intensity. Winds were only 45 kt. when the storm moved inland over southern Kwangtung on July 22. Typhoon Agnes caused flooding in many towns of northern Luzon. Minor damage was reported in Hong Kong.

BESS, JULY 27-AUGUST 11

Typhoon Bess was considered to have the most erratic movement of any of the typhoons of 1963. The initial vortex has its beginning about 120 mi. northeast of Truk on July 24. On the 27th the tropical cyclone was located 100 mi. southwest of Guam. Movement of the storm was

northward on the 27th and 28th. During the next 4 days the storm performed half of a counterclockwise loop and then moved generally north-northwestward during the remainder of its existence. Bess reached typhoon strength on August 3 and continued to deepen through the 4th, when the maximum winds (130 kt.) for the typhoon occurred. The storm moved inland over southern Japan on the 9th, with surface winds of about 75 kt. Bess weakened rapidly as it moved over land and when the storm moved into the Sea of Japan, winds were only about 45 kt. On the 10th the storm recurved northeastward and continued to weaken. Bess was a slow-moving typhoon. During the entire period for which tropical warnings were issued (a record 61 warnings in 15-1/4 days) the speed of movement was less than 10 kt. Bess did considerable damage in Japan. In the Kyushu, Shikoku, and Chugoku areas nearly 12,000 homes were flooded, 97 houses were destroyed or badly damaged, and 6,500 persons were left homeless. Eight persons died, several were missing, and 21 ships sank as a result of the storm. Damage over Korea and the Ryukyu Islands was relatively minor. The BAYOU STATE, BONNEVILLE, C. E. DANT, FLYING DRAGON, and PIONEER MYTH were among vessels encountering gale force winds along the tropical portion of the track of typhoon Bess from the 3d through the 10th.

CARMEN, AUGUST 7-17

Typhoon Carmen was in the formative stage in the Caroline Islands during August 2 to 6. When the first warning was issued on the 7th the storm was located about 125 mi. northeast of Woleai Atoll. Surface winds increased from 20 kt. on the 7th to 125 kt. (the maximum for Carmen) on the 12th. At the time of the strongest winds, the storm was located less then 50 mi. east of the central Philippines and was moving northwestward (Carmen moved westerly and northwesterly during its entire existence). The typhoon advanced inland over northern Luzon on the 13th with winds of 100 kt. Carmen moved into the South China Sea on the 14th and headed for Hainan. Winds were 65 to 80 kt. as the storm moved across the northeastern tip of that island on the 16th. When Carmen reached the Asiatic mainland on the 17th surface winds had decreased to 45 kt. Strong winds, floods, and landslides wreaked considerable damage to crops and private and public property in the Philippine Islands. Over 1,000 houses were destroyed and communication lines, roads, and bridges were damaged. One person died and thousands were left homeless as a result of the storm. The PIONEER MYTH was within the region of gale force winds around Carmen at noon on the 15th near the China coast.

DELLA, AUGUST 25-30

Typhoon Della's counterpart may be found in Vera, a typhoon of August 25-28, 1962. Both storms were approximately the same size, both formed east-southeast of Okinawa in the same area, and the first warning on each was issued on the same day of the year (August 25). After forming, Della moved generally northward toward Japan, recurving northeastward on the 27th. Although the typhoon did not move inland, the eye of the storm was only about 75 mi. southeast of southern Japan when the maximum winds for Della (100 kt.) occurred. Thus, much of southern Japan was buffeted by strong winds and torrential rains. Over 15,000 homes were flooded, 2 persons died, and considerable property was damaged. Minor landslides also were reported. According to a newspaper account of the storm, Tokyo received over 6 in. of rainfall in 1 day from the storm. Among vessels reporting gale force winds over the waters near Japan were the GEN. E. D. PATRICK, NORTHWESTERN VICTORY, PRESIDENT LINCOLN, TSUNESHIMA MARU, and YOUNG AMERICA.

ELAINE, AUGUST 25-28

Typhoon Elaine was one of the smallest typhoons of the 1963 season. It began forming on the 18th at 10°N., 175°E. A week later, when the first warning was issued, the storm was located at 24°N., 155°E. During the next 2 days surface winds increased considerably, becoming 100 kt. on the 27th. The direction of movement of Elaine was northwestward until the 26th, when it recurved to the northeast. After recurving, the speed of movement of the typhoon gradually increased. At the time of the last warning (0600 on the 28th), surface winds had decreased to 65 kt., the storm was moving northeastward at 27 kt., and the location was near 39°N., 165°E. The maximum radius of surface circulation for typhoon Elaine was only 250 mi. Marcus Island was the only land area affected by the storm and little or no damage occurred there. Gale reports within the circulation of Elaine were received from the DE SOTO, EMPIRE STAR, ISLAND SKIPPER, MARIT MAERSK, MOBILE ENERGY, TSUNESHIMA MARU, and YOUNG AMERICA.

FAYE, SEPTEMBER 1-8

The surface vortex for typhoon Faye formed 100 mi. north-northeast of Truk on August 27, but it was not until 5 days later (on September 1) that the developing storm required the issuance of a warning. At that time the tropical depression was located at 13°N., 138°E. and winds were 30 kt. The storm increased rapidly to typhoon strength on September 2. Surface winds continued to increase as Faye moved northwestward on September 3 and 4 and westward on the 5th. When the typhoon passed through the Babuyan Islands wind speeds were about 100 kt. At the beginning of the 6th Faye was located about 150 mi. southeast of Hong Kong and winds were 110 kt. (the maximum for this typhoon). Winds gradually decreased as the storm moved westward on September 6 and 7 and southwestward along the northern coast of Hainan Island on the 8th. At the time the last warning was issued (1200 on the 8th), Faye was located at the coastline of west-central Hainan and surface winds were 40 kt. Floods as a result of the storm caused damage to several provinces of the Philippines. Three people were killed, 51 injured, and many were left homeless in Hong Kong. The PRESIDENT ROOSEVELT and PHILIPPINE MAIL reported 40 and 60-kt. winds on the 5th and 7th, respectively, within the circulation of typhoon Faye.

GLORIA, SEPTEMBER 5-14

This storm, which began near 18°N., 150°E., moved westward and west-southwestward during the first few days of its existence. At 1200 on the 5th the storm was

near 17°N., 140°E. and winds were 30 kt. Late on the 5th the storm recurved to the northwest and intensified to tropical storm strength. During the period September 6 to 8, Gloria continued to move northwestward and deepen. Typhoon winds began on the 6th and by early on the 9th wind speeds reached 135 kt. (maximum for Gloria). Surface winds decreased to about 100 kt. as Gloria passed a few miles to the north of Taiwan and headed for the mainland of China. The storm completed a counterclockwise loop on the coast of China and moved northeastward into the East China Sea where it continued to weaken. Gloria was one of the two typhoons of 1963 to perform a loop. Extensive damage resulted from this typhoon. At least 13 persons died and 16 were injured in northern and central Luzon as heavy rains caused landslides, flooded homes, and damaged crops and public utilities. Taiwan had severe property damage from strong winds and severe floods. About 200 persons died there and thousands were left homeless. One person died, 3 were injured, and 114 homes were destroyed in the Ryukyu Islands. The JAVA MAIL, PIONEER MART, PRESIDENT ROOSEVELT, ROBIN KIRK, and SGT. JACK J. PENDLETON recorded gale force winds during the period from the 8th through the 11th while Gloria was near Taiwan.

JUDY, SEPTEMBER 30-OCTOBER 4

The surface vortex which was later to become typhoon Judy began on September 27 at 10°N., 154°E. By the 30th, when the first warning was issued, the vortex had moved northwestward and was located 150 mi. east of Saipan. The storm intensified rapidly and was upgraded to a typhoon 12 hr. after issuance of the first warning. Judy continued to move northwestward and to deepen until early on the 2d. At this time the typhoon was located near 23°N., 143°E. and winds were 150 kt. Later on the 2d Judy recurved to the north, and passed about 50 mi. to the east of Iwo Jima. The eye was about 25 mi. east of Chichi Jima at 0000 on the 3d and 125 to 150-kt. winds buffeted that island for several hours. Judy began to weaken after passing Chichi Jima, the forward speed increased and the direction of movement became north-northeasterly. When the last warning was issued at 1200 on the 4th, Judy was becoming extratropical, surface winds were 65 kt. and the storm was moving northeastward at 18 kt. This typhoon was noteworthy in that no other 1963 western Pacific typhoon had winds as strong as those observed in Judy. Judy also had the lowest sea level pressure (917 mb.) of any of the 1963 typhoons. Chichi Jima suffered extensive damage from Judy but no deaths were reported. The GEN. D. I. SULTAN, MALLORY LYKES, KENNETH McKAY, and YAKA reported gale force winds near Judy from the 3d through the 5th.

KIT, OCTOBER 5-11

The vortex which later became the largest typhoon of 1963 began developing about 200 mi. southwest of Guam on the 3d. Early on the 5th the center was located at 16°N., 139°E. and winds were 35 kt. The storm moved slowly northward on the 5th and gradually increased in intensity. Kit moved toward the northwest at 7 to 8 kt. and reached typhoon intensity on the 6th. For the next 2 days the typhoon continued to move in a northwesterly direction and to deepen. Maximum winds for Kit (135 kt.) were reached on the 9th. Later that day the storm recurved suddenly toward the northeast, the forward motion began to gradually increase, and the typhoon started to weaken. At 1800 on the 11th, when the last warning was issued, Kit was located at 33°N., 146°E., winds had decreased to 70 kt., and the storm was moving northeastward at 35 kt. The maximum radius of the surface cyclonic circulation for Kit was 700 mi. The Bonin Islands and the Ryukyu Islands were the only land areas affected by this typhoon. The amount of damage, if any, is unknown. The GEN. HUGH J. GAFFEY, PRESIDENT TYLER, and the SIRA reported gale force winds, and the IDAHO, winds of typhoon intensity (65 kt.), within the circulation of Kit south and east of the Japanese islands from the 9th to the 12th.

LOLA, OCTOBER 8-19

Typhoon Lola was first located near 7°N., 167°E. on the 4th. By 0600 on the 8th the vortex had moved to a location about 85 mi. northeast of Truk, and winds were 25 kt. The tropical depression changed little in intensity as it moved northwestward during the next 2 days and passed over or near Guam. West of Guam the storm made a cyclonic loop while intensifying to 50 kt. Lola then traveled on a generally northward track until the 14th when it veered to the west-northwest. Lola reached typhoon strength on the 14th and continued to deepen until the 17th. At this time surface winds had reached 130 kt. (the maximum for Lola) and the storm recurved sharply to the north-northeast. After recurving, Lola decreased gradually in intensity. The last warning was issued on the 19th. No reports of damage were received for this typhoon. Gale reports were received from several vessels along Lola's tropical track from the 15th through the 20th. Among these vessels were the NAESS CLIPPER, PACIFIC ISLANDER, PVT. JOSEPH F. MERRELL, QUEENSVILLE, SCANDIA CLIPPER, SGT. ANDREW MILLER, TYSON LYKES, UNION FAITH, and YOUNG AMERICA.

MAMIE, OCTOBER 15-18

The initial surface vortex for typhoon Mamie began at 5°N., 169°E. on October 10. By the 15th the storm had moved to 20°N., 158°E. and winds were about 50 kt. Mamie developed rapidly and was upgraded to a typhoon 6 hr. after issuance of the first warning. During the next 2 days it moved northwestward at 11 to 13 kt. and continued to intensify. Maximum winds for Mamie (100 kt.) occurred at 0600 on the 17th, after which the storm began to weaken, to move more rapidly, and to recurve to the north. Typhoon Mamie was over the open ocean at all times. Marcus Island was the only land area affected by the storm and no appreciable damage occurred there.

ORA, OCTOBER 23-29

Typhoon Ora started developing near 10°N., 153°E. on the 20th. During the period October 20 to 23 the vortex moved northeastward and northward. On the 23d the tropical depression was located near 18°N., 160°E. and winds were 25 kt. During the next 2 days the storm changed little in intensity as it moved on a generally northwesterly course. Rapid development to typhoon strength occurred

on the 26th and the intensification continued on the 27th when the maximum winds for Ora (80 kt.) occurred. On the 28th the storm recurved sharply toward the north-northeast and began to decrease in intensity. No further warnings were released after 1200 on the 29th. The storm track was over the open ocean for the entire life of this typhoon. Little or no damage occurred on Marcus Island, the only land area affected by Ora. The BARFONN, GUAM BEAR, and PACHEMIST recorded gale force winds near Ora from the 25th through the 29th.

PHYLLIS, DECEMBER 12-13

Typhoon Phyllis had its beginning just off the northwest coast of Mindanao on December 8. This is the only tropical cyclone of record (1884-1963) which developed and reached typhoon intensity in the South China Sea during the month of December. During the period December 8 to 11 the vortex moved north-northwestward, and when the first warning was issued on the 12th the tropical cyclone was located 60 mi. northwest of Mindoro. Later on the 12th Phyllis increased to typhoon strength. Maximum winds for this typhoon (75 kt.) were reached on the 13th. The storm then skirted the northern portion of Luzon, moved northeastward into the Philippine Sea and decreased rapidly in intensity. Considering the size of the circulation area, Phyllis was the smallest typhoon of 1963. It also had the shortest period of typhoon force winds (1-1/4 days). Typhoon Phyllis caused minor damage to portions of northern Luzon.

SUSAN, DECEMBER 18-28

Typhoon Susan began development south of 5°N. and was the only typhoon of 1963 to begin that far south. The initial vortex formed at 4°N., 172°E. on the 18th. Intensification took place as the vortex moved through the Marshall Islands and by the 21st the storm had reached typhoon strength. At this time Susan was located near 8°N., 165°E. and was moving west-northwestward. The typhoon continued to move in the same direction and to intensify during the period December 21 to 25. When Susan moved through the Mariana Islands between Saipan and Guam on the 24th, maximum surface winds in the storm were 115 to 125 kt. On the 26th winds reached 135 kt. (highest for Susan). It was on this day that the storm recurved sharply to the northeast. Susan began weakening on the 27th and the last warning was issued at 1800 on the 28th. Susan traveled 3,200 mi. during the period that tropical warnings were issued for the storm. The Mariana Islands and Marcus Island reported damage from the typhoon. Many homes on Saipan, Rota, and Tinian were damaged or destroyed and the crops on those islands suffered heavy damage. Two persons on Saipan were injured.

Table 2

TYPHOONS OF THE WESTERN NORTH PACIFIC, 1963

Name	Date of Initial Surface Vortex (GMT)	Dates During Period of Typhoon Winds (GMT)	Calendar Days of Typhoon Intensity	Values and Dates (GMT) of: Highest Surface Wind Speed (kt.)	Lowest Surface Pressure (mb.)	Maximum Radius of Surface Circulation (mi.)	Land Areas Affected
OLIVE	4/21	4/27-5/05	8-1/2	125	922/28	450	Marcus Island and Mariana Islands
POLLY	5/28	6/02-04	3-1/4	70	980/03	450	Bonin Islands and Japan
SHIRLEY	6/09	6/13-19	6-1/2	140	935/15	300	Japan, Korea, Ryukyu Islands and Taiwan
TRIX	6/11	6 27-30	2	70	980/27	250	Asiatic Mainland and Philippines
WENDY	7/08	7/10-16	6-1/4	135	928/13	350	Asiatic Mainland, Mariana Islands and Taiwan
AGNES	7/15	7/19-21	3	85	992/21	250	Asiatic Mainland, Babuyan Island, Hainan Island and Philippines
BESS	7 24	8 03-09	6-1/2	130	930/04	350	Japan, Korea and Ryukyu Islands
CARMEN	8/02	8/10-16	5-3/4	125	936/12	250	Asiatic Mainland, Caroline Islands, Hainan Island, Palau and Vietnam
DELLA	8 23	8/25-29	4	100	970/25	250	Bonin Islands, Japan, and Ryukyu Islands
ELAINE	8 18	8 26-28	2-1/4	100	967 27	250	Marcus Island
FAYE	8 27	9/02-07	5-1/4	110	957 06	450	Asiatic Mainland, Babuyan Islands, Batan Island, Hainan Island, Philippines, Taiwan, and Vietnam
GLORIA	9/02	9/06-11	5-3/4	135	921 10	550	Asiatic Mainland, Philippines, Ryukyu Islands, and Taiwan
JUDY	9/27	9/30-10/04	4-1/4	150	917 03	400	Bonin Islands and Mariana Islands
KIT	10 03	11 06-11	5-1/4	135	929/10	700	Bonin Islands and Ryukyu Islands
LOLA	10 04	10/14-19	5-1/4	130	945/17	300	Bonin Islands and Mariana Islands
MAMIE	10 10	10/15-18	3	100	971/17	500	Marcus Island
ORA	10 20	10 26-28	2-1/4	80	984/28	300	Marcus Island
PHYLLIS	12 08	12 12-13	1-1 4	75	986/12	210	Babuyan Islands, and Philippines
SUSAN	12 18	12 20-28	8	135	932 26	500	Marcus Island, Mariana Islands, and Marshall Islands

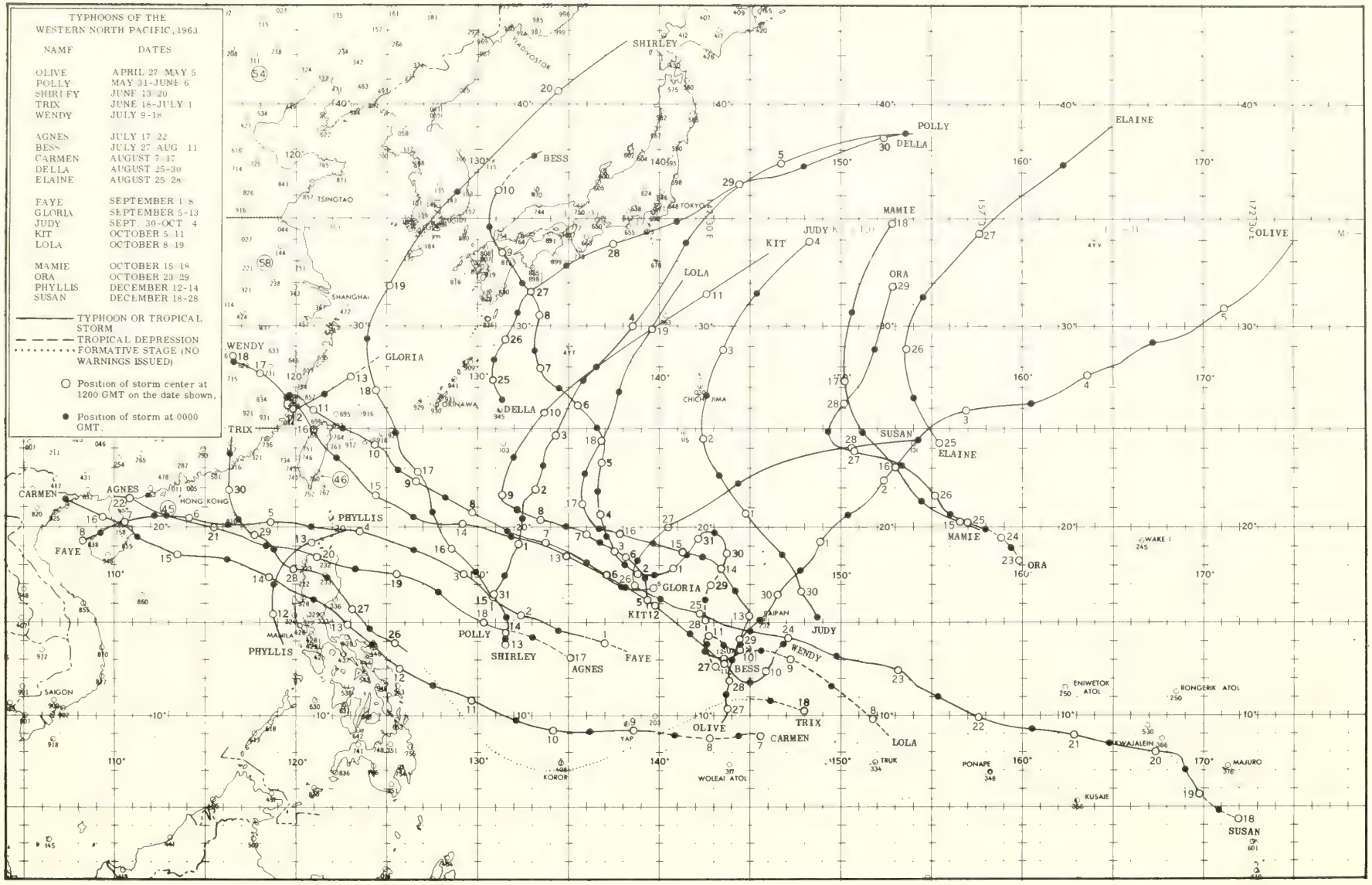

TYPHOONS OF THE
WESTERN NORTH PACIFIC, 1963
NAME DATES
OLIVE APRIL 27-MAY 5
POLLY MAY 31-JUNE 6
SHIRLEY JUNE 13-20
TRIX JUNE 18-JULY 1
WENDY JULY 9-18
AGNES JULY 17-22
BESS JULY 27-AUG 11
CARMEN AUGUST 7-17
DELLA AUGUST 25-30
ELAINE AUGUST 25-28
FAYE SEPTEMBER 1-8
GLORIA SEPTEMBER 5-13
JUDY SEPT. 30-OCT 4
KIT OCTOBER 5-11
LOLA OCTOBER 8-19
MAMIE OCTOBER 15-18
ORA OCTOBER 23-29
PHYLLIS DECEMBER 12-14
SUSAN DECEMBER 18-28
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE (NO WARNINGS ISSUED)
Position of storm center at 1200 GMT on the date shown.
Position of storm at 0000 GMT.
SHIRLEY
POLLY
DELLA
ELAINE
BESS
MAMIE
KIT
JUDY
LOLA
ORA
OLIVE
WENDY
GLORIA
SUSAN
TRIX
CARMEN
AGNES
FAYE
PHYLLIS
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
CHICHI JIMA
TOKYO
HONG KONG
MANILA
SAIGON
SAIPAN
WAKE I
YAP
KOROR
WOLEAI ATOLL
TRUK
PONAPE
ENIWETOK ATOLL
RONGERIK ATOLL
KWAJALEIN
MAJURO
KUSAIE

Fig. 1

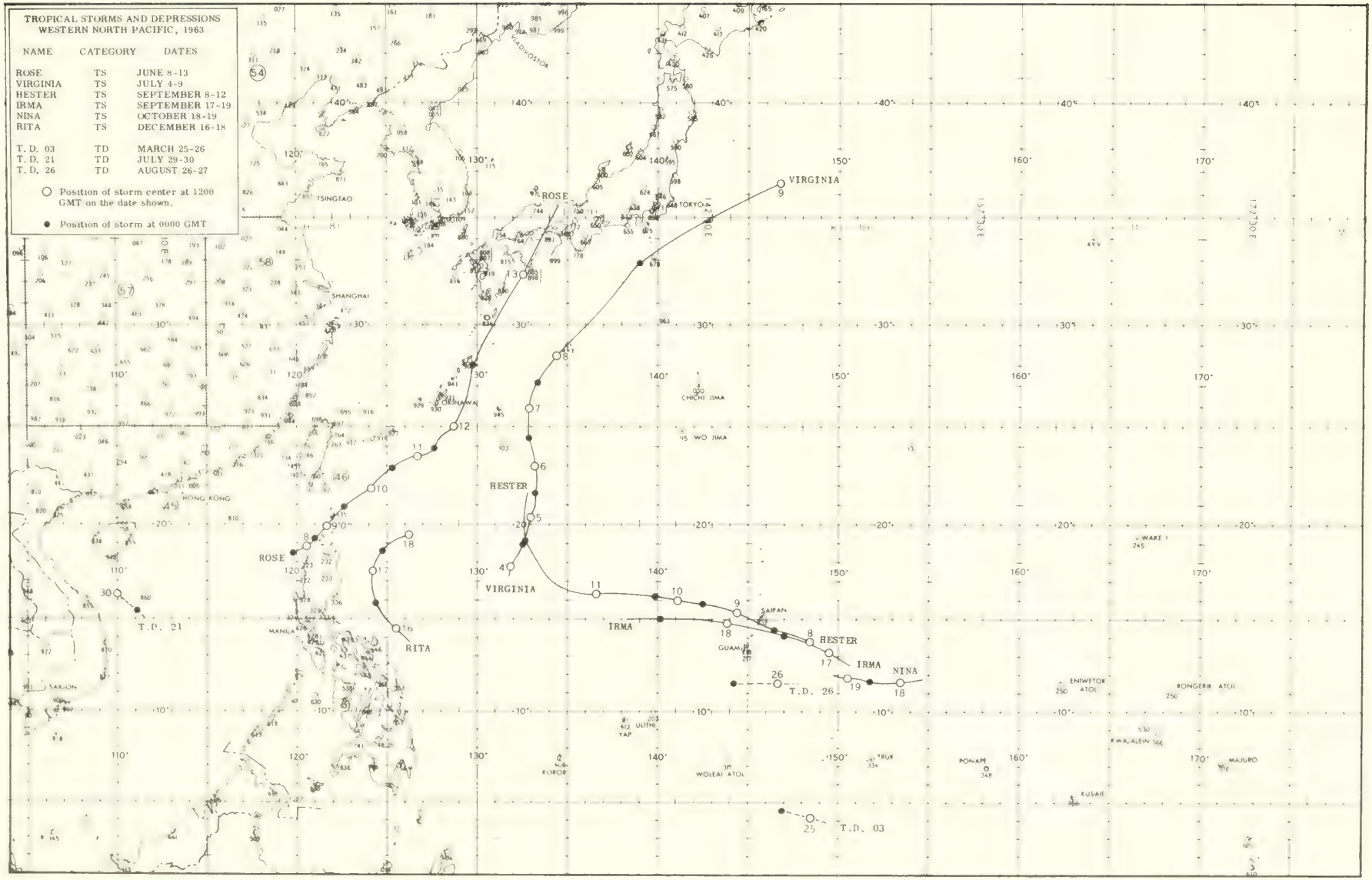

TROPICAL STORMS AND DEPRESSIONS
WESTERN NORTH PACIFIC, 1963
NAME CATEGORY DATES
ROSE TS JUNE 8-13
VIRGINIA TS JULY 4-9
HESTER TS SEPTEMBER 8-12
IRMA TS SEPTEMBER 17-19
NINA TS OCTOBER 18-19
RITA TS DECEMBER 16-18
T. D. 03 TD MARCH 25-26
T. D. 21 TD JULY 29-30
T. D. 26 TD AUGUST 26-27
Position of storm center at 1200 GMT on the date shown.
Position of storm at 0000 GMT
ROSE
VIRGINIA
HESTER
IRMA
NINA
RITA
T.D. 21
T.D. 26
T.D. 03
VLADIVOSTOK
TSINGTAO
SHANGHAI
OKINAWA
HONG KONG
MANILA
SAIPAN
GUAM
TOKYO
CHICHI JIMA
IWO JIMA
WAKE I
KOROR
WOLEAI ATOL
ULITHI
YAP
TRUK
PONAPE
KUSAIE
KWAJALEIN
MAJURO
ENIWETOK ATOL
RONGERIK ATOL

Fig. 2

GENERAL SUMMARY OF FLOOD LOSSES FOR 1962

Monetary losses from floods in the United States during 1962, estimated at $75,236,600 was 49 percent of what it was in 1961. This is the lowest damages sustained from floods since 1956 when the losses totalled $64,688,000. In comparison with the National average of $350,000,000, based on the 10-year period 1949 to 1958 (adjusted to the 1958 price index) the flood loss in 1962 was about 21 percent.

The total loss of life in 1962 was 19, compared to 52 in 1961, and 25 in 1959. This was the lowest loss of lives lost from floods since 1932 when 11 lives were lost. In comparison with the National average of 81 lives during the last 38 years (1925-1962) it was less than 25 percent.

The savings resulting from the flood forecasting and warning service were, as compiled from fragmentary information, approximately $6,500,000. This figure represents statistics collected from less than 15 percent of the river systems where flooding was reported during the year.

The most damaging floods during 1962 occurred during the latter part of February and the first part of March. The flooding was especially severe in Kentucky and in southeastern Idaho. Flooding along the Red River in Kentucky was of record proportions. A few cities were isolated or inundated by the rising waters. Severe flash flooding occurred in the headwaters of the Licking River and on creeks flowing into the North Fork of the Kentucky River. The highest stages of record occurred along the upper Green River in Kentucky. Maximum floods of record occurred in southeastern Idaho in the Portneuf, Blackfoot, and Henrys Fork Basins. Damage in this area was heavy and was estimated at over $7.5 million. Many families were driven from their homes.

ESTIMATED FLOOD LOSSES FOR 1962

PROPERTY LOSSES IN THOUSANDS OF DOLLARS

River and drainage	Urban Property					Rural Property					Other Property					
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities	Miscellaneous	Unclassified	Total Loss	Lives Lost
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
HUDSON BAY DRAINAGE																
Red River of the North	0.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.5	...
Total	0.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.5	...
ATLANTIC SLOPE DRAINAGE																
Neshaminy River	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.0	...
Susquehanna River	1 2	.....	0.8	.....	.....	2.0	.....	.....	.....	.....	0.9	.....	.....	.....	4.9	...
Pee Dee River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.5	4.5	...
Congaree River	.....	.....	.....	.....	.....	8.0	.....	0.3	1.2	.....	3.0	.....	.....	25.2	37.7	...
Santee River	.....	.....	.....	.....	.....	15.0	.....	1.0	.....	.....	1.0	.....	.....	38.0	55.0	...
Total	4 2	.....	0.8	.....	.....	25.0	.....	1.3	1.2	.....	4.9	.....	.....	67.7	105.1	...
EAST GULF OF MEXICO DRAINAGE																
Phillipi Creek and Myakka River in Sarasota County Florida	400.0	250.0	5.0	5.0	400.0	210.0	.....	5.0	18.2	71.8	50.0	16.0	50.0	.....	1 481.0	...
Pea River	.....	.....	.....	.....	.....	F 1.1	.....	.....	.....	.....	.....	.....	.....	.....	D 1.1	...
Choctawhatchee River	A 1.0	.....	.....	.....	.....	F 45.8	.....	.....	.....	.....	40.4	.....	.....	.....	D 87.2	...
Conasauqua River	.....	.....	.....	.....	.....	F 72.1	.....	.....	.....	.....	8.8	.....	.....	.....	D 80.9	...
Coosawatee River	.....	.....	.....	.....	.....	F 36.5	.....	.....	.....	.....	1.7	.....	.....	.....	D 38.2	...
Oostanaula River	.....	.....	.....	.....	.....	F 261.9	.....	.....	.....	.....	49.2	.....	.....	.....	D 311.1	...
Etowah River	A 1.2	.....	.....	.....	.....	F 44.5	.....	.....	.....	.....	6.5	.....	.....	.....	D 52.2	...
Tallapoosa River	.....	.....	.....	.....	.....	F 171.0	.....	.....	.....	.....	10.5	.....	.....	.....	D 181.5	...
Cahaba River	.....	.....	.....	.....	.....	F 64.1	.....	.....	.....	.....	6 2	.....	.....	.....	D 70.3	...
Coosa River	.....	.....	.....	.....	.....	F 491.1	.....	.....	.....	.....	16.3	.....	.....	.....	D 507.4	...
Alabama River	.....	.....	.....	.....	.....	F 282.5	.....	.....	.....	.....	32.5	.....	.....	.....	D 315.0	...
Black Warrior River	.....	.....	.....	.....	.....	F 319.0	.....	.....	.....	.....	8.0	.....	.....	.....	D 327.0	...
Tombigbee River	A 104.0	.....	.....	.....	.....	F 1,352.0	.....	.....	.....	.....	.....	102.0	.....	.....	D 1,558.0	...
Leaf River	A 13.0	.....	.....	.....	.....	F 183.0	.....	.....	.....	.....	25.0	.....	.....	.....	D 221.0	...
Pascagoula River	A 17.0	.....	.....	.....	.....	F 6.0	.....	.....	.....	.....	.....	.....	.....	.....	D 23.0	...
Pearl River	A 26.0	.....	.....	.....	.....	F 396.0	.....	.....	.....	.....	91.0	.....	.....	.....	D 513.0	...
Total	562.2	250.0	5.0	5.0	400.0	3,936.6	.....	5.0	18.2	71.8	346.1	118.0	50.0	.....	5,767.9	...
MISSISSIPPI SYSTEM																
Upper Mississippi Basin																
St. Croix River	2.0	.....	0.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.3	...
Minnesota River	.....	.....	2.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	37.5	.....	40.0	...
Zumbro River	305.0	5.0	.....	5.0	238.0	.....	.....	.....	5.0	1.0	529.2	10.0	.....	.....	1,098.2	1
Whitewater River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150.0	.....	.....	.....	150.0	...
Turkey River	11.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	53.7	.....	.....	.....	D 65.0	...
Maquoketa River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21.3	.....	.....	.....	D 21.3	...
Wapsipinicon River	18.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	56.0	.....	.....	.....	D 74.4	...
Pecatonica River	15.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.6	.....	.....	.....	D 113.7	...
Rock River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57.6	.....	.....	.....	D 57.6	...
Cedar River and Tributaries	A 1,535.6	.....	.....	.....	.....	F 524.5	.....	.....	.....	.....	.....	.....	.....	.....	D 2,060.1	...
Iowa River and Tributaries	A 33.2	.....	.....	.....	.....	F 328.5	.....	.....	.....	.....	.....	.....	.....	.....	D 361.7	...
Skunk River and Tributaries	.....	.....	.....	.....	.....	F 185.2	.....	.....	.....	.....	.....	.....	.....	.....	D 185.2	...
Des Moines River and Tributaries	A 81.8	.....	.....	.....	.....	F 379.5	.....	.....	.....	.....	.....	.....	.....	.....	D 461.3	...
Sangamon River	.....	.....	.....	.....	.....	65.0	5.0	.....	100.0	.....	10.0	.....	.....	.....	180.0	..
Illinois River	65.0	8.2	11.5	2.0	25.5	8.5	.....	.....	10.0	.....	1.0	1.5	9.0	.....	142.2	..
Big Muddy River	.....	.....	.....	.....	.....	10.0	.....	.....	15.0	.....	5.0	2.0	.....	.....	32.0	...
Mississippi Main Stem	25.0	.....	2.5	.....	30.0	131.0	2.0	.....	10.0	0.5	45.0	.....	50.0	.....	296.0	...
Total	2,092.4	13.2	16.8	7.0	293.5	1,632.2	7.0	.....	140.0	1.5	1,027.4	13.5	96.5	.....	5,341.0	1
Missouri Basin																
Beaverhead River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.6	1.6	...
Baker Creek and West Gallatin River	.....	.....	.....	.....	.....	.....	.....	.....	2.5	.....	.....	.....	.....	.....	2.5	...
Hawk Creek near Musselshell, Montana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20.0	20.0	...
Yellowstone River and Tributaries	12.0	8.0	11.0	.....	3.0	.....	8.0	.....	25.0	10.0	40.0	3.0	3.0	.....	123.0	..
Rapid Creek and Tributaries Vicinity of Rapid City, S.Dak.	170.0	100.0	50.0	250.0	75.0	.....	.....	.....	.....	.....	350.0	15.0	40.0	.....	1,050.0	...
James River	10.0	15.0	.....	.....	20.0	560.0	80.0	.....	180.0	.....	300.0	.....	40.0	.....	1,205.0	...
Vermillion River and Clay Creek	12.0	18.0	.....	.....	10.0	.....	45.0	.....	270.0	.....	400.0	.....	20.0	.....	775.0	...
Big Sioux and Rock Rivers	230.0	60.0	45.0	30.0	90.0	250.0	225.0	.....	300.0	40.0	1,350.0	20.0	235.0	.....	2,875.0	1
Floyd River and Tributaries	10.0	4.0	.....	.....	30.0	.....	30.0	.....	45.0	.....	250.0	.....	260.0	.....	629.0	...
Odebolt and Badger Creeks Ida County, Ia.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45.0	45.0	...
Elkhorn River and Tributaries	400.0	350.0	290.0	85.0	75.0	300.0	75.0	15.0	100.0	50.0	425.0	40.0	170.0	.....	2,375.0	1
Platte River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5.0	5.0	...
Indian Creek	.....	.....	.....	.....	.....	2.0	.....	1.0	10.0	10.0	.....	.....	.....	.....	23.0	...
Sappa and Beaver Creeks	.....	1.0	.....	5.0	10.0	50.0	.....	.....	5.0	.....	10.0	.....	83.0	.....	164.0	...
Smoky Hill River and Tributaries	.....	.....	.....	.....	40.0	10.0	35.0	20.0	.....	.....	109.0	.....	.....	.....	214.0	...
Little Blue River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.5	.....	.....	.....	7.5	...
Big Blue and Black Vermillion Rivers	.....	.....	.....	.....	1.0	20.0	0.5	.....	2.5	0.2	1.0	.....	.....	225.0	250.2	...
Kansas River	0.3	.....	27.5	4.0	236.0	57.7	2.0	20.0	20.0	5.0	.....	.....	0.5	.....	373.0	..
Wakenda Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.5	6.5	...
Marais Des Cygnes	.....	.....	.....	.....	.....	2.0	.....	.....	.....	.....	.....	.....	.....	.....	2.0	...

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1962

PROPERTY LOSSES IN THOUSANDS OF DOLLARS

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
Missouri Basin (Continued)																
South Grand River	.....	.....	.....	.....	.....	51.0	.....	.....	.....	0.5	10.0	.....	.....	.....	61.5	...
Osage River	.....	.....	.....	.....	.....	40.0	.....	.....	.....	.....	.....	.....	.....	.....	40.0	...
Missouri Main Stem	.....	.....	.....	.....	.....	112.8	.....	.....	.....	.....	120.0	.....	20.0	.....	252.8	...
Total	844.3	556.0	423.5	374.0	590.0	1,455.5	500.5	56.0	960.0	115.7	3,372.5	78.0	871.5	303.1	10,500.6	2
Ohio Basin																
Muskingum River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	448.0	D 448.0	...
Hocking River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.0	D 29.0	...
Kanawha River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	539.0	D 539.0	...
Streams in Lincoln County, West Va.	155.6	.....	34.6	.....	30.5	.....	.....	.....	.....	.....	.....	130.0	.....	.....	D 350.7	...
Guyandot River	.....	.....	.....	469.0	16.0	.....	.....	.....	.....	.....	280.0	.....	.....	.....	D 765.0	...
Small Streams near Huntington, W. Va.	20.0	5.0	.....	3.0	8.0	2.0	.....	.....	7.0	.....	.....	.....	.....	.....	45.0	...
Twelvepole Creek	996.0	.....	.....	150.2	211.8	.....	.....	.....	.....	.....	452.0	.....	.....	.....	D 1,810.0	...
Big Sandy River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,197.0	D 1,197.0	...
Little Sandy River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,032.0	D 1,032.0	...
Licking River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	746.0	D 746.0	...
Banklick Creek, Kenton County, Ky.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500.0	500.0	1
Red River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	210.0	D 210.0	1
Kentucky River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,762.0	D 4,762.0	1
Barren River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	178.0	D 178.0	...
Rough River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	149.0	D 149.0	...
Green River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,176.0	D 2,176.0	...
Wabash and White Rivers	.....	.....	.....	.....	10.0	55.5	.....	.....	.....	.....	.....	.....	0.5	.....	66.0	1
Saline River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77.0	D 77.0	...
Cumberland River and Tributaries	A 1,856.2	.....	.....	.....	.....	F 927.1	.....	.....	.....	.....	105.0	5.5	149.2	.....	3,043.0	...
Brush Creek near Johnson City, Tenn.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75.0	...
Turkey Creek near Morristown, Tenn.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300.0	300.0	...
Ohio River Main Stem	167.0	8.6	85.0	33.0	115.0	27.0	5.0	1.5	60.0	51.0	293.3	35.0	980.6	10,223.0	12,085.0	1
Total	3,194.8	13.6	119.6	655.2	391.3	1,011.6	5.0	1.5	67.0	51.0	1,130.3	170.5	1,130.3	22,641.0	30,582.7	5
Arkansas Basin																
Chisholm Creek	170.0	.....	178.0	.....	5.0	23.0	.....	.....	.....	.....	30.0	12.0	15.0	.....	433.0	...
Little Arkansas River	1.0	0.3	5.0	.....	0.5	21.0	.....	.....	.....	.....	5.0	.....	2.0	.....	34.8	...
Euchee Creek near Sapulpa, Okla.	7.0	.....	.....	.....	0.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.5	2
Bird Creek	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	185.0	D 185.0	...
Joe and Mingo Creeks in Tulsa County, Okla.	3.0	1.5	.....	.....	.....	.....	.....	.....	.....	2.0	.....	.....	.....	.....	6.5	...
Big Cabin Creek	.....	.....	.....	.....	.....	10.0	.....	.....	2.0	.....	.....	.....	.....	.....	12.0	...
Neosho	.....	.....	.....	.....	10.0	74.8	.....	.....	.....	.....	.....	.....	.....	490.0	574.8	...
Small Stream near Woodward, Okla.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	181.0	1.8	183.0	.....	16.0	128.8	.....	.....	2.0	2.0	35.0	12.0	17.0	675.0	1,253.6	3
Red Basin																
Beaver Creek vicinity of Waurika, Okla.	.....	.....	.....	.....	.....	500.0	.....	.....	.....	.....	.....	.....	.....	.....	500.0	...
Washita River	7.5	10.0	.....	3.0	17.5	30.0	.....	.....	4.0	6.0	.....	.....	3.0	.....	81.0	...
Total	7.5	10.0	.....	3.0	17.5	530.0	.....	.....	4.0	6.0	.....	.....	3.0	.....	581.0	...
Lower Mississippi Basin																
St. Francis River	.....	.....	.....	.....	.....	75.0	.....	.....	.....	.....	.....	.....	.....	.....	75.0	...
Mississippi Main Stem	A 450.0	.....	.....	.....	.....	F 2,616.0	.....	.....	.....	.....	30.0	5.0	370.0	.....	D 3,471.0	...
Total	450.0	.....	.....	.....	.....	2,691.0	.....	.....	.....	.....	30.0	5.0	370.0	.....	3,546.0	...
WEST GULF OF MEXICO DRAINAGE																
Trinity River and Tributaries	200.0	.....	116.0	.....	.....	263.5	.....	0.5	13.0	.....	70.0	.....	.....	900.0	1,563.0	2
Brazos River and Tributaries	55.0	15.0	80.0	26.0	110.0	.....	.....	.....	.....	.....	35.1	.....	48.0	.....	369.1	...
Streams in Duval, Jim Wells and Neuces Counties, Texas	1.0	.....	.....	.....	1.0	.....	.....	2.0	10.0	.....	2.0	.....	.....	.....	D 16.0	...
Total	256.0	15.0	196.0	26.0	111.0	263.5	.....	2.5	23.0	.....	107.1	.....	48.0	900.0	1,948.1	2
GULF OF CALIFORNIA DRAINAGE																
Colorado Basin																
White River	50.0	.....	.....	.....	.....	.....	.....	.....	10.0	.....	.....	.....	.....	.....	60.0	...
Green River	.....	.....	.....	.....	.....	10.0	.....	.....	.....	.....	10.0	.....	.....	.....	20.0	...
Santa Rosa Wash	.....	.....	.....	.....	.....	F 500.0	.....	.....	.....	.....	.....	.....	.....	500.0	1,000.0	...
Total	50.0	.....	.....	.....	.....	510.0	.....	.....	10.0	.....	10.0	.....	.....	500.0	1,080.0	...

See reference notes at end of table.

ESTIMATED FLOOD LOSSES FOR 1962

PROPERTY LOSSES IN THOUSANDS OF DOLLARS

River and drainage	Urban Property					Rural Property					Other Property		Miscellaneous	Unclassified	Total Loss	Lives Lost
	Residential		Commercial		Public	Crops		Livestock	Other		RR's, bridges, Highways, etc.	Public Utilities				
	Fixed	Movable	Fixed	Movable		Growing	Stored		Fixed	Movable						
GREAT BASIN																
Bear River and Tributaries	0.2	.....	.....	.....	85.0	24.4	.....	.....	.....	.....	597.6	.....	.....	9.0	716.2	...
Sevier River and Tributaries	2.6	0.5	.....	.....	25.0	5.0	1.5	5.0	15.0	0.5	261.0	10.0	2.9	.....	329.0	...
Mary's River, North Fork of Humboldt and Minor Tributaries	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	114.4	.....	.....	147.5	261.9	...
Reese River vicinity of Battle Mountain Nevada	275.0	.....	250.0	.....	.....	.....	.....	.....	.....	.....	500.0	.....	.....	.....	1,025.0	...
Total	277.8	0.5	250.0	.....	110.0	29.4	1.5	5.0	15.0	0.5	1,473.0	10.0	2.9	156.5	2,332.1	...
PACIFIC SLOPE DRAINAGE																
California Coastal Streams																
Dominquez Creek and Ventura River in Ventura County	70.0	30.0	400.0	20.0	1,100.0	100.0	.....	5.0	15.0	10.0	900.0	100.0	30.0	.....	2,780.0	6
Rogue Basin																
Rogue River	81.0	21.0	10.0	10.0	101.0	654.0	34.0	.....	12.0	3.0	17.0	13.0	14.0	.....	970.0	...
Total	151.0	51.0	410.0	30.0	1,201.0	754.0	34.0	5.0	27.0	13.0	917.0	113.0	44.0	.....	3,750.0	6
Columbia Basin																
Beaver and Camas Creeks near Dubois, Idaho	.....	.....	.....	.....	.....	.....	.....	.....	1.0	2.0	7.0	.....	.....	.....	10.0	...
Henry's Fork	20.0	15.0	20.0	10.0	20.0	.....	20.0	.....	30.0	10.0	150.0	75.0	30.0	.....	400.0	...
Sand Creek (Bonneville County Idaho)	10.0	3.0	.....	.....	.....	.....	.....	.....	4.0	1.0	10.0	5.0	.....	.....	33.0	...
Willow and Cow Creeks (Bonneville County Idaho)	700.0	500.0	50.0	10.0	40.0	.....	100.0	.....	150.0	75.0	300.0	200.0	100.0	.....	2,225.0	...
Blackfoot River	250.0	100.0	10.0	5.0	100.0	.....	20.0	.....	80.0	30.0	250.0	50.0	40.0	.....	935.0	...
Portneuf River	803.0	505.0	105.0	200.0	500.0	.....	50.0	5.0	205.0	100.0	810.0	300.0	605.0	.....	4,188.0	...
Little Wood River	.....	.....	.....	.....	5.0	.....	.....	.....	.....	.....	2.0	.....	.....	.....	7.0	...
Big Wood River	15.0	10.0	1.0	.....	2.0	.....	.....	.....	20.0	5.0	.....	2.0	5.0	.....	60.0	...
Lemhi River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.0	.....	10.0	...
Lower Tributaries of Willamette River	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	580.0	.....	D 580.0	...
Total	1,798.0	1,133.0	186.0	225.0	667.0	.....	190.0	5.0	490.0	223.0	1,529.0	632.0	1,370.0	.....	8,448.0	...
Grand Total	9,869.7	2,044.1	1 790.7	1,325.2	3,797.3	12,967.6	738.0	81.3	1,757.4	484.5	9,982.3	1,152.0	4,003.2	25,243.3	75,236.6	19

A. Includes all residential
B. Includes all commercial
C Includes public utilities, public utilities, public property, streets and highways
D. By U.S. Engineers
E. Includes all urban
F. Includes all rural
G. Includes public utilities
H. By Tennessee Valley Authority

GENERAL SUMMARY OF RIVER AND FLOOD CONDITIONS

YEAR 1963

The most destructive floods during 1963 occurred in the Ohio Basin during March. Parts of West Virginia, Virginia, and Kentucky were declared Disaster Areas by the President. At least 17 persons lost their lives and damages were estimated in the tens of millions.

The record-breaking drought in California was ended abruptly on January 29 when a violent storm hit the central part of the State. Precipitation ranged from less than half an inch in Los Angeles to more than 27 inches in the Sierra National Forest. Several mountain stations reported storm totals in excess of those in the big floods of 1950 and 1955. Many highways and railroads were blocked by flood waters and mud slides. Record-breaking stages occurred at many gaging stations in the northern Sierras. Flooding reported elsewhere during January was mostly minor.

Major floods occurred in California, Nevada, Idaho, Oregon, Washington, and Montana early in February. Hardest hit were the basins of the American, Yuba, and Truckee Rivers, where flood peaks in many areas reached alltime highs. Seven western counties in Nevada were declared disaster areas by the President, where damage to farms, homes, businesses, roads, and public utilities was estimated to be in excess of $3 million. Near record flooding occurred in several basins in southern Idaho.

Destructive floods occurred in the Ohio Basin during March. The Guyandot and Tug Fork Rivers in West Virginia reached the highest stages of record. Crest stages in the headwaters of the Kentucky Basin were only 2 feet below the record flood of 1957. Major flooding occurred in the upper Cumberland Basin in southeastern Kentucky and on Stones and Harpeth Rivers in Tennessee. Small streams in Woodbury, Tenn., were the highest since 1902. The main stem of the Ohio was above flood stage for 22 consecutive days at Cincinnati, Ohio, the longest consecutive period on record. Parts of West Virginia, Virginia, and Kentucky were declared Disaster Areas by the President.

Flooding in continental United States during April was mostly minor. Heavy local flooding occurred on the northern islands of Hawaii on Kauai and Oahu due to torrential rains. Bucket survey confirmed report of 18-inch rainfall in 8 hours at Hakipuu Mauka, Oahu, on April 15. This was one of the heaviest storms to hit the northern islands in many years, if not a 100-year storm. The total storm damage was estimated at $2.2 million.

The most damaging floods during May occurred in the East Gulf of Mexico drainage. The floods in Georgia and Alabama caused over $1 million in damages. Flooding reported elsewhere in continental United States was mostly light.

Near record flash floods occurred during June in east-central Nebraska, causing heavy damages and some loss of life. Record flooding occurred in the upper Big Blue River Basin in Nebraska. Flash floods were reported in Alabama, Kansas, Oklahoma, and Utah. Flooding reported elsewhere in continental United States was mostly light.

Flash floods were reported over widely scattered areas of continental United States during July. The most damaging one reported was in the Hot Springs, Ark., area. This was the worst flash flood in this area since May 14, 1923. Heavy floods occurred on the Yaguez River at Mayaguez, Puerto Rico, on July 30. According to local residents, it was the worst flood in 20 years.

Flash floods occurred over widely scattered areas of continental United States during August. The most damaging one was reported in the Buffalo, N. Y., area. Heavy floods occurred on coastal streams in southern Puerto Rico on August 27 and 28. The damages were estimated between $4 and $7 million. More than 500 families were evacuated.

Flooding during September throughout the Country was mostly minor. Hurricane Cindy which moved inland west of Beaumont, Tex., produced only light flooding along the coastal areas of Texas and Louisiana.

Drought conditions prevailed throughout most of the continental United States during October. Numerous stations throughout the Country reported no measurable precipitation. Many small streams were dry in portions of their channel. Record low stages occurred on many rivers throughout the land. The only flooding reported during October was on the Choctawatchee River in Florida. The flooding was minor and due to precipitation, which fell during the latter part of September.

Flooding during November was mostly minor. The drought conditions, which prevailed throughout most of the Country during October, began to break during November. The Colorado River at Smithville, Tex., reached a record low stage of 0.68 foot on November 29. This was the second longest period of record that the Mississippi River at Memphis, Tenn., had remained at or below 0.0 (zero) feet.

The only flooding reported in continental United States during December was in South Carolina. It was very shallow and no damage was reported. Near record low stages were reached on the Lower Mississippi near the end of the month.

SOLAR RADIATION DATA

Average daily values (direct and diffuse) received on a horizontal surface, tabulated in langleys.

YEAR 1963

Station	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Albuquerque, N. Mex.	308	385	---	626	676	731	636	578	525	434	342	317	---
Ames, Iowa	168	262	315	384	---	575	534	419	375	312	---	171	---
Annette, Alaska	36	79	259	368	504	351	357	315	135	---	56	28	---
Apalachicola, Florida	265	341	452	552	586	546	506	478	---	452	303	263	---
Astoria, Oregon	115	147	272	408	560	500	487	431	387	172	98	71	334
Atlanta, Georgia	219	343	443	507	569	512	576	486	391	430	266	233	418
Barrow, Alaska	# ---	31	184	371	486	577	429	210	115	37	# ---	# ---	---
Bethel, Alsaka	29	115	235	482	---	431	387	229	243	120	61	18	---
Bismarck, N. Dak.	173	189	366	379	502	582	587	526	359	283	168	132	344
Blue Hill Obs., Mass.	157	257	335	451	529	558	533	471	357	327	124	159	400
Boise, Idaho	159	235	359	418	580	578	738	601	439	275	149	119	388
Boston, Mass.	158	256	334	452	518	559	524	463	359	311	121	148	350
Brownsville, Texas	257	383	395	517	527	627	590	595	436	378	341	228	440
Burlington, Vt.	128	240	337	398	516	541	505	401	411	291	114	145	336
Canton Island, Pacific	688	679	643	585	543	496	521	554	608	611	637	527	581
Caribou, Me.	126	251	376	406	488	569	489	371	379	230	90	127	325
Charleston, S. C.	253	299	---	509	---	486	537	496	405	367	306	248	---
Cleveland, Ohio	165	195	---	---	---	557	502	402	355	264	100	117	---
Columbia, Mo.	177	269	---	---	555	627	602	516	445	343	207	209	---
Corvallis, Oregon	151	157	286	312	528	544	585	506	406	229	116	85	325
Davis, Calif.	199	279	414	483	602	765	756	660	489	372	195	108	444
Dodge City, Kans.	252	353	453	582	---	629	654	566	463	373	272	215	---
El Centro, Calif.	---	393	489	585	662	696	650	548	459	377	---	267	---
El Paso, Texas	361	464	574	664	709	763	675	612	585	486	366	335	550
Ely, Nev.	256	322	454	457	621	602	762	620	495	387	272	239	457
Fairbanks, Alaska	13	84	208	397	539	485	463	311	262	78	360	5	267
Flaming Gorge, Utah	221	312	429	455	596	651	581	430	436	340	258	200	409
Ft. Worth, Texas	261	311	459	461	549	625	667	611	453	405	281	223	442
Fresno, Calif.	---	261	434	508	639	713	738	642	480	353	191	---	---
Gainesville, Fla.	223	---	---	528	529	549	---	---	380	412	334	225	---
Glasgow, Mont.	154	170	340	352	512	563	653	566	392	267	168	120	355
Grand Junction, Colo.	279	382	461	558	706	692	679	515	525	388	291	240	476
Great Falls, Mont.	125	206	327	413	525	515	615	530	366	245	138	109	343
Greensboro, N. C.	248	---	402	503	528	519	537	514	435	400	252	212	---
Griffin, Ga.	253	393	456	540	620	537	565	595	489	497	344	---	---
Cape Hatteras, N. C.	222	269	421	504	498	521	545	498	368	362	271	212	391
Indianapolis, Ind.	211	286	314	487	589	614	579	485	448	354	210	209	399
Inyokern China Lake, Calif.	350	---	---	728	805	---	---	---	---	---	---	---	---
Ithaca, N. Y.	123	216	---	422	---	499	512	410	379	---	86	---	---
Lake Charles, La.	197	354	419	489	557	548	* 546	---	---	408	285	218	---
Lakeland, Fla.	---	---	---	---	---	---	---	---	---	457	330	274	---
Lander, Wyo.	235	309	458	493	582	642	623	500	439	363	227	185	421
East Lansing, Mich.	150	248	302	433	533	622	---	482	387	305	141	138	---
Laramie, Wyo. (U of Wyoming)	206	274	409	466	514	571	531	422	416	310	225	177	377
Las Vegas, Nev.	290	388	516	626	711	764	748	617	538	399	310	286	516
Lemont, Ill.	157	---	---	464	---	617	559	444	388	309	173	166	---
Little Rock, Ark.	196	282	424	388	520	539	455	449	371	336	219	193	364
Los Angeles, Calif. (U)	233	316	472	573	481	517	723	639	496	359	280	269	447
Los Angeles, Calif.	237	315	480	580	500	524	664	587	481	357	282	277	440
Manhattan, Kans.	191	289	355	442	428	578	543	485	455	357	244	203	381
Matanuska, Alaska	30	98	209	357	478	434	---	---	---	101	---	---	---
Mauna Loa Obs., Hawaii	553	237	529	515	480	668	712	696	594	578	551	497	551
Medford, Oreg.	157	193	347	397	548	---	675	606	458	---	126	101	---
Miami, Fla.	334	355	533	606	551	551	608	526	387	419	324	304	458
Midland, Texas	361	---	---	529	574	620	630	562	479	402	316	203	---
Nashville, Tenn.	181	277	391	443	489	490	488	474	419	374	170	---	---
Newport, R. I.	164	254	328	458	533	543	523	464	343	324	147	155	353
New York, N. Y. (U)	157	---	---	---	---	---	---	---	---	---	170	140	---
North Omaha, Nebr.	203	267	340	427	484	623	585	503	---	369	232	193	---
Oak Ridge, Tenn.	186	258	354	418	487	443	436	430	384	348	179	184	342
Oklahoma City, Okla.	260	317	416	461	495	573	561	526	435	376	274	207	408
Page, Ariz.	224	328	464	541	613	582	579	493	458	358	271	242	429
Phoenix, Ariz.	314	403	530	628	680	732	656	558	532	435	347	319	511
Portland, Me.	152	236	357	431	499	603	532	435	398	306	107	160	351
Prosser 4 NE, Wash.	---	221	336	464	---	703	719	---	471	---	---	---	---
Pullman, Wash.	138	199	329	408	---	---	---	---	---	---	---	---	---
Rapid City, S. Dak.	186	235	388	425	530	577	555	504	364	297	191	143	366
Riverside, Calif.	270	364	499	588	584	643	748	648	535	408	323	324	495
St. Cloud, Minn.	165	244	324	403	450	566	560	489	343	275	153	126	342
Salt Lake City, Utah	198	291	465	441	644	676	721	592	487	360	216	139	436
San Antonio, Texas	291	364	410	436	489	594	616	614	505	421	291	227	438
Santa Maria, Calif.	260	---	480	580	490	---	---	---	---	---	---	281	---
Sault Ste. Marie, Mich.	169	---	---	499	578	612	571	462	349	262	114	118	---
Sayville, N. Y.	140	186	260	373	430	407	390	347	256	---	99	---	---
Seattle, Wash. (U. of Wash.)	---	153	215	319	491	534	524	506	363	294	94	56	---
Seattle-Tacoma, Wash.	---	---	247	328	568	463	488	457	348	182	97	64	---
Shreveport, La.	210	327	429	458	581	600	552	551	412	381	264	215	425
Spokane, Wash.	114	163	294	360	602	566	636	566	402	237	---	---	---
State College, Pa.	176	260	303	484	529	536	563	475	445	338	120	141	364
Sterling, Va.	213	277	359	497	559	581	583	520	402	362	202	153	392
Stillwater, Okla.	248	292	399	435	508	598	588	550	447	390	272	218	417
Swan Island, W. I.	444	473	561	642	644	588	522	593	525	459	---	371	---
Tampa, Fla.	301	347	487	615	606	574	564	524	396	454	335	275	457
Tucson, Ariz. (U. of Ariz.)	327	415	524	627	691	757	636	---	---	---	---	---	---

Note: Langley is the unit to denote one gram calorie per square centimeter.
(U) Indicates Urban sites.
* 20 Observations.
\# Sun below horizon Nov 18 through Jan. 24, inclusive.

Chart 1. Departure from Normal of Annual Temperature (°F) at Surface, 1963.

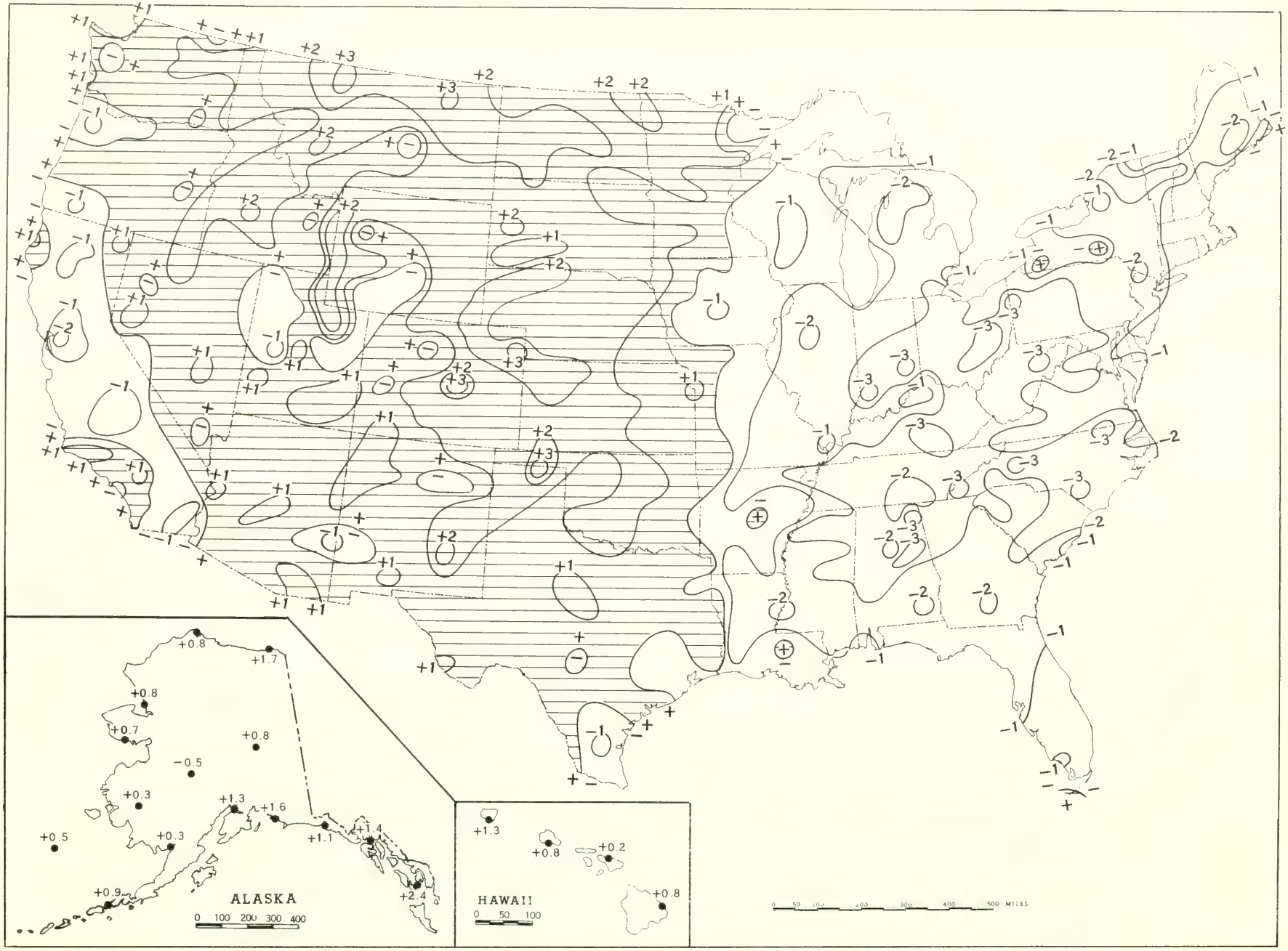


Chart II. Total Annual Precipitation (Inches), 1963.

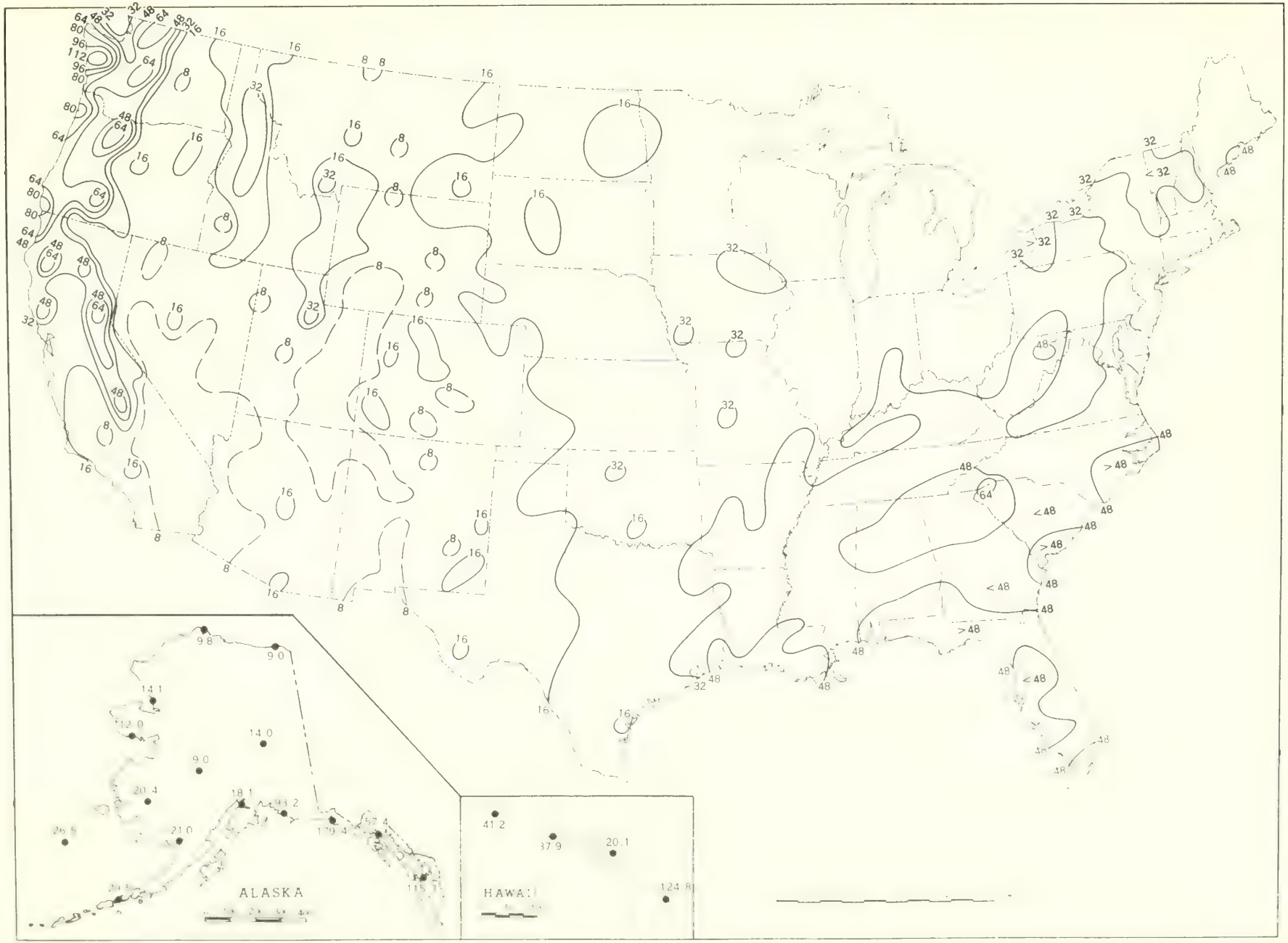


Chart III. Percentage of Normal Annual Precipitation, 1963.

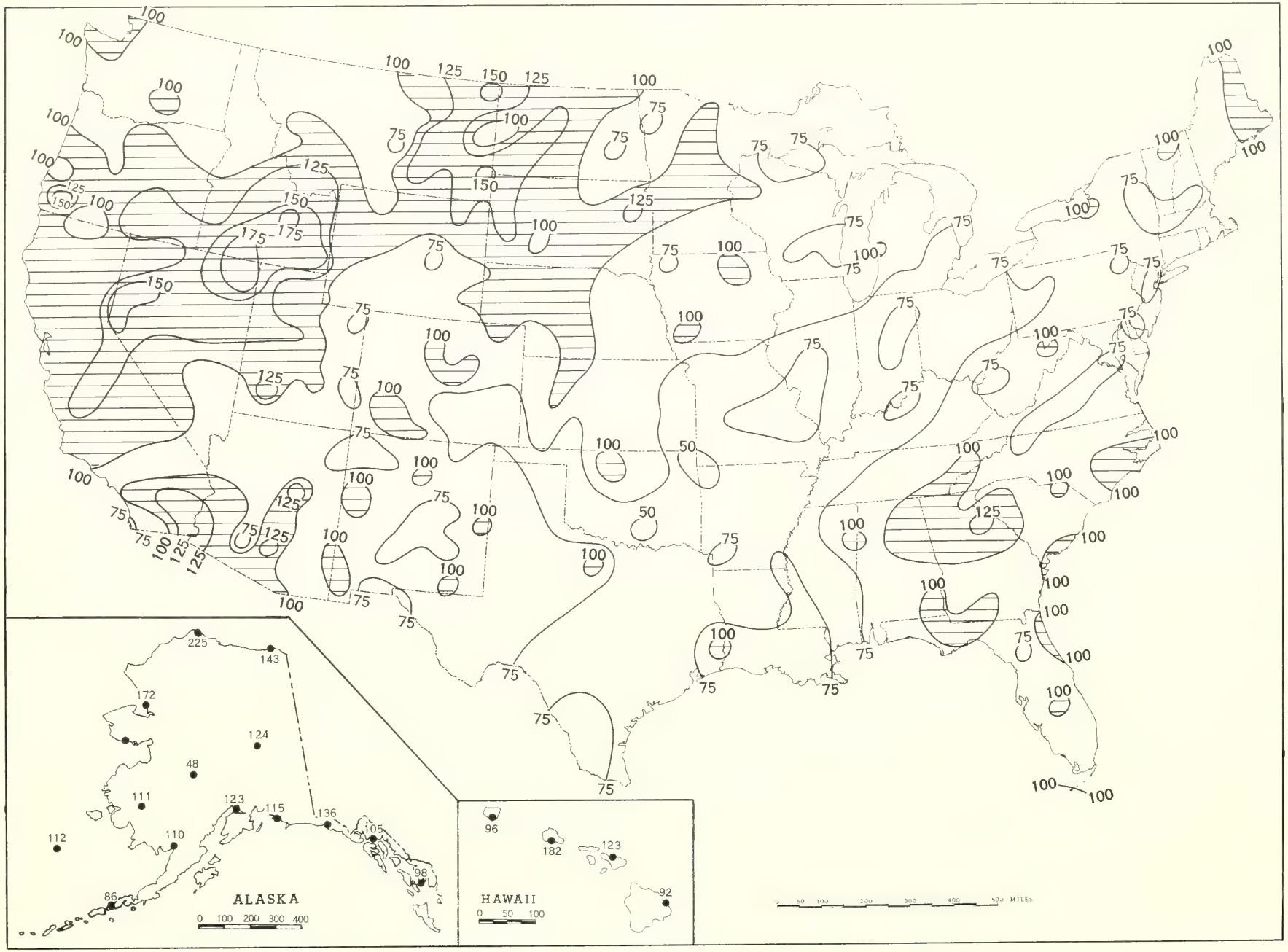


CHART IV

TRACKS OF TORNADOES, 1963



USCOMM-WB-Asheville, N. C. 8/7/64-2100

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